



Federal Housing Finance Agency

# Duty to Serve

FHFA Presents Snapshots from Freddie Mac's & Fannie Mae's  
Duty to Serve Underserved Markets Plans for Energy Efficiency



Effective December 14, 2018

# Excerpts from Freddie Mac's and Fannie Mae's Duty to Serve Underserved Markets Plans: Energy Efficiency

Compiled by the Federal Housing Finance Agency

FHFA has compiled excerpts from [Fannie Mae's](#) and [Freddie Mac's](#) Duty to Serve Underserved Markets Plans addressing activities that support energy or water efficiency improvements on multifamily and single-family properties. To access the Duty to Serve Underserved Markets Plans in their entirety, please visit FHFA's Duty to Serve website.

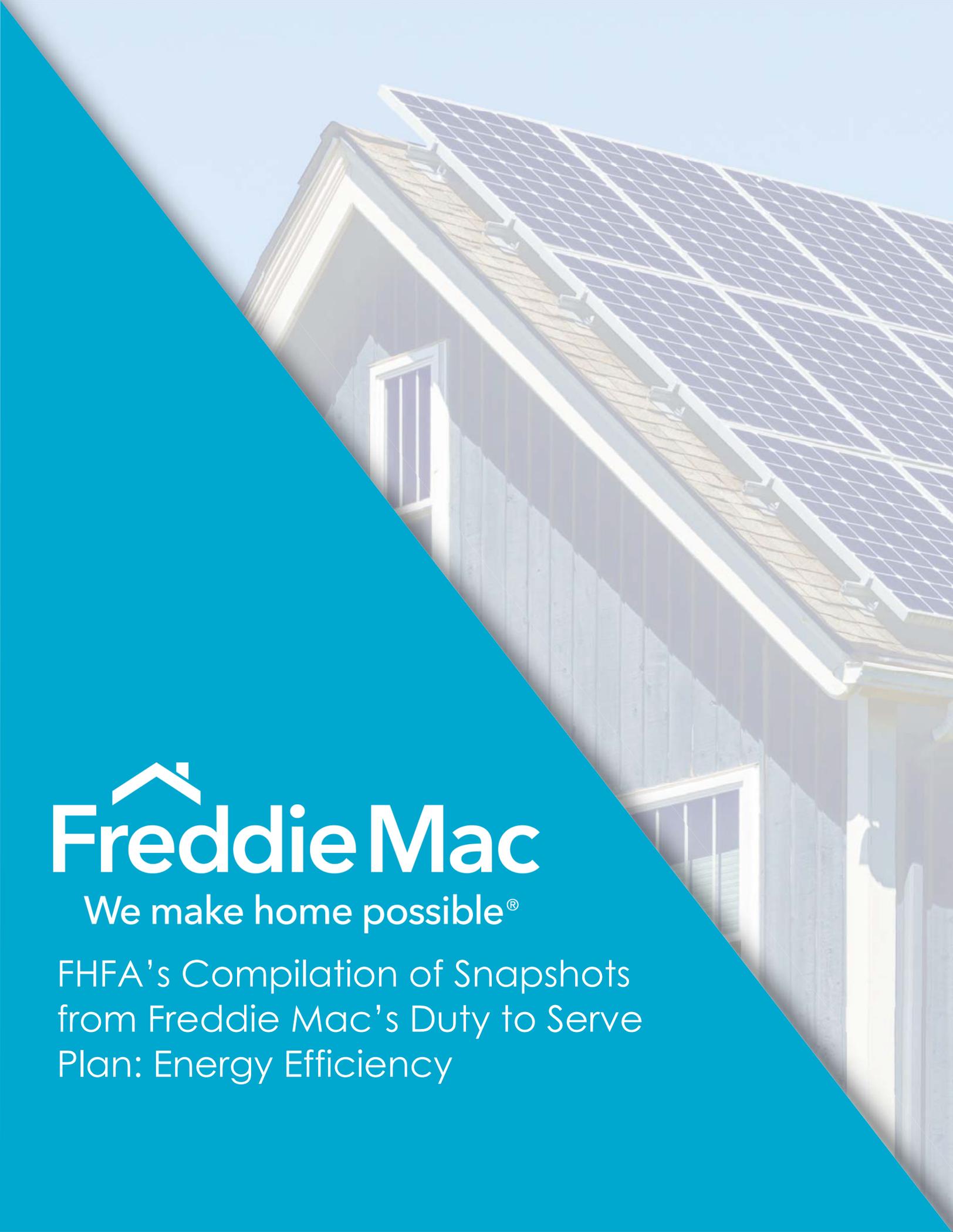
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### DISCLAIMER

Implementation of the activities and objectives in Fannie Mae's and Freddie Mac's Duty to Serve Underserved Markets Plans may be subject to change based on factors including FHFA review for compliance with the Charter Acts, specific FHFA approval requirements and safety and soundness standards, and market or economic conditions, as applicable.



  
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FHFA's Compilation of Snapshots  
from Freddie Mac's Duty to Serve  
Plan: Energy Efficiency

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## Activity 6 – Energy or Water Efficiency Improvements on Multifamily Rental Properties: Regulatory Activity

In 2016, Freddie Mac released our Green Advantage suite of energy- and water-efficiency financing offerings, which are focused on helping borrowers improve properties and reduce energy or water consumption by at least 15 percent while investing at least \$350 per unit. Prior to the suite's launch, we understood that general market interest in financing to support energy or water efficiency improvements existed, and the market saw opportunities for savings, particularly in older and more affordable properties. However, there were several challenges that limited market adoption:

1. Energy or water efficiency were not consistently top priorities for borrowers.
2. Timing for energy analysis did not align with deal timelines.
3. Energy usage data, particularly for tenants, was not readily available in the majority of markets.

In designing our Green Advantage program, we focused on ways we could reduce these challenges and develop broadly adoptable offerings.

To address questions of borrower priorities and timing, we took three actions:

1. Established simple criteria for properties that would be a good fit for Green Advantage so seller/servicers and borrowers would have a clear understanding of the properties that would be candidates for green improvements.
2. Worked with energy efficiency consultants to design our Green Assessment, which can be completed within two weeks and helps borrowers make decisions about improvements early on.
3. Decided to pay for the Green Assessment (up to \$3,500) as long as the borrower obtains a Freddie Mac loan (whether or not it is a Green loan) so the borrower does not have to decide if it is worth considering green improvements.

As a result of these efforts and our collaboration with industry partners, we have purchased over \$15 billion of loans across more than 150,000 units under Green Advantage in the first year of the program through 3Q2017, and we have an active pipeline of loans continually forthcoming. Clearly, the program has achieved broad market acceptance and we have created a market for energy efficiency improvements that did not previously exist.

We expect to see continued adoption of the program, and we intend to leverage the information we collect both through our Green Assessments and through our annual property energy and water consumption benchmarking requirements<sup>114</sup> for the benefit of the broader market by producing an annual study of energy and water efficiency through the Green Advantage program.

**OBJECTIVE A: PUBLISH AN ANNUAL STUDY OF ENERGY AND WATER EFFICIENCY THROUGH THE GREEN ADVANTAGE PROGRAM**

Evaluation Area	Year	Incomes Targeted	Extra Credit
<b>Outreach</b>	<b>1, 2 and 3</b>	<b>VLI, LI, MI</b>	<b>Not applicable</b>

In developing Green Advantage, and through subsequent conversations with lenders, borrowers, trade organizations, researchers and advocates, we have found strong interest in the property data we collect and the types and benefits of improvements borrowers are making. This data and analysis of efficiency measures on multifamily properties will likely strengthen the market for energy- and water-efficiency improvements and support efforts beyond the GSEs’ specific programs.

Therefore, in all three years of the Plan term, we intend to publish a report on the Green Advantage program based on the loans we have purchased, the energy and/or water efficiency improvements planned and made, the estimated costs of those improvements, the projected savings and the savings realized thus far. We intend to work with market participants such as energy efficiency stakeholders, appraisers and property owners to inform our analysis and reporting. Our intention with this outreach is to continually work with program users (borrowers, seller/servicers, and energy consultants) to better understand the improvements selected, expected costs and savings, and the actual results collected from developers. Our findings will be posted annually on our website and marketed through a press release.

In the early years of this report, we will focus more on the measures selected by borrowers and the projected savings. By Year 3, we will begin to see actual savings based on our benchmarking data collection. In later years, our reports will analyze this information, which will provide valuable insights on the likely savings for different efficiency measures in the context of multifamily properties, which should serve as industry benchmarks.

**Baseline**

We do not have a database today that serves the functions described; however, we have instituted strong benchmarking requirements for all Green Advantage loans, for which we require 10 percent of tenants’ utility data be collected for analysis for all loans post closing through two years after the completion of green improvements, and we have begun aggregating data and scoping reporting needs.

**Challenges, Actions and Market Impacts**

Market Challenge	Freddie Mac Action
<p><b>Lack of market data</b></p> <ul style="list-style-type: none"> <li>▪ Energy and water efficiency market data is limited or unavailable due to slow market adoption of green practices.</li> <li>▪ Green improvement data was not available until the introduction of Green Advantage.</li> <li>▪ Prior to third quarter 2017, borrowers were not required to track energy and water information until after they completed their green improvements. As a result, we do not have</li> </ul>	<p><b>Year 1 – 2018</b></p> <ol style="list-style-type: none"> <li>1) Create a research database that will contain estimated and actual energy efficiency data collected from Green Assessment reports and Energy Star Portfolio Manager on properties with Freddie Mac Green Advantage loans as that data becomes available. In the first year of the Plan, most efficiency data will be estimated until green improvements are completed and post-improvement data is captured in Portfolio Manager. This data will at</li> </ol>

immediate access to this data.

- Our initial research will be based on estimated green data until actual data is accessible in Year 2.
- We have since refined our program requirements, so borrowers are now required to track consumptions post-closing.
- Tenant data is not readily available because borrowers must receive consent from tenants to get access to this information.

least include the following:

- a. Basic property information
  - b. Potential green improvements
  - c. Improvements selected by borrowers
  - d. Estimated costs of improvements
  - e. Projected savings by efficiency measure and in aggregate
- 2) Publish a report on identifying and analyzing energy and water efficiency measures selected through Freddie Mac Green Advantage loans
  - 3) Post the report on our website and promote it to the public through a press release.
  - 4) Publish underlying property level data for public analysis including the following information:
    - a. Property state
    - b. Property county
    - c. Year built
    - d. Number of units
    - e. Property type (for example, garden, high-rise, mid-rise)
    - f. Type of savings pursued (energy/water/both)
    - g. Green improvement measures pursued
    - h. Projected savings of measures
    - i. Estimated costs of measures

**Year 2 - 2019**

- 1) Collect and analyze estimated and available actual energy efficiency data collected from Green Assessment reports and Energy Star Portfolio Manager on Freddie Mac Green Advantage loans to facilitate easier analysis as that data becomes available. In the second year of the Plan, we expect to receive actual efficiency data through Portfolio Manager, as more green improvements are completed and post-improvement data is captured in Portfolio Manager, as more green will have been completed and data captured.
- 2) Require collection of at least 10 percent of tenant data as a requirement of the program.
- 3) Publish a report identifying and analyzing

energy- and water-efficiency measures selected through Freddie Mac Green Advantage loans. This data will at least include the following:

- a. Basic property information
- b. Geographic location of properties
- c. Type of property
- d. Potential green improvements,
- e. Improvements selected by borrowers
- f. Actual savings based on previous year

4) Post the report on our website and promote it to the public through a press release.

5) Publish underlying property level data for public analysis including the following information:

- a. Property state
- b. Property county
- c. Year built
- d. Number of units
- e. Property type (for example, garden, high-rise, mid-rise)
- f. Type of savings pursued (energy/water/both)
- g. Green improvement measures pursued
- h. Projected savings of measures
- i. Projected Savings overall based on selected measures
- j. Estimated costs of measures
- k. Post-improvement consumption metrics (as this data becomes available, recognizing that it will take up to two years or more until work is completed on the properties and post-improvement consumption can be tracked)

**Year 3 – 2020**

1) Continue to collect and analyze estimated and available actual energy efficiency data from Green Assessment reports and Energy Star Portfolio Manager on Freddie Mac Green Advantage loans.

2) Publish a report identifying and analyzing energy and water efficiency measures selected through Freddie Mac Green

	<p>Advantage loans.</p> <ol style="list-style-type: none"><li>3) Implement program improvements based on feedback from borrowers, sellers, localities, and research organizations.</li><li>4) Include analysis in the report based on at least the following: geography, types of efficiency measures, types of buildings.</li><li>5) Post the report on our website and promote it to the public through a press release.</li><li>6) Publish underlying property level data for public analysis including the following information:<ol style="list-style-type: none"><li>a. Property state</li><li>b. Property county</li><li>c. Year built</li><li>d. Number of Units</li><li>e. Property type (for example, garden, high-rise, mid-rise)</li><li>f. Type of savings pursued (energy/water/both)</li><li>g. Green improvement measures pursued</li><li>h. Projected savings of measures</li><li>i. Projected savings overall based on selected measures</li><li>j. Estimated costs of measures</li><li>k. Post-improvement consumption metrics (as this data becomes available, recognizing that it will take up to two years or more until work is completed on the properties and post-improvement consumption can be tracked)</li></ol></li></ol>
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Resource Challenge	Freddie Mac Action
<ul style="list-style-type: none"> <li>▪ Workforce will need to be employed in order to create a database from the ground up.</li> <li>▪ The database will require ongoing maintenance as necessary, updates will require ongoing work</li> <li>▪ Throughout the Duty to Serve Plan, we are taking on a considerable number of research efforts, all of which require extensive planning, as well as collaboration with key stakeholders, and analysis. The design and research of all of these objectives will have many unique components, and will leverage the expertise and skills of our internal research organization, whose focus extends beyond the scope of the Duty to Serve Plan.</li> </ul>	<p><b>Year 1 – 2018</b></p> <ol style="list-style-type: none"> <li>1) Assemble a design team to create the database. This team will be made up of individuals from IT, research, and business teams.</li> <li>2) Identify the needs of stakeholders by engaging with at least the following: <ol style="list-style-type: none"> <li>a. Two research and policy organizations</li> <li>b. Three appraisers</li> <li>c. Three borrowers</li> <li>d. Three sellers/servicers</li> <li>e. Three Green Assessment vendors</li> </ol> </li> <li>3) Produce an annual report.</li> </ol> <p><b>Year 2 – 2019</b></p> <p>Researchers should continue outreach to update the database based on needs of the market and new data coming in.</p> <ol style="list-style-type: none"> <li>1) Receive actual data from borrowers on their energy and water consumption.</li> <li>2) Review and revise our tracking mechanism as appropriate.</li> <li>3) Produce annual report as described above.</li> </ol> <p><b>Year 3 – 2020</b></p> <p>Same as Year 2.</p>

## Market Impact

Green Advantage has already facilitated large scale market adoption of green practices in multifamily properties by eliminating challenges tied to borrower priorities and timing and in so doing, we have unlocked liquidity for energy efficiency improvements at an extremely large scale (over \$15 Billion and 150,000 units since program inception through 3Q2017). Prior to the program, only a limited number of property owners were making deliberate green investments in their multifamily properties, resulting in a dearth of energy and water efficiency related data, and many missed opportunities, particularly among workforce housing properties. The program's success will allow Freddie Mac to address the current lack of market data as we collect information both through our Green Assessments and through our annual property energy and water consumption benchmarking requirements. This data can help the industry move on to greater predictability about efficiency improvements and focus on work that will lead to even deeper savings than those described in Duty to Serve.

Freddie Mac's analysis will result in an ongoing report that will provide an understanding of the pragmatic steps necessary to improve the efficiency of multifamily housing stock as well as the benefits of doing so. Industry groups, such as trade organizations, research organizations, and borrowers have consistently requested the ability to leverage this data.

Our analysis of Green Advantage data will increase the market's understanding of energy efficiency improvements and help to inform borrowers' property improvement decisions related to their efforts to reduce expenses and preserve affordability. The data should also benefit appraisers as they develop valuations and other market participants as they seek to create more efficient, cost effective buildings. In so doing, we are laying the groundwork for future innovations in energy and water efficiency tied to applications on multifamily properties.

Through the collection, analysis and reporting of this market data, Freddie Mac will help to establish industry benchmarks for energy and water efficiency improvements for multifamily properties, and lay a foundation for borrowers to make greater improvements to their properties. The release of an annual energy and water efficiency study will benefit the multifamily market and support efforts beyond the GSEs' specific programs. By conducting this analysis and sharing the analysis and detailed underlying data with the public that would not otherwise be available, we will have substantial impact on the development of further solutions to challenges in this market. We will also leverage the ongoing analysis to refine our Green Advantage program in an attempt to drive greater impact and greater value for the investments in the properties. Over time, we believe this work will also make green improvements on properties more cost efficient and cost effective as borrowers, equipped with greater knowledge, can make better decisions about improvements that can provide environmental benefit and cost savings to tenants.

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## Activity 7 – Financing of Energy or Water Efficiency Improvements on Single-Family Properties: Regulatory Activity

Freddie Mac is committed to supporting the energy efficiency market as part of our goal to preserve home affordability. We currently support this market through product features and underwriting flexibilities that can be applied to all Freddie Mac products meeting certain criteria. However, through market outreach, we have concluded that our products do not always align with this market's evolving needs and that lenders have limited awareness of Freddie Mac's offerings to finance energy efficiency improvements. Freddie Mac's current product features and underwriting flexibilities, which are our overall baseline for objectives under this activity, are summarized below:

- Freddie Mac will purchase mortgages on properties that are being retrofitted, refurbished or improved with energy efficiency features if an escrow account is established.
- On manually underwritten loans, lenders can use energy efficiency features as a compensating factor for higher debt-to-income ratios.
- Freddie Mac's cash-out refinance allows borrowers to obtain funds that can be used to make energy efficient improvements, pay off existing unsecured debt obligations related to energy efficiency improvements or pay off property assessed clean energy (PACE) loans.
- Freddie Mac also offers a no cash-out refinance option, which allows for higher LTV ratios than cash-out refinance transactions, that permits the payoff of PACE loans with the proceeds from the refinance transaction.
- Freddie Mac's Home Possible mortgages offer eligible borrowers a low-down payment option with flexible underwriting features, which can be combined with Freddie Mac provisions that support energy renovations and retrofits in purchase or refinance transactions.

We recognize that to help this emerging market grow further, our product offerings could better align with the market's evolving needs and be designed to promote standardization. Under this activity, Freddie Mac's objectives focus on building on existing offerings and developing standardized product features and underwriting flexibilities that address some of the most pressing market needs, such as property-level data collection mechanisms and collateral valuation guidance. We will specifically focus on promoting standardization of data collection by building on existing uniform mortgage data collection mechanisms to include energy efficiency property information. We believe focusing on these needs will lay the foundation for the future growth of first lien financing of energy efficiency improvements. We also plan to address the inadequate consumer awareness and limited data on performance of loans on energy-efficient properties, which have prevented this market from growing further. Specifically, Freddie Mac intends to engage in the following objectives during the Plan term:

- Conduct research on the impact of energy efficiency improvements on property values and mortgage performance and publish our findings to provide the market with information to be used in product design.
- Develop valuation guidance and data collection requirements that factor in energy efficient property features.
- Design new or improved product flexibilities to facilitate financing of energy efficiency improvements.

Freddie Mac acknowledges that loan purchases are important to increase liquidity in this market and expand the distribution of capital. Therefore, we will purchase loans to inform our product design efforts during all three years of the Plan. During years 1 and 2, our focus will be on building the appropriate infrastructure, capabilities, and products to ensure sustainable market growth. Currently, there is limited market sales data to produce historically-based market sales projections that would accurately reflect the size of the first lien market versus Freddie Mac's probable market share. Nevertheless, we are committing to purchase loan volumes based on likely purchase volume assumptions to indicate our strong commitment to this market.

**OBJECTIVE A: RESEARCH THE RELATIONSHIP OF ENERGY-EFFICIENT HOMES TO PROPERTY VALUES AND MORTGAGE PERFORMANCE**

Evaluation Area	Year	Incomes Targeted	Extra Credit
<b>Loan Product</b>	<b>1, 2 and 3</b>	<b>LMI, MI</b>	<b>Not applicable</b>

In 2016, Freddie Mac established its Energy Efficiency Task Force, a collaborative effort to learn about the energy efficiency market and the issues preventing its growth. Task force members consisted of executive level representatives of leading organizations in this market. During our meetings, we repeatedly heard about the lack of data to be used in product development. Several task force members encouraged us to take on research to help inform the market on the relationship of energy-efficient homes to property values and loan performance—two key factors that would inform future product design and policy decisions. Other than the product features and underwriting flexibilities described in the first section under this activity, Freddie Mac does not have a dedicated product or additional flexibilities to serve this market. Freddie Mac plans to conduct this research and use the findings to design energy efficiency product features and marketing campaigns about the value of energy efficiency.

Specifically, during the first year of the Plan, Freddie Mac will conduct research on of the relationship of energy-efficient homes to their property values and underlying loan performance. We plan to investigate the house price premium associated with energy efficiency improvements or better energy efficiency ratings. House price premiums are important to understand because many of our policy decisions are based on the value of properties that will serve as collateral for loans we purchase and eventually securitize. Further, we plan to compare the default risk for mortgages for energy improvements or on more energy-efficient homes to the default risk associated with other mortgages. This is important to understand because it will allow us to design appropriate requirements or flexibilites to more accurately manage the risk we take on when purchasing loans under this activity. Additionally, Freddie Mac plans to use the results of our research to adjust our product offerings in Year 2 under Objective B. We also intend to conduct periodic trending analysis after Year 3. Freddie Mac is uniquely situated to carry out this objective because we have a national presence, we can leverage larger data sets and we already have access to much of the foundational information needed.

In addition to using our research findings to inform our product design efforts, we also intend to use our findings to promote awareness about energy efficiency across the industry. Market participants told us that consumers have limited access to information about the value of energy efficient homes, and real estate professionals often do not have readily available property-level information. Both groups lack appropriate awareness about financing products available to pay for energy efficiency improvements. A 2012 study by Resource for the Future, a Washington, D.C.-based think tank, indicates that consumer behavior coupled with the absence of good information about the pay-offs from particular investments and the relatively low price of energy, have contributed to the lack of demand. Therefore, Freddie Mac intends to publish our research findings on our website during the second year and incorporate them into our customer training curriculums and industry event presentations during Year 3. In Year 3, we also plan to promote our findings to consumers to increase consumer access to education and information about the benefits of energy efficiency home improvements and first lien mortgage options available to finance them. For this, Freddie Mac will leverage its existing outreach capabilities, dedicated customer education teams and wide-ranging outreach and communications channels.

**Baseline**

Freddie Mac has never taken on this specific research. Existing studies have explored aspects of home price premiums and loan performance and suggest that the premiums associated with energy efficiency or green labels vary by geography and type.<sup>115</sup> However, existing studies have been conducted with limited scope or data and cannot be used empirically to design standardized requirements or scalable product flexibilities. Therefore, Freddie Mac sees an opportunity to expand house price research to a broader geographic area so we can apply

our findings to our product design and policy development efforts described under Objective B. Additionally, a 2013 research report by the University of North Carolina’s Center for Community Capital and the Institute for Market Transformation found “default risks are on average 32 percent lower in energy efficient homes even when other loan characteristics are considered. Under this objective, we plan to use this study as a baseline and expand our research scope with more recent data, more complete geographic coverage and more considerations for income and other differences between borrowers with energy efficient homes and those with non-energy efficient homes.

## Challenges, Actions and Market Impacts

Challenge	Freddie Mac Action
<p><b>Limited transaction-level data</b></p> <ul style="list-style-type: none"> <li>▪ There is limited aggregate data to properly assess risks and model performance of properties with energy efficiency features.</li> <li>▪ There is limited research on the impact of energy efficiency improvements on single family loan performance, property values, and eventually securities comprised of energy efficiency debt.</li> <li>▪ There is inadequate information about energy-efficient property features.</li> </ul> <p><b>No standard valuation methodology</b></p> <ul style="list-style-type: none"> <li>▪ There is no consistent nor widely adopted approach to account for the impact of energy efficiency improvements to property value.</li> <li>▪ The industry recognizes the sales comparison approach as widely adopted and the preferred approach to support the value of properties. However, there is limited empirical data about the premium associated with energy efficiency home features.</li> </ul> <p><b>Limited awareness</b></p> <ul style="list-style-type: none"> <li>▪ There are financing options in the marketplace but consumer awareness about them has remained low even in geographies where renewable energy is largely popular.</li> <li>▪ Consumers have limited understanding of the benefits of energy-efficient homes.</li> <li>▪ Real estate professionals have limited access to information about financing products available for energy efficiency improvements.</li> </ul>	<p><b>Year 1 – 2018</b></p> <ol style="list-style-type: none"> <li>1) Procure external data and leverage internal data on energy efficiency ratings, property values, and property attributes. Data to be procured includes the following:             <ol style="list-style-type: none"> <li>a. Energy efficiency rating data from various home energy rating entities</li> <li>b. Parcel data</li> <li>c. Property level information, including heating/cooling system types</li> <li>d. Appraisal data</li> <li>e. Home sales data</li> <li>f. Real estate datasets</li> </ol> </li> <li>2) Design new, or leverage existing, internal models and define control group and independent variables needed to complete data analysis. Freddie Mac will seek input from our Energy Efficiency Task Force as these are developed.</li> <li>3) Construct final sample dataset of statistically appropriate significance. We plan to obtain feedback on the size and characteristics of our final sample from our Energy Efficiency Task Force.</li> <li>4) Conduct research on how house prices respond to energy efficiency improvements or better energy efficiency ratings by comparing sales prices and property values for energy rated or more energy-efficient homes to less energy-efficient homes, with considerations for property characteristics. Freddie Mac will build upon existing studies done to-date.</li> <li>5) Evaluate the default risk of mortgages for energy efficiency improvements or on more energy-efficient homes compared to other mortgages by analyzing the likelihood of delinquency or default, with considerations for</li> </ol>

borrower, loan, and property characteristics. Freddie Mac will build upon existing studies done to-date.

**Year 2 - 2019**

- 1) Provide FHFA a report that describes product development decisions or actions to be taken that directly result from research findings.
- 2) Incorporate research findings into the development of data collection requirements described under Objective C.
- 3) Publish the results of our analysis of property values and loan performance for mortgages associated with energy efficiency improvements or better energy efficiency ratings in a white paper.
- 4) Present or disseminate research findings in at least four industry events, during Freddie Mac Customer Advisory Council meetings, and via email to all Single-Family News subscribers. We plan to post the results of our research on our website. We also plan to drive traffic and create awareness about it by publishing at least one news article in our News Center page, publishing at least two blogs in both our consumer and corporate blog sites, and sending emails to all our News Center subscribers
- 5) Partner with various organizations, lenders, or energy advocacy groups and work with them to create links in their respective webpages that direct individuals to Freddie Mac's pages where our white paper and corresponding news articles and blogs are posted.

**Year 3 – 2020**

To support our loan purchase targets described in Objective C, we will provide education or information, based on our research findings, about the value of energy efficiency and first lien mortgage options available to consumers:

- 1) Disseminate consumer education or information in at least four homebuyer events in partnership with entities supporting homeowners and homebuyers and work with our Borrower Help Centers to disseminate energy efficiency information to their respective borrowers and prospective borrower clients.
- 2) Publish a series of consumer-focused blogs on our blog site within Freddiemac.com that presents information derived from our

	<p>research about the benefits of energy efficiency.</p> <ol style="list-style-type: none"> <li>3) Incorporate information about energy efficiency product options into our ongoing real estate professional outreach efforts and partner with at least three real estate professional or trade organizations to coordinate outreach activities to their respective membership bases.</li> <li>4) Conduct marketing campaigns about Freddie Mac product features (to be designed under Objective C) and the benefits of energy efficiency improvements. This is an activity that relates to Objective C but will be built upon the results of our research under this activity. Specifically, we will use the research findings related to loan performance to market our product flexibilities by providing information that will build lender confidence.</li> </ol>
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**Market Impact**

Performing this research will provide valuable information that is not currently available and therefore addresses a need that was repeatedly echoed during our outreach. The study's conclusions will help set the foundation for this market since, by publishing it and through our extensive outreach efforts, it could be used by the industry to design products, collateral valuation methodologies, and underwriting requirements, beyond Freddie Mac's efforts. Freddie Mac plans to use the research findings to inform our own product design efforts and in the design of our underwriting guidance, policies and product features under Objectives B and C. Although some studies of similar scope have been performed in the past, we plan to create larger datasets, use more recent data, and leverage our significant experience in collateral valuation and loan performance analytics to build upon existing studies. To meet this objective, we will need to obtain wide-ranging and comprehensive data to analyze which, given the lack of data standardization and absent of any single comprehensive data repository, will involve a high level of effort on Freddie Mac's part. For example, we anticipate a significant effort to consolidate, dissect, clean, and reformat the various datasets we will procure into a usable dataset. Additionally, we anticipate having to spend significant resources mapping data files from datasets we procure into new datasets we will develop. We will leverage our experience in collateral valuation, data analytics, expertise in loan performance assessment and established partnerships with a wide range of energy efficiency participants.

During years 2 and 3, Freddie Mac plans to publish its findings to inform the market, including consumers, through industry outreach and education campaigns, as described under the section above, that will be designed to reach large and small lenders, consumers, real estate professionals, and a broad spectrum of entities. While the white paper will be an academic paper, we plan to summarize our findings for non-academic audiences and write blogs and news articles in consumer and lender-friendlier language to maximize the impact of our outreach and marketing campaigns. We believe these campaigns will directly address the lack of consumer information and industry awareness described above. We also anticipate that our outreach efforts will increase awareness about the benefits of energy efficiency. Educating consumers and real estate professionals about available financing options may also help increase market demand and lender adoption since consumers may start asking more about financing of energy efficiency improvements, real estate professionals may be able to address their customer needs, and consumer interest may prompt more lender participation. We anticipate a significant level of effort during years 2 and 3 given the high level of coordination between carrying out this objective, Objective C and managing all the outreach and communication tactics as described above.

**OBJECTIVE B: DEVELOP VALUATION GUIDELINES AND DATA COLLECTION REQUIREMENTS**

Evaluation Area	Year	Incomes Targeted	Extra Credit
<b>Loan Product</b>	<b>1, 2 and 3</b>	<b>LI and MI</b>	<b>Not applicable</b>

An important challenge we heard through our market outreach relates to property valuation. Members of our Energy Efficiency Task Force with expertise in property appraisals encouraged Freddie Mac to provide specific guidance on property valuations. They believe that the lack of guidance from the GSEs has contributed to the lack of valuation standards which is a key challenge for this market. Specifically, appraisal organizations and energy efficiency advocates and trade groups, want to ensure energy efficiency improvements or the utility savings from energy-efficient homes are capitalized in property appraisals and lenders want assurance that those appraisals will be accepted by Freddie Mac. To help the industry appropriately account for energy efficiency, during the first year of the Plan term, Freddie Mac intends to provide more specific property valuation guidance related to energy efficiency improvements and energy-efficient properties, which will be the precursor to more comprehensive requirements that will result from the completion of the property data standardization project described in this Objective.

Additionally, Freddie Mac does not currently have specific monitoring processes to track existing loans with energy efficiency improvements. This precludes us from analyzing loan performance trends, performing collateral valuation analysis of loans we have purchased and from tracking loan purchase volumes internally. Therefore, a key priority under this objective during Year 1 will be to define and improve our ability to track loans used to finance energy efficiency improvements. The scope will include tracking of loan deliveries under our products that are broadly available as well as loan deliveries under pilots.

Members of our task force also told us that the absence of property-level data adds complexity to current valuation practices. We learned that the market needs a central repository for energy efficiency information within the appraisal report. The Appraisal Institute introduced the Residential Green and Energy Efficient Addendum, a form that is meant to augment information within the appraisal report, standardize the energy efficiency information reported about a home and provide a basis for comparable sale selection. However, adoption of the addendum has been limited due to the operational burden it presents for lenders. In the past, Freddie Mac provided guidance with respect to appraisals and adopted a version of the Residential Green and Energy Efficient Addendum as part of its requirements. This guidance was later retired based on industry feedback related to complexities, lack of property data, and additional due diligence involved. Under our Plan, we look to design data collection and valuation requirements that minimize operational burdens on lenders, real estate professionals, and appraisers. Our task force members encouraged us to consider incorporating data collection methods into our appraisal requirements. Freddie Mac has considered this request and believes it to be important for market growth and that it addresses a key data gap in the market. Therefore, during the first two years of the Plan, in addition to designing valuation guidelines and developing tracking processes in Year 1, Freddie Mac intends to engage in conversations with FHFA and other stakeholders to identify additional data that should be collected through the Uniform Residential Appraisal Report. Provided alignment is reached among key stakeholders during the second year of the Plan term, we intend to take steps to incorporate energy efficiency data collection fields into the appraisal report during the third year of the Plan term.

**Baseline**

Currently, Freddie Mac provides general collateral valuation guidance and requires that the appraiser identify the energy efficient features and make appropriate adjustments if the features affect the property's value or marketability. However, identifying energy efficient features absent property-level data that includes this information is challenging. In the past, Freddie Mac has required the use of a variation of the Residential Green and Energy-Efficient Addendum. However, it retired this requirement based on customer feedback that it

presented operational complexity and added transaction costs. Outside of these efforts and existing valuation guidance, Freddie Mac has not focused on designing valuation guidance or data collection requirements specifically focused on energy efficiency as described above.

**Challenges, Actions and Market Impacts**

Challenge	Freddie Mac Action
<p><b>No standard data collection mechanism</b></p> <ul style="list-style-type: none"> <li>▪ There is no central repository for energy efficiency specific information within the appraisal report.</li> <li>▪ Many energy efficiency improvements in a home are not apparent or highly visible to an appraiser without doing additional research or due diligence. Absent a standard property database, identifying energy-efficient features of properties is laborious and highly manual.</li> </ul> <p><b>No tracking mechanism</b></p> <ul style="list-style-type: none"> <li>▪ Freddie Mac does not currently have a systematic mechanism to track energy efficiency loans.</li> </ul>	<p><b>Year 1 – 2018</b></p> <ol style="list-style-type: none"> <li>1) Test the use of an upgraded version of the appraisal addendum to collect energy efficiency property information during the appraisal process with at least one lender through a pilot program to further inform operational execution and determine whether further appraisal guidance is needed. The pilot will allow us to calibrate the data that needs to be captured in the appraisal and allow us to identify data points that may be difficult to obtain so we can address such challenges accordingly as we develop the list of additional data points to be incorporated into a revised Uniform Residential Appraisal Report. For this pilot, we plan to partner with at least one appraisal organization.</li> <li>2) Develop infrastructure and processes to better identify and track Freddie Mac loan purchases tied to financing of energy efficient homes or energy efficiency retrofits.</li> <li>3) Establish governance process, project charter, and industry stakeholder group to engage in conversations to carry out this objective.</li> <li>4) Lead ongoing stakeholder sessions, as per the governance process, to formally start the conversation about incorporating data collection and high efficiency property appraisal guidelines into collateral policy requirements; we plan to engage at least one representative organization from each of the following: national lenders, regional/community lenders, small lenders, appraisal trade organizations, real estate professional organizations and other market participants.</li> </ol> <p><b>Year 2 – 2019</b></p> <ol style="list-style-type: none"> <li>1) Continue stakeholder discussions about incorporating energy efficiency property data collection requirements into property</li> </ol>

appraisal guidelines

- 2) Conduct internal impact assessments on the inclusion of additional data elements into the Uniform Residential Appraisal Report.
- 3) Coordinate GSE and stakeholder alignment on energy efficiency data fields to be incorporated into the Uniform Residential Appraisal Report.
- 4) Expand the use of an appraisal addendum to collect energy efficiency property information during the appraisal process to at least 5 more lenders through the same pilot started in Year 1. We plan to modify the pilot terms and data collection guidelines as we go based on feedback and information gathered through the execution of the pilot.

**Year 3 – 2020**

- 1) Incorporate agreed upon energy efficiency data fields into the future redesign of the Uniform Residential Appraisal Report. (Actual completion of appraisal form redesign will be dependent on the project timeline for the Uniform Mortgage Data Program®.)
- 2) Provide updated appraisal guidance on properties with energy efficiency features through a Seller/Service Providers Guide update. (Issuance of any guidance will be dependent on completion of appraisal form enhancement).
- 3) Work with lenders included in the appraisal addendum pilot to transition to the new appraisal guidance by providing technical support and dedicated assistance (This item assumes implementation of updated appraisal form happens as scheduled).
- 4) If there are implementation delays, expand and continue the use of interim appraisal addendums to collect energy efficiency property information during the appraisal process to additional lenders.

## Market Impact

Once stakeholders agree on the energy efficiency data elements that should be collected through the Uniform Residential Appraisal Report, providing a data collection repository would directly address a challenge that market participants have repeatedly cited as a key market gap. Freddie Mac believes that incorporating energy efficiency data collection fields into the Uniform Residential Appraisal Report would also enable ongoing tracking, trending and analysis of high efficiency homes, which would be used for ongoing product design efforts, for assessing the risks and performance of loans on properties with energy efficiency features, and to design appropriate loan purchase metrics in subsequent years of Freddie Mac's Plan. The collected information, in aggregate, will also be used to inform the market about the value and benefits of energy efficiency as appropriate.

Changing uniform mortgage forms is a big undertaking that requires a significant level of coordination. Freddie Mac plans to work with representatives from many areas within the industry including, but not limited to, appraisal organizations, lender trade organizations, real estate professional and trade organizations, energy efficiency advocates, home builder organizations, mortgage data collection companies or organizations and energy rating agencies. We plan to structure and coordinate ongoing stakeholder project meetings governed under a formal charter and governance structure. The charter will provide guidance to the stakeholder group on how decisions will be reached, frequency of meetings, stakeholder responsibilities, establishment of relationships and define the rules of engagement for the working group.

Furthermore, designing appropriate standard valuation guidance and interim valuation collection guidance on energy efficient home improvement features will provide underwriting confidence to lenders. It will also address the need for providing more standard valuation guidance on energy efficient properties by building on the Appraisal Institute's work and capturing property-level data while we work to redesign the Uniform Residential Appraisal Report which we deem to be a more permanent and more impactful solution. We believe that carrying out this activity will have a significant impact on this market because it will remove many of the pressing barriers related to appraisal and property valuation of properties with energy efficiency improvements and provide the foundation for future growth of this market.

This task will be difficult given the varied costs, value and benefits of each distinct energy efficiency feature and the need to reach alignment amongst multiple key stakeholders. However, this effort represents a significant attempt to lay the foundation for future impact. Given its scope and potentially widespread operational impacts, it will require a significant level of effort by Freddie Mac and its lender partners. Freddie Mac is well-positioned to lead these efforts given our data analytic experience, collateral valuation expertise, our role in the Uniform Mortgage Data Program (UMDP) and our ability to leverage and manage vast amounts of data.

**OBJECTIVE C: FACILITATE FINANCING OF ENERGY EFFICIENCY IMPROVEMENTS AND ENERGY EFFICIENT HOMES**

Evaluation Area	Year	Incomes Targeted	Extra Credit
<b>Loan Product</b>	<b>1, 2 and 3</b>	<b>LI and MI</b>	<b>Not applicable</b>

During the first year, Freddie Mac plans to design improvements to our underwriting guidelines, based on market participants’ recommendations, and then test them through pilots or issue updates through a Guide bulletin. Based on market feedback, we will initially focus on product features that are easy to adopt, provide economic incentives for lenders and appraisers and reduce paperwork through automation. Our Energy Efficiency Task Force also provided feedback that niche energy efficiency mortgage products, although helpful, may not be the best solution. Therefore, we will focus on requirements and guidelines that can be used in combination with other mortgage products. In addition, several parties cautioned us that any products or flexibilities we design would have to be competitive with existing financing mechanisms, such as PACE loans, unsecured financing and other financing options currently being used outside the first lien space, due to ease of process and speed.

One of the key challenges in this market is the limited data about how energy efficiency is capitalized into appraisals and sales prices. While we will address this challenge under Objective A, a key focus in Year 1 under this objective will be to provide preliminary collateral valuation guidelines to be used by lenders on transactions that involve the financing of energy efficiency improvements or energy-efficient homes while we design more comprehensive collateral valuation requirements under Objective B. We also plan to conduct lender training by leveraging our existing outreach capabilities and dedicated customer education teams to increase lender awareness about product features and flexibilities in support of this market and, specifically, about collateral valuation guidelines.

To identify product characteristics that have worked well and to obtain loan level data that can be used for product development, Freddie Mac will also focus on researching existing products and financing mechanisms already offered in the market. This will help us determine which features to incorporate in our product design efforts. To get this information, we will purchase loans used to finance energy efficiency retrofits or to buy energy-efficient homes, under targeted pilot programs or through at least one bulk portfolio sale transaction, so we can perform data and loan analysis on these loans. This approach will provide liquidity to lenders and financing institutions that are already supporting the market so they can, in turn, originate more loans while we acquire valuable information to develop product flexibilities to meet the needs of the market.

During the second year of the Plan term, we intend to leverage our research findings from Objective A, any results from pilots conducted under this objective and conclusions from the loan analysis from loan purchases to develop comprehensive product features and underwriting flexibilities to finance energy efficient homes or energy efficiency improvements. We intend to communicate any updated product features and flexibilities through a Freddie Mac Seller/Servicers Guide Bulletin update or test them through at least one pilot. The activities under this objective and Objective A, described above, set the foundation for Freddie Mac to get loan risk information and market data that would allow us to fine-tune purchase targets in future years of our Plan.

In the third year of the Plan term Freddie Mac will continue to focus on refining our product through loan purchases. We believe that our tactics to promote our product features, underwriting flexibilities, and collateral valuation guidance to be developed during the first two years of the Plan will set the foundation for future loan purchases and encourage lender participation by providing them with product guidelines and underwriting confidence. In addition, we believe that our tactics to promote information about the benefits of energy efficiency and financing options available will generate market demand, which will further encourage lenders to participate.

## Baseline

Our existing product offerings are described at the beginning of this activity. We consider our offerings to be our starting point or baseline from a product development perspective. Additionally, Freddie Mac has not conducted targeted marketing efforts to drive adoption of energy efficiency product features in the past. As described in the beginning of this activity, Freddie Mac recognizes that many of our existing product features and underwriting flexibilities in support of energy efficiency are not well known and are not well aligned with how the market has evolved. Therefore, we believe that our existing flexibilities are not being widely used. We have been able to confirm this through outreach to lender partners. All product development activities described above will be new or build upon our existing offerings.

With respect to loan purchases which we will use to refine our products, our baseline is zero. Freddie Mac does not have purchase volume information from prior years because we have not tracked loans that use our existing energy efficiency offerings. Under Objective B we will develop a tracking mechanism which coupled with our loan purchases under this objective will help inform and set future baselines under this Plan. Additionally, given the limited market data available, we are not able to define market sales data to use as a basis for purchase forecasts. The Home Mortgage Disclosure Act (HMDA) data, publicly-available data typically used to track lending activity, does not include information to identify mortgages for energy efficiency improvements or energy-efficient homes. Under Objective A, we will acquire data to study the loan performance and house prices associated with mortgages for energy efficiency improvements or energy-efficient homes. This data could give us the ability to identify and better project market trends for mortgages to finance energy efficiency improvements.

We anticipate that our purchase activity is realistic given our plans to deploy a variety of tactics, including product development with a focus on underwriting confidence and valuation guidance, outreach, and providing technical training that would enable lenders to originate loans in this market confidently. Our intent to make loan purchases considers projections by the Joint Center for Housing Studies of Harvard University that annual increases in remodeling expenditures, a third of which are energy efficiency related, will soften somewhat moving forward<sup>116</sup>. Although we do not have market sales data, this activity represents a meaningful and realistic purchase commitment. We plan to review this target as we obtain new information from the research we plan to conduct under Objective A and loan purchases we plan to make in years 1 and 2.

## Challenges, Actions and Market Impacts

Challenge	Freddie Mac Action
<p><b>No standard collateral valuation approach</b></p> <ul style="list-style-type: none"> <li>▪ There is no consistent nor widely adopted approach to account for energy efficiency improvements' impact to property value.</li> <li>▪ There is no consistent nor widely adopted approach to capitalize the utility savings of an energy-efficient home in the appraisal value.</li> </ul> <p><b>Limited awareness about financing products</b></p> <ul style="list-style-type: none"> <li>▪ There are several financing options in the marketplace but consumer awareness about them, absent broad marketing, has remained low even in geographies where renewable energy is largely an area of focus.</li> </ul> <p><b>High upfront costs</b></p> <ul style="list-style-type: none"> <li>▪ The high upfront costs of energy efficiency improvements are usually not supported by an</li> </ul>	<p><b>Year 1 – 2018</b></p> <ol style="list-style-type: none"> <li>1) Issue a Guide bulletin update to lenders focusing on updated guidance on collateral valuation and use of energy audits.</li> <li>2) Purchase 25 to 75 loans to further inform product design:             <ol style="list-style-type: none"> <li>a. Design at least one pilot program to purchase loans used to finance energy efficiency improvements or the purchase of high efficiency homes. The pilot will focus on developing flexibilities to meet debt-to-income requirements, addressing high costs of energy audits, and flexible Loan-to-Value requirements. We will conduct this pilot in partnership with at least three lenders including but not limited to regional and community lenders. The pilot will test</li> </ol> </li> </ol>

appraisal. This makes some energy efficiency improvements difficult to finance through first lien mortgages due to LTV limitations.

- Energy audit costs are high.

#### **Limited production**

- Given this market's relatively small scale, Freddie Mac anticipates loan pools, held in portfolio, to be relatively small and therefore present pricing challenges for Freddie Mac as we define transaction parameters that are economically viable for Freddie Mac and economically attractive for lenders.

#### **No standardized products**

- Products in support of this market vary across geographic locations and/or from lender to lender. Existing energy efficiency loans are likely underwritten outside of Freddie Mac guidelines and may be outside our risk tolerance.

operational execution and market acceptance of product features we are considering to add to our Seller/Service Providers Guide in future years. We will use the pilot to also fine tune product features under the pilot offering. Additionally, we plan to use the pilot to obtain information that can later be used to design loan purchase metrics.

- b. Survey the market including lenders, state and local energy efficiency financial institutions and/or other financing organizations to identify seasoned loan pools that Freddie Mac could purchase, on a negotiated basis, through at least one bulk portfolio transaction.
- 3) Convene at least three working sessions with our Energy Efficiency Task Force to get their feedback on our product design efforts, discuss pilot results as we go, and obtain their feedback on lender training curriculum we will develop.
  - 4) Conduct comprehensive lender training and marketing campaigns to:
    - a. increase lender awareness about Freddie Mac's product flexibilities to finance energy efficiency retrofits and high-efficiency homes. We plan to update our training curriculums as we develop new and updated product flexibilities, and
    - b. use training sessions as a vehicle to obtain product related feedback to be incorporated into future product enhancements.

#### **Year 2 - 2019**

- 1) Establish a standard methodology or guidelines to assess compliance with the required 15 percent reduction of energy consumption or that the utility savings generated over the life of the improvement will exceed the cost of installation. We plan to incorporate this additional guidance into the Seller/Service Providers Guide update or the updated pilot described in item 2 below.
- 2) Issue a Seller/Service Providers Guide update to implement product features tested under the pilot offering from Year 1 or expand the pilot to at least 5 additional lenders. If we have not collected enough information to issue a Seller/Service Providers Guide update, Freddie Mac will also make updates to its pilot based on research findings from Objective A and purchase an additional 25 to 75 loans to

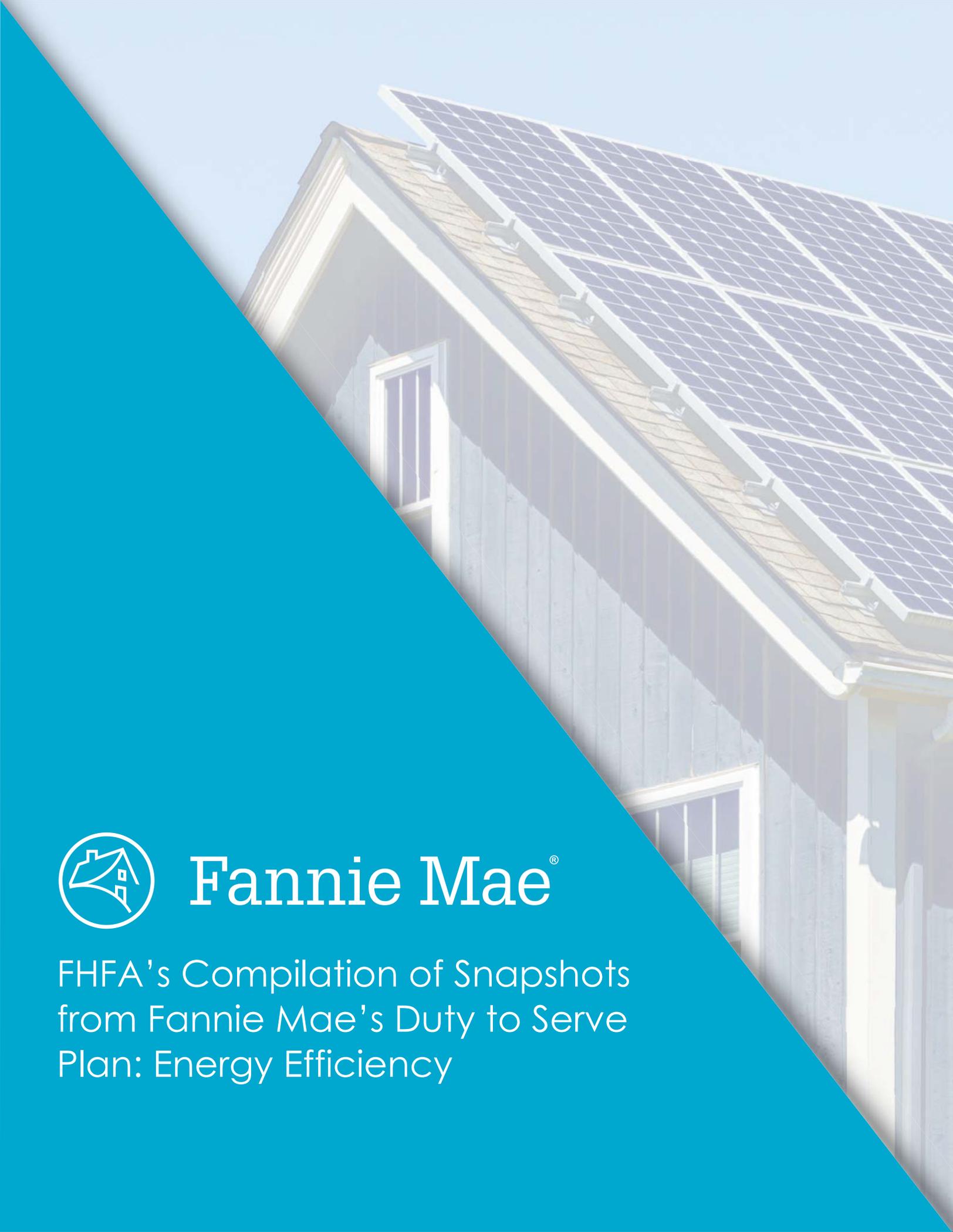
	<p>continue to inform product design.</p> <p>3) Promote newly designed Seller/Servicing Guide product flexibilities and drive attendance to lender trainings by participating in at least four industry events, convening at least one additional product-focused session of the Energy Efficiency Task Force, providing publications on Freddie Mac's News Center and blog, and sending emails to all Single-Family News subscribers.</p> <p><b>Year 3 – 2020</b></p> <p>1) Issue a Seller/Service Guide update to implement product features tested under the pilot offering from years 1 and 2 or expand the pilot to at least five additional lenders. If we have not collected enough information to issue a Seller/Service Guide update, Freddie Mac will make updates to its pilot based on prior year's pilot performance and purchase an additional 100 to 300 loans to continue to inform product design.</p> <p>2) Continue lender training efforts, building upon or continuing outreach started on Year 2, to help lenders understand Freddie Mac's product flexibilities and encourage adoption of them.</p>
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## Market Impact

Freddie Mac recognizes that we have opportunities to start enhancing our existing product features while we carry out our research under Objective A. We also see an opportunity to encourage implementation of our existing and revised product features and flexibilities by increasing lender awareness. Doing so would help the market by driving up lender adoption. Lender outreach will also allow Freddie Mac to obtain additional product-related feedback, to be captured during our training sessions that can be incorporated into future product design or pilots. Conducting limited pilots to test product features and obtain data ahead of any new offerings is an important step for product design especially because adoption or performance data of first lien products is limited since first lien products are currently not prevalent in this market. We expect that the feedback received during our outreach efforts and the information we obtain from our pilot results will augment the results of the research and development described in Objective A and provide useful information to design operationally feasible product flexibilities that can compete with existing products outside of the first lien space. This comprehensive strategy will provide Freddie Mac with a wide-ranging view to make decisions, within safety and soundness standards, about which underwriting flexibilities and product features have the greatest impact and should therefore be adopted in future Seller/Service Providers offerings. We will primarily focus our pilots on testing product flexibilities that address the need for more guidance about collateral valuation, challenges presented with high upfront costs related to energy efficiency improvements, and the lack of information about financing options available.

Through the loan purchases under this objective, Freddie Mac expects to provide gradual liquidity to market participants that are already active in this market. Because counterparties who would sell loans to Freddie Mac are already active or have been active in this market, we anticipate the liquidity we provide may spur additional energy efficiency loan originations. Additionally, through our ongoing outreach efforts, we intend to work with these market participants so they adopt the new and revised flexibilities we intend to design into their new originations. Therefore, we would expect incremental loan purchase activity resulting from this objective. Since most of the energy efficiency financing demand is being met through unsecured lending because of its transactional ease, first lien loan purchases in this market will be challenging. Based on our research into this market, we would still expect market penetration of first lien product flexibilities to be somewhat limited but, relative to the size of the market, meaningful. The data and information we plan to collect through loan purchases under this objective will assist Freddie Mac to perform analysis, inform product design and define loan purchase metrics in subsequent Plan periods or, if appropriate, in revisions of this Plan during the first three-year Plan period.

Freddie Mac will leverage its existing corporate training and education resources, website presence and advisory boards. We also plan to provide technical assistance through account management resources and customer support teams. Additionally, we have experience structuring pilots prior to rolling out new requirements broadly. Competing with unsecured financing, which is the most widely used option in this market, will be a challenging undertaking and require Freddie Mac to spend a significant level of effort in marketing and sourcing our offerings.



Fannie Mae<sup>®</sup>

FHFA's Compilation of Snapshots  
from Fannie Mae's Duty to Serve  
Plan: Energy Efficiency



G. Regulatory Activity: Finance improvements on multifamily properties: (a) which reduce energy or water consumption by tenant or property by at least 15 percent; and (b) where the savings generated over the improvement’s expected life will exceed its cost (FHFA Criteria) (12 C.F.R. § 1282.34 (d)(2)).

**1. Objective #1: Engage stakeholders and conduct research to increase awareness and understanding of energy or water efficiency improvements and financing needs (Analyze, Test and Learn).**

### Meeting the Challenges

The multifamily energy and water efficiency market faces a number of challenges, including:

- It is complex, with many participants, products, evolving technologies, standards, and regulations.
- Energy and water improvements (collectively Improvements) can require significant upfront capital and financing options are varied and can be costly.
- Mortgage products that finance or refinance Improvements have terms that impact eligibility, do not meet the FHFA Criteria, and are not well understood by lenders.
- There is a lack of information about the needs and opportunities for Improvements and factors driving outcome.

To address these challenges, Fannie Mae will:

- Engage stakeholders, including utilities, through roundtable discussions to assess the evolving market and assist market participants in better serving their customers.
- Engage lenders for education, to get input into product changes to meet the FHFA Criteria, to simplify loan requirements, increase eligibility, and increase delivery of loans.
- Invest in research, data collection, and analysis to improve the market and develop products that will incent stakeholders to engage and assist us to underwrite Improvements effectively and to identify methods to measure savings on Improvements that meet the FHFA Criteria.
- Publish information gathered and analyzed to promote liquidity by encouraging capital sources to venture into new lending and investing areas related to Improvements.

### SMART Factors

Fannie Mae will undertake the following measurable Actions in the years indicated.

Year	Actions
2018	<ul style="list-style-type: none"> <li>• Participate in two key industry conferences and host one energy advisory council meeting with cross-functional industry representation to gain a better understanding of the current market barriers and challenges.</li> <li>• Develop and implement a research plan to clarify the market’s understanding of the evolving technical landscape.</li> </ul>



Year	Actions
	<ul style="list-style-type: none"> <li>Establish and participate in an outreach program to increase multifamily owners'/operators' awareness of and access to energy and water efficiency savings and financing programs.</li> <li>Conduct a review of Fannie Mae's current product offerings to find ways to potentially overlap with the existing incentives provided by utility and State energy offices.</li> <li>Approve one product enhancement that could result in loan purchases meeting the FHFA Criteria.</li> <li>Establish and test a methodology to confirm actual energy savings on improvements.</li> </ul>
<b>2019</b>	<ul style="list-style-type: none"> <li>Participate in two key industry conferences and host one energy advisory council meeting with cross-functional industry representation to continue to increase Fannie Mae's understanding of the market and to ensure our work is correctly targeted over the previous year.</li> <li>Continue to expand the outreach by hosting roundtables and participating in industry conferences to increase awareness and access to energy and water efficiency savings and programs that help finance Improvements.</li> <li>Continue to test and confirm actual energy savings on loans purchased through Fannie Mae's green finance programs.</li> <li>Analyze lessons learned and make adjustments to the plan if necessary.</li> <li>Draft work-plan for a white paper to educate key stakeholders on best practices in energy efficiency financing and affordable housing preservation, with the goal to publish during 2020.</li> </ul>
<b>2020</b>	<ul style="list-style-type: none"> <li>Participate in two key industry conferences and host one energy advisory council meeting with cross-functional industry representation to build upon knowledge and information gained over the previous year.</li> <li>Continue to participate in the outreach program developed in 2018 to increase multifamily owners'/operators' awareness of and access to energy and water efficiency savings and financing programs and to stay abreast of current industry trends.</li> <li>Host a 400+ person conference to bring together lending, housing energy audit, and green building stakeholders for discussions and to identify key lessons from last two years.</li> <li>Continue to test and confirm actual energy savings on loans purchased through Fannie Mae's green finance programs.</li> <li>Publish and distribute a white paper to key stakeholders in the industry through the web, outreach activities, industry conferences, and other potential means of distribution.</li> <li>Plan for the 2021 – 2023 Duty to Serve Plan.</li> </ul>

Fannie Mae has significant experience in outreach, market engagement, data collection and analysis, consumer research, and product development. Accordingly, we believe this Objective is realistic and can be achieved within the time periods described. The ultimate opportunity available in this market is to finance an increased number of Improvements meeting the FHFA Criteria. Any product enhancements that create changes in credit parameters and product guidelines will be supported by thorough economic, risk, and operational analysis, will be subject to Fannie Mae's governance and approval processes, and will only be made consistent with safety and soundness concerns.

Criteria	2018	2019	2020
<b>Evaluation Factor:</b>	Outreach	Loan Product	Loan Product



<b>Income Levels:</b>	Very Low-, Low-, and Moderate-Income Levels for all Years
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**2. Objective #2: Facilitate the establishment and dissemination of energy or water efficiency improvements finance industry standards that will facilitate increased liquidity to the multifamily energy efficiency improvements finance market (Partner and Innovate).**

<b>Meeting the Challenges</b>
<p>Additional challenges facing the residential energy and water efficiency market include:</p> <ul style="list-style-type: none"> <li>• A lack of standards and methodologies for communicating the presence of, types, and value of energy and water efficiency upgrades in residential properties.</li> <li>• An overall lack of liquidity for mortgages that support financing for Improvements meeting the FHFA Criteria.</li> </ul> <p>To address these challenges, Fannie Mae will:</p> <ul style="list-style-type: none"> <li>• Convene the energy efficiency finance industry to identify and adopt at least one standard for underwriting energy efficiency loans.</li> <li>• Educate the industry on the new standard(s) through engaging with key stakeholders in energy efficiency finance and by publishing the new standard(s).</li> <li>• Incorporate the standards into Fannie Mae’s energy efficiency products and documentation.</li> </ul>

**SMART Factors**

Fannie Mae will undertake the following measurable Actions in the years indicated.

<b>Year</b>	<b>Actions</b>
<b>2018</b>	<ul style="list-style-type: none"> <li>• Engage the industry to identify opportunities and challenges in setting standards for underwriting or measuring utility savings from Improvements by:               <ul style="list-style-type: none"> <li>○ Participating in one industry working group that addresses the need for standardization.</li> <li>○ Engaging with five relevant trade organizations, valuation services, rating groups, bond standards groups or appraisal companies to understand similarities and gaps in measurement in order to address standardization issues.</li> <li>○ Identify at least two potential industry standards that would facilitate energy efficiency financing.</li> </ul> </li> </ul>
<b>2019</b>	<ul style="list-style-type: none"> <li>• Confirm industry adoption of at least one new standard related to underwriting, or measuring utility savings from Improvements by:               <ul style="list-style-type: none"> <li>○ Developing and implementing a plan to encourage the industry to adopt standards.</li> <li>○ Engaging with the Energy Advisory Committee to validate the Plan to reach the industry.</li> <li>○ Publicizing the adopted standard and executing the Plan to reach the industry.</li> <li>○ Updating Fannie Mae documentation to incorporate the new standard(s).</li> </ul> </li> </ul>



Year	Actions
2020	<ul style="list-style-type: none"> <li>• Facilitate training across the industry on the new standard(s) by:               <ul style="list-style-type: none"> <li>○ Advocating on behalf of the new standard(s) at one industry conference.</li> <li>○ Develop a training program on the new standard(s) and training at least 10 key industry stakeholders including lenders, appraisers, rating groups, and related trade organizations.</li> </ul> </li> </ul>

The ultimate opportunity available in this market is to finance increased numbers of Improvements meeting the FHFA Criteria. Fannie Mae plays an active role within the industry to set standards in many areas, including collateral value, data, and property valuation. Based on this experience, coupled with the available resources, Fannie Mae has determined that this Objective is realistic and may be achieved within the time periods described. Fannie Mae has the systems, operations, and resource tools needed to facilitate efficient loan delivery in a safe and sound manner.

Criteria	2018	2019	2020
<b>Evaluation Factor:</b>	Outreach	Outreach	Outreach
<b>Income Levels:</b>	Very Low-, Low-, and Moderate-Income Levels for all Years		

### ***3. Objective #3: Purchase multifamily loans that finance energy or water efficiency improvements that meet the FHFA Criteria (Do What We Do Best).***

#### **Meeting the Challenges**

Additional challenges facing the residential energy and water efficiency market include:

- An overall lack of liquidity for mortgages that support financing for Improvements meeting the FHFA Criteria.

To address these challenges, Fannie Mae will:

- Purchase multifamily energy efficiency loans for Improvements that meet the FHFA Criteria.

#### **SMART Factors**

Fannie Mae will undertake the following measurable Actions in the years indicated.

Year	Actions
2018	<ul style="list-style-type: none"> <li>• Purchase 622 loans that meet the FHFA Criteria, representing an approximate 10 percent increase over the Baseline.               <ul style="list-style-type: none"> <li>○ <b>Baseline:</b> Fannie Mae has two existing green multifamily products, “Green Rewards” and “Green Preservation Plus,” which have energy savings requirements similar to the FHFA Criteria. Based on our experience with these loan products, we believe it is appropriate to use our purchase of Green Rewards and Green Preservation Plus to determine the Baseline. However, both of these products are relatively new and, unlike other products like Section 8 and/or LIHTC debt that Fannie Mae has been purchasing for well over 10 years, we do not have as much experience on which to base future loan purchase goals. As of now, the green loan products are not subject to the lending cap of \$35</li> </ul> </li> </ul>



Year	Actions
	<p>billion announced by FHFA on Fannie Mae's multifamily acquisitions. The loan purchase goals are based on the cap exemption remaining in place. Should the cap exemption be reduced or deleted, the loan purchase goals could change materially.</p> <p>An analysis of the energy cost savings and energy efficiency improvement costs associated with Fannie Mae's current book of Green Rewards and Green Preservation Plus loans demonstrates that roughly 88.9 percent of the portfolio met or exceeded the FHFA cost savings and cost efficiency requirements. However, because the average of three years is not representative given the low number of loans purchased in the early years, as a Baseline Fannie Mae will use the annualized 6/30/17 loan purchases adjusted by 88.9 percent to reflect those loans that meet the cost efficiency requirements, which is 565 loans.<sup>1</sup></p> <ul style="list-style-type: none"> <li>• Confirm loan purchase goals for 2019.</li> </ul>
2019	<ul style="list-style-type: none"> <li>• Purchase 684 loans that meet the FHFA Criteria, representing approximately a 21 percent increase over the Baseline.</li> <li>• Confirm loan purchase goals for 2020.</li> </ul>
2020	<ul style="list-style-type: none"> <li>• Purchase 753 loans that meet the FHFA Criteria, representing approximately a 33 percent increase over the Baseline.</li> <li>• Plan loan purchase goals for the 2021 – 2023 Duty to Serve Plan.</li> </ul>

The ultimate opportunity available in this market is to finance increased numbers of loans that meet the FHFA Criteria. Fannie Mae has significant experience purchasing loans of various types including “Green” products that finance energy efficiency improvements. Based on this experience, coupled with the available resources, Fannie Mae has the systems, operations and resource tools needed to facilitate efficient loan delivery in a safe and sound manner.

Criteria	2018	2019	2020
<b>Evaluation Factor:</b>	Loan Purchase	Loan Purchase	Loan Purchase
<b>Income Levels:</b>	Very Low-, Low-, and Moderate-Income Levels for all Years		

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)).

**1. Objective #1: Increase liquidity for energy or water efficiency improvements through outreach, research, and developing solutions (Analyze, Partner and Innovate, Test and Learn).**

### Meeting the Challenges

The residential energy and water efficiency improvements market faces a number of challenges, including:

<sup>1</sup> Fannie Mae purchased a total of 318 Green Rewards and Green Preservation Plus loans through 6/30/2017, annualized as 636 loans. When adjusted for those loans that met the cost efficiency requirement (88.9 percent of total), the Baseline is 565 loans.



## Meeting the Challenges

- Complexity. There are many participants and the products and technologies, standards, and regulations continually evolve.
- Lack of information. The needs and opportunities and factors driving Improvements and outcomes are often not well understood by those serving homeowners.
- Inexperience and prioritization. Many homeowners do not know how to cost effectively reduce their household energy and water consumption, or how to access assistance to make Improvements. Many simply do not prioritize Improvements for their home.
- Financing challenges. Improvements may require a large amount of upfront capital. Financing options and terms for Improvements are varied and may be costly. Mortgage products, including Fannie Mae's, that allow for Improvements to be financed at purchase or refinance have terms that: impact eligibility; are not required to meet the FHFA Criteria; are not well known or understood by lenders, borrowers, and others; and may not be the appropriate option for financing in many situations.

To address these challenges, Fannie Mae will:

- Develop and execute a comprehensive outreach strategy to help fill knowledge gaps, educate lenders and others about our products and the opportunities, bring the industry together to understand the market and opportunities, and help homeowners, including:
  - Contribute to the discussion, analysis, and resolution of the challenges for affordable financing of Improvements and assist market participants in better serving their customers by engaging a cross-functional representation of industry stakeholders through advisory council meetings we host, conferences we attend, and other meetings we facilitate.
  - Engage lenders (1) to educate them further about our products and help them in meeting loan delivery requirements; (2) to seek key input into product changes to meet the FHFA Criteria; and (3) to identify opportunities to simplify loan requirements, expand eligibility, and increase delivery of Fannie Mae's mortgage loans that finance Improvements such as our existing HomeStyle<sup>®</sup> Energy<sup>2</sup> and HomeStyle Renovation<sup>3</sup> products.
  - Work with housing counselors, community groups, Fannie Mae customers, and others in the industry to promote consumer access to products, resources, education, and capital financing, including third-party grants.
  - Develop and promote resources to help homeowners reduce monthly housing costs by achieving energy and/or water savings.
- Develop and execute a robust research and analysis strategy in order to also fill knowledge gaps and bring discipline to housing finance for Improvements, including:
  - Invest in research, data collection, and analysis in order to: (1) improve the market and Fannie Mae's understanding of consumer sentiment, needs and opportunities, future trends, business models, and factors driving Improvements and outcomes; (2) assist us to underwrite Improvements effectively and identify methodologies to measure energy and/or water savings that meet the FHFA Criteria; and (3) promote industry awareness and inform future research.

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2 Fannie Mae's HomeStyle Energy mortgage loan helps lenders offer affordable financing to borrowers seeking to improve the energy and water efficiency of their homes. HomeStyle Energy is open to all Fannie Mae lenders; no special approval is needed. More information can be found at <https://www.fanniemae.com/singlefamily/homestyle-energy> as well as in Fannie Mae's *Selling Guide*, [B5-3.3-01: HomeStyle Energy for Energy Improvements on Existing Properties](#).

3 Fannie Mae's HomeStyle Renovation mortgage loan permits borrowers to include financing totaling up to 50 percent of the as-completed appraised value of the property with a first mortgage, rather than a second mortgage, home equity line of credit, or other, more costly financing method. More information can be found at [https://www.fanniemae.com/content/fact\\_sheet/homestyle-renovation-overview.pdf](https://www.fanniemae.com/content/fact_sheet/homestyle-renovation-overview.pdf) as well as in Fannie Mae's *Selling Guide*, [B5-3.2-01: HomeStyle Renovation Mortgages](#).



## Meeting the Challenges

- Publish the information gathered and analyzed to bring clarity to the marketplace, which helps create liquidity because it encourages capital sources to venture into lending and investing in these market segments where they may have not been before.
- Employ a test and learn approach to market, test the feasibility of enhancements to Fannie Mae loan products that will best serve the needs of the target markets in financing Improvements and make appropriate policy updates.

## SMART Factors

Fannie Mae will undertake the following measurable Actions in the years indicated.

Year	Actions
2018	<ul style="list-style-type: none"> <li>● Engage three industry participants that finance Improvements such as State energy financing agencies, utilities, and solar energy financing companies, to identify potential innovative financing opportunities meeting the FHFA Criteria such as developing plans to partner financing, subsidy, or assistance programs with new affordable homeownership opportunities.</li> <li>● Establish a consumer outreach platform, to increase awareness and access to programs that help finance Improvements that includes homeownership education that can be delivered by non-profits or accessed online; that includes a catalog of or links to programs to finance Improvements; that provides access to online tools and other resources such as the Department of Energy's consumer materials; and that facilitates a regular social media schedule such as leveraging Twitter. Target engagement with 10 stakeholders who interact with consumers, including utilities, lenders, HFA, State and local administrators and/or non-profit groups. Ten relationships will be a significant commitment of time and will provide substantial learnings on how to expand engagement in following years.</li> <li>● Participate in two key industry conferences and host one in-person energy advisory council meeting with cross-functional industry representation (e.g., utility companies, product manufacturers, lenders, realtors, non-profits, government agencies, and consultants) for the purpose of developing and building relationships and helping to identify and evaluate strategies and partnerships that will help Fannie Mae execute our Plan.</li> <li>● Establish business-to-business marketing and outreach that includes providing educational materials and lender webinars or presentations on financing Improvements with Fannie Mae products for the purpose of helping the market to understand availability, terms and conditions, and opportunities for such loans so that lenders will be able and willing to use and originate them. Target engagement of fifteen lenders and five other stakeholders, including HFA, non-profit organizations, and realtor associations. Fannie Mae has chosen to target our five largest lenders of our mortgage loan deliveries in 2016 as well as 10 other lenders that represent geographical diversity. Fannie Mae will also work with HFA in two of the top five most populated States, two of the largest non-profit organizations that counsel homeowners, and the nation's largest association of realtors. Twenty relationships will be a significant commitment of time and will provide substantial learnings on how to expand engagement in following years.</li> <li>● Develop and execute a research plan for the purpose of: (1) improving the market and Fannie Mae's understanding of consumer sentiment, needs and opportunities, future trends, business models, and factors driving Improvements and outcomes; (2) assisting us to underwrite Improvements effectively and identify methodologies to meet the FHFA Criteria; and (3) promoting industry awareness and informing future research. Fannie Mae will: <ul style="list-style-type: none"> <li>○ Investigate the opportunity to acquire data related to home energy ratings, solar panel installation, and/or utility usage on Fannie Mae properties and will analyze such data, as well as secondary research, if able to be secured.</li> </ul> </li> </ul>



Year	Actions
	<ul style="list-style-type: none"> <li>○ Study consumer behavior or sentiment by executing, directly or through a partnership, one primary consumer research survey and/or focus group or other primary research project.</li> <li>○ Analyze our portfolio of loans where borrowers have financed energy or home renovation projects to understand geographic and demographic characteristics and performance.</li> <li>○ Publish findings related to one of these research outcomes.</li> <li>● Create variance terms and/or policy updates that enable Fannie Mae to partner with lenders to test and learn one or more market, economic or operational impacts related to financing Improvements, leveraging products such as HomeStyle Energy or HomeStyle Renovation for the purpose of increasing mortgage loan purchases. Fannie Mae will determine test parameters based on stakeholder input, conduct related economic, and operational impact analyses and issue one lender variance. One or more participating lenders will be chosen based on level of interest and capacity, potential volume, and market focus. The variance outcome will be evaluated in 2019 and success will be based on actual volume delivery relative to projected delivery as well as positive lender feedback on the changes implemented. If feasible, and depending on research, learnings, and analysis, publish one policy update.</li> </ul>
2019	<p>Based on lessons learned in 2018 and to further increase knowledge through market outreach, research, analysis, and tests:</p> <ul style="list-style-type: none"> <li>● Enhance and continue to execute the business-to-business marketing and outreach by identifying new market entrants and incorporating impact and needs into outreach efforts and updating product materials and webinars or presentations. Target engagement with an additional seven lenders and three additional stakeholders (i.e., lenders and stakeholders not approached in 2018). The additional lenders and stakeholders will be selected based on evaluation of 2018 activities and responses as well as an assessment of geographical and other needs. Fannie Mae will also work with additional HFA in two more States and work with the non-profit organizations engaged in 2018 to determine additional organizations we should target. Ten additional relationships will be a significant commitment of time and will provide substantial learnings on how to expand engagement in following years.</li> <li>● Expand industry leadership efforts by participating in two key industry conferences and seek a leadership role in speaking at one other event for purposes of informing the industry of research findings, product enhancements, and/or market insights. Host one in-person energy advisory council meeting, incorporating feedback from 2018 and including two new participants in order to improve engagement and outcomes.</li> <li>● Assess findings from Fannie Mae research to date and build upon the outcome of 2018 as well as new trends to acquire additional data and industry research, study consumer behavior or sentiment by executing, directly or through a partnership one new consumer survey and/or focus group that contributes to a trend analysis, add new acquisitions to the loan analysis, and publish findings related to one of these research outcomes.</li> <li>● Evaluate the outcomes of variance(s) executed in 2018 and introduce one new variance with terms for one additional policy/product update, or review credit and/or collateral policy identifying opportunities to enhance policy/product parameters. One variance will focus on opportunities to finance Improvements in high-needs rural areas. If feasible and depending on research, learnings, and analysis, publish one policy update.</li> <li>● Update the consumer outreach strategy and execute necessary changes to incorporate an analysis of the appropriateness of social media types and frequency, update resources and expand consumer education to two additional non-profit networks or counseling agencies. Fannie Mae plans to focus on networks or organizations that can reach a number of affiliated or similar non-profits and as such, has determined that two such entities is appropriate.</li> </ul>



Year	Actions
	<ul style="list-style-type: none"> <li>Evaluate potential opportunities from engagement in 2018 with State energy financing agencies, utilities, or solar energy financing companies, to determine Fannie Mae's role, if any, in collaborating with related financing, subsidy, or assistance programs.</li> </ul>
<b>2020</b>	<p>Based on lessons learned in 2018 and 2019 and to further increase knowledge through market outreach, research, analysis, and tests:</p> <ul style="list-style-type: none"> <li>Enhance and continue to execute the business-to-business marketing and outreach campaign by identifying new market entrants, incorporating impact and needs into outreach efforts, and updating product materials and webinars or presentations. Target engagement with an additional seven lenders and three other stakeholders (i.e., lenders and stakeholders not approached in 2018 or 2019), representing a significant commitment of time. The additional lenders and stakeholders will be selected based on evaluation of 2019 activities and responses as well as an assessment of geographical and other needs. Fannie Mae will also work with additional HFA in two more States and work with the non-profit organizations engaged in 2018 and 2019 to determine additional organizations which we should target. Ten additional relationships will be a significant commitment of time and will provide substantial learnings on how to expand engagement in following years.</li> <li>Continue to expand industry leadership efforts by participating in two key industry conferences and speaking at two other events for purposes of informing the industry of research findings, product enhancements, and/or market insights. Host one energy advisory council meeting with cross-functional industry representation, incorporating feedback from 2018 and 2019 and including two new participants in order to improve engagement and outcomes.</li> <li>Assess findings from Fannie Mae research to date and build upon the outcomes of 2018 and 2019 as well as new trends to acquire additional data and industry research, conduct one new consumer survey and/or focus group that contributes to a trend analysis, add new acquisitions to the loan analysis, and publish findings publicly related to one set of these research outcomes.</li> <li>Evaluate the outcomes of variance(s) executed in 2018 and 2019 and introduce one new variance with terms for one additional policy/product update, or review credit and/or collateral policy identifying opportunities to enhance policy/product parameters. If feasible, and depending on research, learnings, and analysis, publish publicly one policy update.</li> </ul>

Fannie Mae has significant experience in outreach, market engagement, data collection and analysis, consumer research, and product development. Accordingly, we believe this Objective is realistic and can be achieved within the time periods described. The ultimate opportunity available in this market is to finance an increased number of Improvements meeting the FHFA Criteria. We also will look for focused opportunities in high-needs rural regions as the need in these regions for Improvements is significant and preserving affordable housing is important. Any variances that create changes in credit parameters and product guidelines will be supported by thorough economic, risk, and operational analysis, will be subject to Fannie Mae's governance and approval processes, and will only be made consistent with safety and soundness concerns.

Criteria	2018	2019	2020
<b>Evaluation Factor:</b>	Outreach	Loan Product	Loan Product
<b>Income Levels:</b>	Very Low-, Low-, and Moderate-Income Levels for all Years		



**2. 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).**

**Meeting the Challenges**

Additional challenges facing the residential energy and water efficiency market include:

- Standards. There is a lack of standards and adoption of methodologies for communicating the presence and types of Improvements in residential properties, for reflecting their added value, and for measuring whether the FHFA Criteria have been met.
- Liquidity. There is an overall lack of liquidity for mortgages that support financing for the FHFA Criteria.

To address these challenges, Fannie Mae will:

- Take a leadership role in working with the industry to establish standards in appraisals, real estate listings, and delivery data, and in establishing how the FHFA Criteria will be met so that homebuyers, realtors, appraisers, and lenders will have a uniform understanding of Improvements, which will facilitate a secondary market.
- Provide direct liquidity to the market by purchasing mortgage loans that finance Improvements meeting the FHFA Criteria.

**SMART Factors**

Fannie Mae will undertake the following measurable Actions in the years indicated.

Year	Actions
2018	<ul style="list-style-type: none"> <li>• Evaluate how to establish loan product standards, guidelines, and tracking to demonstrate that the FHFA Criteria have been met by engaging four administrators of major energy rating and certification programs, by researching 10 energy and water saving calculation methodologies and lists used by State, local, tribal, and utility programs, and by developing a plan to operationalize tracking methodologies, depending on the outcome of the evaluation. Identify a single master list to serve as a benchmark. Currently Fannie Mae has standards for two energy rating organizations and plans to engage the two largest single family certification programs in evaluating how to leverage credible projections. Fannie Mae has chosen to research 10 programs in order to represent a cross-section of the largest utility providers and geographic diversity.</li> <li>• Hold two meetings with interested parties (e.g., the National Realtors Association, Real Estate Standards Organization, the U.S. Department of Energy) to evaluate gaps in appraisal, multiple listing service (MLS), and investor delivery data that is needed by Fannie Mae and the industry in order to identify property-level information about energy and water efficiency features and assess the value impact. Evaluate opportunities to collaborate on a standardization effort and sign appropriate agreements if Fannie Mae determines we can do so after conducting due diligence.</li> <li>• Outline a plan for an education and training program for realtors and loan officers so that they and their customers will be able to understand the impact of Improvements on real estate forms.</li> <li>• Purchase between 50 and 100 mortgage loans that meet the FHFA Criteria.<sup>4</sup> Fannie Mae established a proxy Baseline, described below, for 2019 and beyond because operational processes will not be in</li> </ul>

<sup>4</sup> In Fannie Mae's proposed Plan dated 5/8/17, lower purchase goals in Year 2 (50 to 100) and Year 3 (100 to 200) were disclosed and no Baseline was established given that Fannie Mae has not required the FHFA Criteria to be met and our acquisitions have not been



Year	Actions
	<p>place during the full year of 2018 to be able to track loans that meet the FHFA Criteria. The targets set for 2018 are based on outreach efforts planned to test methodologies that will enable us to assess them. As such, the 2018 targets are below the proxy Baseline while Fannie Mae establishes tracking methods.</p> <ul style="list-style-type: none"> <li>○ <b>Baseline:</b> Fannie Mae currently does not require that the FHFA Criteria be met with our HomeStyle Energy mortgage, nor do we require lenders to account for and report when mortgage loans are used to finance Improvements. Our acquisitions have not been tracked for this purpose. To establish a Baseline and to project loan purchase goals for 2020 we have used the following data and assumptions: <ul style="list-style-type: none"> <li>▪ HomeStyle Energy – This product was introduced in March 2016 and prior to this Fannie Mae had another energy efficiency mortgage product. From 2010 through 2016, a total of six loans were delivered to Fannie Mae in the target market range, with three of those in 2016.</li> <li>▪ HomeStyle Renovation – Because this product is used to finance home renovations Fannie Mae assumes that some homeowners included Improvements in their projects. It is most likely that Improvements will be included in a kitchen remodel, bath remodel, or system upgrade (e.g., heating and cooling). According to a study by the Joint Center for Housing Studies (JCHS)<sup>5</sup>, respondents reported that 17.2 percent of renovations included kitchen or bath updates or additions and 15.7 were for system upgrades. Therefore, we assumed that approximately 33 percent of HomeStyle Renovation loans had the potential to include an Improvement. The JCHS study also cited that 84 percent of respondents indicated they installed energy efficiency improvements in their projects. As such, we assumed 27.6 percent<sup>6</sup> of HomeStyle Renovation mortgages could have included an Improvement that meets the FHFA Criteria. As we have chosen to use 2016 as a benchmark where HomeStyle Renovation deliveries were 1,740, this results in 480 loans meeting our assumption.</li> <li>▪ Totalling HomeStyle Energy and HomeStyle Renovation loans for 2016, the Baseline we established is 483 mortgage loans.</li> </ul> </li> </ul>
2019	<p>Based on outcomes in 2018 and to further accelerate industry standardization efforts and liquidity for Improvements, the following will be undertaken:</p> <ul style="list-style-type: none"> <li>• Depending upon the outcome of the evaluation of loan product standards and guidelines, and if a plan is completed in 2018, update Fannie Mae’s delivery data requirements to incorporate the identification of Improvements, or continue evaluation and development of standards and guidelines.</li> <li>• Work with the Uniform Data Committee to gain consensus for updating the appraisal form to include identified fields for property-level information about energy and water efficiency features. If feasible based on the outcome of joint Uniform Data Committee efforts, update Fannie Mae’s appraisal policy to incorporate the updated appraisal.</li> <li>• Continue to work with the industry to drive efforts for standardization on the MLS. Assess progress and required actions to address challenges.</li> <li>• Launch the lender and realtor training program.</li> <li>• Purchase between 500 and 550 mortgage loans that meet the FHFA Criteria</li> </ul>

tracked for this purpose. Since the original analysis was completed, Fannie Mae determined that other mortgage products besides HomeStyle Energy may include Improvements and we were able to obtain external data to better estimate a proxy Baseline and future loan purchases.

<sup>5</sup> *Improving America’s Housing 2015: Emerging Trends in the Remodeling Market*, Joint Center for Housing Studies of Harvard University.

<sup>6</sup> (32.9 percent x 84 percent)



Year	Actions
2020	<p>Based on outcomes in 2018 and 2019 and to further accelerate and sustain industry standardization efforts and liquidity for Improvements:</p> <ul style="list-style-type: none"> <li>• If not fully established in 2019, update Fannie Mae’s delivery data requirements to incorporate the identification of Improvements.</li> <li>• Continue to work with the Uniform Data Committee on updating the appraisal form to include identified fields for property-level information about energy and water efficiency features, if the industry has not completed efforts in prior years. If feasible based on the outcome of joint Uniform Data Committee efforts, update Fannie Mae’s appraisal policy to incorporate the updated appraisal if not completed in prior years.</li> <li>• Continue to lead industry meetings to evaluate the status of implementation of appraisal, MLS, and delivery data standards and identify additional changes. Assess progress and required actions to address challenges.</li> <li>• Purchase between 550 and 650 mortgage loans that meet the FHFA Criteria. This represents a 14 to 35 percent increase over the Baseline<sup>7</sup>.</li> </ul>

The ultimate opportunity available in this market is to finance increased numbers of Improvements meeting the FHFA Criteria for the target markets and having standards is a critical part of ensuring sources of capital will participate. Fannie Mae plays an active role within the industry to set standards in many areas, including collateral value, data, and property valuation. Based on this experience, coupled with the available resources, Fannie Mae has determined that this Objective is realistic and may be achieved within the time periods described in a safe and sound manner. In addition, underwriting standards and credit guidelines that are simplified and consistent with safety and soundness will continue to be applied to improve acquisition of this product.

Criteria	2018	2019	2020
<b>Evaluation Factor:</b>	Loan Product	Loan Product	Loan Purchase
<b>Income Levels:</b>	Very Low-, Low-, and Moderate-Income Levels for all Years		

<sup>7</sup> Of this range, we will target 25 loans to be in high-needs rural regions.



**DISCLAIMER**

Implementation of the activities and objectives in Fannie Mae's and Freddie Mac's Duty to Serve Underserved Markets Plans may be subject to change based on factors including FHFA review for compliance with the Charter Acts, specific FHFA approval requirements and safety and soundness standards, and market or economic conditions, as applicable.

Updated January 2019