

Exhibit G:

**Annual Loan Products Narrative Reporting Template**

FREDDIE MAC

AFFORDABLE HOUSING PRESERVATION

2019

LOAN PRODUCT

**ACTIVITY:**

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

**OBJECTIVE:**

A – Research the Relationship of Energy-Efficient Homes to Property Values and Mortgage Performance

**ACTIONS:**

Freddie Mac met our 2019 goals under this objective to research the correlation between home energy efficiency and property values and mortgage loan performance.

2019 highlights:

- We completed our research and analysis on the impact of home energy efficiency on property values and mortgage loan performance. We published our findings in a paper entitled, “Energy Efficiency: Value Added to Properties & Loan Performance” in October.
  - Before publishing, we shared drafts of our paper with the U.S. Department of Energy, the Residential Energy Servicers Network, the Rocky Mountain Institute, and the Institute for Market Transformation. We gathered feedback from each through one-on-one calls.
  - We also presented our preliminary findings twice to our Energy Efficiency Task Force Members before publishing our research paper.
  - The feedback received led us to refine the draft to make the energy ratings section easier to understand.
- Using the data, we updated requirements for our GreenCHOICE Mortgages<sup>SM</sup>, our streamlined renovation product tailored for energy-efficiency home improvements.
- Enhancements to GreenCHOICE were announced in our Seller/Servicer Guide on December 4. They better align our product with market needs and provide additional flexibility for homeowners to take advantage of the longer terms, consumer protections, and generally lower rates of mortgage financing to refinance outstanding debts, whether secured or unsecured, previously incurred to make energy-efficiency home improvements.

Objective’s components detailed in the Plan	Corresponding actions taken	Explanation of any deviations from the Plan (if applicable)
1. Provide FHFA a report that describes product development decisions or actions to be taken that directly result from research findings.	<b>Complete</b> <ul style="list-style-type: none"> <li>• Submitted a memorandum to FHFA on December 18 that describes the product development decisions taken based on our research findings.</li> </ul>	

	<ul style="list-style-type: none"> <li>• Incorporated the following flexibilities into our GreenCHOICE Mortgages requirements:             <ul style="list-style-type: none"> <li>○ Introduced a no cash-out refinance option to pay off existing outstanding debt incurred to make energy- and/or water-efficiency improvements.</li> <li>○ Added new requirements for no cash-out refinances on Home Possible® and HomeOne<sup>SM</sup> mortgages with loan-to-value (LTV) ratios greater than 95% but less than or equal to 97%. The update lets borrowers leverage the equity in their homes to refinance less-favorable financing previously obtained for energy-efficiency improvements into the new mortgage.</li> <li>○ Added options in lieu of an energy report when determining the cost effectiveness of solar panels, which provide greater flexibility for borrowers to finance solar panels or refinance debt used to install solar panels into the new mortgage.</li> </ul> </li> </ul>	
<p>2. Incorporate research findings into the development of data collection requirements described under Objective C.</p>	<p><b>Complete</b></p> <ul style="list-style-type: none"> <li>• Added new guidelines to our Seller/Service Guide for using the Appraisal Institute’s Residential Green and Energy Efficient Addendum, which captures data used in our research, to augment the data collected during the appraisal process at the transaction level for GreenCHOICE Mortgages. This provides a mechanism for capturing information not captured in the Uniform Appraisal Residential Report.</li> <li>• Proposed inclusion of data points in future versions of the Uniform Appraisal Dataset based on the</li> </ul>	

	<p>data we used to derive our research findings under this objective. We discussed and provided insights from our task force on the proposed data points during UAD project meetings with Fannie Mae.</p>	
<p>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.</p>	<p><b>Complete</b></p> <ul style="list-style-type: none"> <li>• Reviewed our draft research paper with our Energy Efficiency Task Force members and collaborated with them to incorporate their feedback into our final paper.</li> <li>• Published a <a href="#">research paper</a> in October and presented our findings in various forums to lenders and real estate professionals.</li> <li>• Collaborated with our Energy Efficiency Task Force members to leverage their networks to disseminate our research paper.</li> </ul>	
<p>4. Present or disseminate research findings in at least four 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.</p>	<p><b>Complete</b></p> <ul style="list-style-type: none"> <li>• Presented our research findings in the following forums:             <ul style="list-style-type: none"> <li>○ Freddie Mac’s Energy Efficiency Task Force meeting, October 10</li> <li>○ The Green Symposium for Real Estate, October 23 (Vermont Realtors annual convening)</li> <li>○ Freddie Mac’s Lender Advisory Board (referred to as Customer Advisory Council in the Duty to Serve Plan) call, November 18</li> <li>○ Freddie Mac Policy on Point webinar, December 12</li> <li>○ GreenHome Institute’s webinar, December 18</li> </ul> </li> <li>• Promoted our research paper on-line: posted an article to our Single-Family News Center, which also was included in e-mail to subscribers, and published a blog post under our Single-Family Insights and a consumer-focused blog post on the Freddie Mac Blog.</li> </ul>	

<p>5. Partner with various organizations, lenders, or energy advocacy groups and work with them to create links in their respective web pages that direct individuals to Freddie Mac’s pages where our white paper and corresponding news articles and blogs are posted.</p>	<p><b>Complete</b></p> <ul style="list-style-type: none"> <li>Requested that all Energy Efficiency Task Force members consider linking to our research paper from their respective web sites and/or forwarding a link to the people and organizations in their networks.</li> </ul>	
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**SELF-ASSESSMENT RATING OF PROGRESS:**

- Objective met
- Objective exceeded
- Objective partially completed:
  - 75-99% (substantial amount)
  - 50-74% (limited amount)
  - 25-49% (minimal amount)
  - 1-24% (less than a minimal amount)
- No milestones achieved

**PARTIAL CREDIT JUSTIFICATION:**

Not applicable

**IMPACT:**

- 50 – Substantial Impact
- 40
- 30 – Meaningful Impact
- 20
- 10 – Minimal Impact
- 0 – No Impact

**IMPACT EXPLANATION:**

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

Freddie Mac’s efforts under this objective made an important impact, directly addressing a critical gap in data that has been a significant barrier to the expanded adoption of first lien mortgage lending for energy-efficiency improvements. As we developed our 2018-2020 Plan, our Energy Efficiency Task Force members repeatedly highlighted the lack of data that could be used in product development and specifically asked us to consider conducting research to help inform the market on the relationship of energy-efficient homes to property values and loan performance. Although similar studies have been published, available data has been limited or the

scope narrowly focused on specific markets; also, previous studies covered earlier time frames. Our research used more recent and a wider scope of data sets and, given our position in the mortgage industry, is more objective and authoritative than the other studies.

Our findings allowed us to make fact-based credit policy decisions previously not possible because we had lacked information and data about valuation and mortgage performance that could provide a level of comfort in our understanding of the risk of these mortgages. Specifically, equipped with our research findings, we gained confidence in expanding loan-to-value limits on GreenCHOICE transactions and allowing the payment of existing debts on energy-efficiency home improvements as no-cash out refinances. The financing goes toward enhancing the property, which we now know adds to the value of the collateral securing the loan.

These policy decisions resulted in product updates, completed under Objective C of this activity, that expand access to credit to borrowers wanting to refinance shorter-term and higher-rate debts previously incurred to pay for energy-efficiency renovations. As our policy enhancements gain traction with lenders, lending and future Freddie Mac loan purchases will increase, which will increase liquidity in this market.

Our study also provides information that loan officers and real estate professionals can use to discuss the value and benefits of energy-efficient home features with their customers, which may increase demand for financing energy-efficiency improvements and, in turn, potential purchase activity for Freddie Mac. We created awareness by extensively promoting our findings and the paper at industry events, on our web site, and during conversations with industry professionals across the lending ecosystem. To further raise the study's visibility, we have been exploring ways to incorporate our findings in marketing materials and other consumer resources with the National Association of Realtors and plan to continue these discussions in 2020.

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

According to our findings, demand for energy-efficiency improvements tends to be from high-income earners who may not need financing, while low- and moderate-income earners generally do not consider such improvements when buying homes. We will keep working with housing organizations to promote the benefits of energy efficiency to low- and moderate-income homebuyers and homeowners.

Also, depository institutions find little value in a mortgage option for energy-efficiency improvements because it vies with their other products (HELOCs, unsecured loans). We created GreenCHOICE as a competitive alternative, with streamlined documentation requirements and processes as well as an incentive to help offset costs, such as the energy audit.

Older homes present more opportunities to cut utility costs through energy efficiency. But the appraisal might not support the cost/benefit analysis. We worked with the Appraisal Institute to promote and offer training on valuation techniques specific to energy-efficiency improvements, such as solar installations.

However, appraisers generally have no economic incentive to invest in learning to appraise energy-efficient properties. Those appraisals take more time and effort; appraisers typically are not compensated for the added work. Some appraisers charge more for those appraisals, but that generally is not endorsed and may cause appraisers to lose assignments. We will continue to explore solutions with the Appraisal Institute.

**3. Optional: If applicable, why were all components of this objective not completed?**

Not applicable

*Attach the information detailed in the list of documentation specific to the objective that was provided by FHFA.*

Exhibit G:

**Annual Loan Products Narrative Reporting Template**

FREDDIE MAC

AFFORDABLE HOUSING PRESERVATION

2019

LOAN PRODUCT

**ACTIVITY:**

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

**OBJECTIVE:**

B – Develop Valuation Guidelines and Data Collection Requirements

**ACTIONS:**

Freddie Mac met our 2019 goals under this objective. We took a leadership position in ensuring that energy-efficiency data elements are considered under the Uniform Appraisal Dataset (UAD) redesign project, which is a multi-year joint-GSE effort, and worked to encourage lenders’ adoption of our GreenCHOICE Mortgages<sup>SM</sup> product offering.

2019 highlights:

- In collaboration with our Energy Efficiency Task Force members, particularly the Appraisal Institute, we formally proposed including data points related to energy-efficient home features in a future version of the UAD under the Uniform Mortgage Data Program (UMDP).
- We ensured that energy efficiency was prioritized and received focused attention during UAD alignment and project meetings. Including key data elements is essential to establishing the benefits of energy-efficient home features and the viability of mortgage financing for energy-efficiency improvements.
- We collaborated with our Energy Efficiency Task Force to give the UAD project teams technical feedback and information to increase their technical understanding about energy efficiency and help inform decisions about the data elements. This was especially valuable; the highly technical nature of this market and rapidly changing technologies make residential energy efficiency challenging to understand.
- We included guidance in our Seller/Servicer Guide on appraisal requirements and data-collection tools that appraisers can leverage in the valuation process, which was published as described under Objective C of this activity.

Objective’s components detailed in the Plan	Corresponding actions taken	Explanation of any deviations from the Plan (if applicable)
1. Continue stakeholder discussions about incorporating energy efficiency property data collection requirements into property appraisal guidelines.	<p><b>Complete</b></p> <ul style="list-style-type: none"> <li>• Collaborated with our Energy Efficiency Task Force to identify additional data points to be considered in the design of a future version of the UAD under the UMDP.</li> </ul>	

	<ul style="list-style-type: none"> <li>• Drafted and submitted a proposal to the UAD project team based on our collaboration with our Energy Efficiency Task Force members.</li> <li>• Discussed our proposal with Fannie Mae during UAD project meetings.</li> </ul>	
<p>2. Conduct internal impact assessments on the inclusion of additional data elements into Uniform Residential Appraisal Report.</p>	<p><b>Complete</b></p> <ul style="list-style-type: none"> <li>• Collaborated with the Appraisal Institute to obtain background and rationale on all of the data fields included in its Residential Green and Energy Efficient Addendum (AIRGEEA) appraisal addendum.</li> <li>• Conducted an internal impact assessment with our collateral policy team to analyze the availability of information related to the data points collected in the AIRGEEA, focusing on the data points that our Energy Efficiency Task Force recommended be included in a future version of the UAD; provided feedback to the Appraisal Institute.</li> <li>• Collaborated with the Appraisal Institute to update the AIRGEEA to align the data to be collected for properties with solar panels to our updated Guide requirements.</li> <li>• Published updated requirements on December 4 in our Seller/Service Guide to use the AIRGEEA to underwrite GreenCHOICE Mortgages.</li> </ul>	
<p>3. Coordinate GSE and stakeholder alignment on energy efficiency data fields to be incorporated into Uniform Residential Appraisal Report.</p>	<p><b>Complete</b></p> <ul style="list-style-type: none"> <li>• Submitted our proposal on energy-efficiency data points to the UAD project team and presented information based on our research as well as feedback from our Energy Efficiency Task Force members to drive decisions.</li> <li>• Participated in three UAD alignment sessions with Fannie Mae to discuss which data fields</li> </ul>	

	<p>should be included in future versions of the UAD.</p> <ul style="list-style-type: none"> <li>Reached agreement with Fannie Mae to consider including a subset of the data fields collected in the AIRGEEA.</li> </ul>	
<p>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.</p>	<p><b>Complete</b></p> <ul style="list-style-type: none"> <li>To maximize market impact, in lieu of a pilot, we incorporated new guidelines in our Seller/Service Guide for using the AIRGEEA to augment the transaction-level data collected during the appraisal process for GreenCHOICE Mortgages and announced the update in the December 4 Guide Bulletin. The Addendum captures data we used in our research and proposed to include in future versions of the UAD.</li> </ul>	

**SELF-ASSESSMENT RATING OF PROGRESS:**

- Objective met
- Objective exceeded
- Objective partially completed:
  - 75-99% (substantial amount)
  - 50-74% (limited amount)
  - 25-49% (minimal amount)
  - 1-24% (less than a minimal amount)
- No milestones achieved

**PARTIAL CREDIT JUSTIFICATION:**

Not applicable

**IMPACT:**

- 50 – Substantial Impact
- 40
- 30 – Meaningful Impact
- 20
- 10 – Minimal Impact
- 0 – No Impact

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

Freddie Mac's efforts under this objective laid the foundation for significant impact on this market, addressing two important gaps in the valuation of energy-efficient properties: the lack of available property-level data at the transaction level and appraisers' limited technical expertise in appraising energy-efficient properties.

By working with our Energy Efficiency Task Force to determine the energy-efficiency data that should be collected during property appraisals, submitting our proposal to the Uniform Appraisal Dataset (UAD) project team, and driving to have the topic discussed during joint meetings, we secured Fannie Mae's agreement to include data points related to energy efficiency in future versions of the UAD; the UAD redesign is a multi-year project. Implementing our recommendations will support standardization of the collection of this data across the industry and help make more transaction-level data available going forward. This will improve the accuracy and efficiency of appraising and underwriting homes with energy-efficient features. Therefore, to start to fill the data gap ahead of changes to UAD, Freddie Mac updated our Seller/Service Guide to include guidelines and requirements for collecting energy-efficiency information during the mortgage underwriting process.

Publishing the Guide update also laid the foundation for appraisers to gain technical expertise in appraising energy-efficient properties as well as experience in gathering energy-efficiency data at the transaction level before UAD requirements go into effect. Based on their firsthand experience, we anticipate they will be in a position to provide feedback on our requirements and to offer input on future data-collection requirements. In addition, the Appraisal Institute and similar organizations have the opportunity to update their training curricula now to include our revised guidelines and begin to increase appraisers' technical expertise.

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

Lenders often have trouble discerning that properties being underwritten are energy efficient or have energy-efficiency improvements unless they specifically ask the borrower; therefore, they do not know to hire appraisers qualified to appraise the properties, as Freddie Mac requires. The standardized collection of energy-efficiency data, being developed jointly by the GSEs, will help address this challenge. Freddie Mac is partnering with the Appraisal Institute to raise awareness of appraisal requirements around energy-efficient properties. As appraisers develop the habit of asking lenders whether a subject property is energy efficient before taking on new assignments, lenders will be prompted to ask their borrowers.

Relatively few appraisers have the technical expertise to appraise energy-efficient properties and lenders have trouble finding appraisers who meet Freddie Mac's appraisal qualifications. We are collaborating with the Appraisal Institute to make its green registry, a listing of appraisers who completed the Appraisal Institute's courses on appraising energy-efficient properties, more broadly available to lenders. The Appraisal Institute's green registry is based on self-reporting, though, and may not be all-inclusive. Therefore, we also are collaborating with the Appraisal Institute and Earth Advantage, a non-profit organization that trains appraisers on appraising energy-efficient properties, to identify trained appraisers where lenders need them.

**3. Optional: If applicable, why were all components of this objective not completed?**

Not applicable

*Attach the information detailed in the list of documentation specific to the objective that was provided by FHFA.*

Exhibit G:

**Annual Loan Products Narrative Reporting Template**

FREDDIE MAC

AFFORDABLE HOUSING PRESERVATION

2019

LOAN PRODUCT

**ACTIVITY:**

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

**OBJECTIVE:**

C – Facilitate Financing of Energy Efficiency Improvements and Energy Efficient Homes

**ACTIONS:**

Freddie Mac substantially met our 2019 goals under this objective by updating our GreenCHOICE Mortgages<sup>SM</sup> product to facilitate financing of energy-efficiency improvements and promoting the product enhancements to key industry participants. In addition, we analyzed and studied ways to meet the Duty to Serve final rule’s threshold for energy-consumption reductions, identified a solution to meet this requirement, and defined a cost-effective implementation timeline.

2019 highlights:

- We confirmed that our requirements for energy audits, applicable when the aggregate costs of the improvements being financed exceed \$6,500, addressed the cost-effectiveness test under the Duty to Serve final rule but not the requirement for 15% energy-consumption reduction.
- Work began toward prioritizing updates to our underwriting and delivery systems to enable collection of the additional data at the transaction level needed to verify that energy-efficiency home improvements to reduce energy consumption by 15%.
- We announced enhancements to our GreenCHOICE Mortgages product that allow the proceeds of the mortgage to pay off existing debt used to finance energy-efficiency improvements. This update allows homeowners who previously financed energy improvements with unsecured or secondary financing to refinance those loans, consolidate debt, and take advantage of today’s near-historically low mortgage rates.
- We promoted product updates at industry events, by posting information and resources on our web site, and through meetings with lenders, housing finance agencies, and real estate professionals.

Objective’s components detailed in the Plan	Corresponding actions taken	Explanation of any deviations from the Plan (if applicable)
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	<p><b>Partially complete</b></p> <ul style="list-style-type: none"> <li>• Conducted an internal gap analysis to compare data we currently require for GreenCHOICE Mortgages transactions against the data that will need to be collected to</li> </ul>	<ul style="list-style-type: none"> <li>• Based on our analysis, we will need to start collecting information that currently is not collected at the transaction level to verify compliance with the Duty to Serve final rule’s energy-consumption threshold</li> </ul>

<p>exceed the cost of installation. We plan to incorporate this additional guidance into the Seller/Servicer Guide update, or the updated pilot described in item 2 below.</p>	<p>determine compliance with the final rule's required 15% reduction in energy consumption.</p> <ul style="list-style-type: none"> <li>• Analyzed our requirements for energy audits and researched energy audit methodologies to assess whether an energy audit report could reliably be used as a proxy for determining the required percentage reduction in energy consumption.</li> <li>• Determined that energy audits typically include improvement recommendations where the related savings realized over the life of the improvement exceed the cost of installation; subsequently confirmed that our requirements around energy audits, applicable when the aggregate cost of improvements exceed \$6,500, address the cost-effectiveness test under the Duty to Serve final rule.</li> <li>• Conducted an internal gap analysis of the data we currently require for GreenCHOICE Mortgages vs. the data that we would need to collect to determine compliance with the final rule's energy-consumption reduction requirements; subsequently, determined that additional data would have to be captured at the transaction level and that, to do so, we would need to make updates to our underwriting and delivery systems.</li> <li>• Started work to prioritize system updates in 2020. It is important to note that our ability to make system upgrades that meet the rule requirement is dependent on timing of implementation of related projects under the Uniform Mortgage Data Program (UMDP). Making any system updates ahead of the UMDP project implementation would be inefficient, increase costs, and cause lender confusion and/or</li> </ul>	<p>requirements. This additional information is not used in traditional underwriting; therefore, any process to collect it must be developed from the ground up. To minimize the burden on lenders of collecting the additional information, which otherwise would deter product adoption, Freddie Mac determined that any new process to collect such data should be automated. However, we are unable to make updates to our systems until related projects under the UMDP are completed.</p> <ul style="list-style-type: none"> <li>• Consequently, updates that must be made to Loan Product Advisor® to enable the capture of the additional information are on hold.</li> </ul>
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	<p>dissatisfaction because they would have to undertake multiple system implementations.</p>	
<p>2. Issue a Seller/Servicer 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/Servicer 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 continue to inform product design.</p>	<p><b>Complete</b></p> <ul style="list-style-type: none"> <li>• Announced the following expansions to our GreenCHOICE requirements and flexibilities in the December 4 Seller/Servicer Guide Bulletin: <ul style="list-style-type: none"> <li>○ Introduced a no cash-out refinance option to pay off existing outstanding debt.</li> <li>○ Added new requirements for no cash-out refinance on Home Possible® and HomeOne<sup>SM</sup> mortgages with LTV ratios greater than 95% but less than or equal to 97%.</li> <li>○ Added options in lieu of an energy report when determining the cost effectiveness of solar panels.</li> <li>○ Added guidelines for using the Appraisal Institute’s Residential Green and Energy Efficient Addendum, which captures data used in our research, to augment the data collected during the appraisal process at the transaction level for GreenCHOICE Mortgages.</li> </ul> </li> </ul>	
<p>3. Promote newly designed Seller/Servicer 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>Complete</b></p> <ul style="list-style-type: none"> <li>• Participated in the following industry events: <ul style="list-style-type: none"> <li>○ The Green Symposium for Real Estate – Vermont Realtors (October 23)</li> <li>○ Freddie Mac’s Energy Efficiency Task Force meeting (October 10)</li> <li>○ GreenHome Institute webinar (December 18)</li> <li>○ Policy on Point (POP) webinar: All Things Affordable (December 12)</li> </ul> </li> </ul>	

	<ul style="list-style-type: none"> <li>○ Provided updates during meetings and conversations with lenders, housing finance agencies, and real estate professionals.</li> <li>● Published the following on FreddieMac.com; the postings typically are announced on the Single-Family News Center:             <ul style="list-style-type: none"> <li>○ News article: Updates to GreenCHOICE</li> <li>○ Blog: Energy Efficient Home Improvements Can Increase Home Value</li> <li>○ Blog: Energy Efficient Financing</li> <li>○ Blog: Options to Refinance Energy Efficient Loan Programs</li> </ul> </li> </ul>	
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**SELF-ASSESSMENT RATING OF PROGRESS:**

- Objective met
- Objective exceeded
- Objective partially completed:
  - 75-99% (substantial amount)
  - 50-74% (limited amount)
  - 25-49% (minimal amount)
  - 1-24% (less than a minimal amount)
- No milestones achieved

**PARTIAL CREDIT JUSTIFICATION:**

Freddie Mac substantially met our 2019 goals under this objective, with one exception: To minimize additional costs and burden on lenders and Freddie Mac, we delayed implementation of the solutions we designed to verify the required 15% reduction in energy consumption resulting from energy-efficiency home improvements. This implementation is the last step to completing this objective and is on hold, pending completion of system changes related to the Uniform Mortgage Data Program (UMDP) project. Most lenders have been scheduling their system implementations to align with the UMDP timelines. Implementing any system changes ahead of the UMDP project implementation would lead lenders and Freddie Mac to expend additional resources unnecessarily. It also would create lender dissatisfaction and might cause confusion around which fields to implement first. Any additional implementations would add complexity and cost to their plans and possibly deter implementation altogether.

Freddie Mac completed the substantive work to enhance and promote GreenCHOICE Mortgages; the one remaining piece, while necessary to verify the required energy-consumption reduction, will not increase support for this market. Instead, completing the final action simply will enable us to report accurately on whether energy-efficiency improvements reduce energy consumption by the percentage required. We are aware, however, that the unsuccessful

implementation of this last component could be detrimental; if we make it difficult for lenders to implement, we will discourage their participation. Taking a thoughtful, more measured approach in this case is appropriate.

Given that we completed the substantive portion of our work—rolling out important product enhancements, conducting targeted outreach, completing a data gap analysis, and determining how to fill the gap—substantial partial credit was earned. We are ready to implement the solutions when possible.

**IMPACT:**

- 50 – Substantial Impact
- 40
- 30 – Meaningful Impact
- 20
- 10 – Minimal Impact
- 0 – No Impact

**IMPACT EXPLANATION:**

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

Freddie Mac’s actions under this objective laid the foundation for substantial future impact in the residential energy-efficiency market. Based on our research, we understand that most energy-efficiency renovations are financed through unsecured or secondary financing, which tend to have higher interest rates and shorter terms than first-lien mortgage financing, resulting in higher monthly payments. The GreenCHOICE Mortgages enhancement announced in December allows for the proceeds from a refinance transaction to pay off existing debt used to finance energy home improvements, giving homeowners the flexibility to take advantage of today’s near-historically low interest rates and obtain a more affordable option for refinancing the costs of energy-efficiency improvements. As a result, homeowners can improve their homes’ energy efficiency, affordability, and value for years to come.

GreenCHOICE offers a more affordable and cost-effective option for financing energy-efficiency improvements, which can be made either after the purchase or during the homebuying process. Because improvements may be completed after the note date, they will not delay closing on the mortgage.

GreenCHOICE has particular potential benefit for homebuyers and homeowners in rural areas, where 60% of homes are at least 30 years old, according to the Urban Institute, and likely lack up-to-date energy-efficiency features. Owners and buyers of factory-built homes may finance energy-efficiency improvements with GreenCHOICE, too, as long as the renovations do not affect the home’s structural integrity.

Through our outreach efforts, we promoted our enhanced GreenCHOICE Mortgages product to our lender partners and other industry participants, educating them on the product and its benefits. Freddie Mac plans to increase collaboration with our lender partners to help expand product adoption and accelerate loan purchase activity.

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

Collecting information to assess whether certain energy-efficiency improvements reduce energy consumption will depend on the availability of certain property-level data and may add a layer of complexity for lenders

originating GreenCHOICE Mortgages. To address these challenges, Freddie Mac plans to continue to collaborate with the Appraisal Institute and other groups with an interest in collecting energy-efficiency data at the property level to ensure this data is collected during the appraisal process, in property sale listings, and other channels in a standardized manner. Freddie Mac also will continue to push for this data to be included in future versions of the Uniform Appraisal Dataset (UAD) and look for opportunities to automate energy-efficiency data collection to minimize operational burdens on lenders. Including this data in future versions of the UAD will make property-level data related to energy efficiency more readily available during each transaction and make it easier to collect information to assess reductions in energy consumption.

**3. Optional: If applicable, why were all components of this objective not completed?**

To minimize operational burden on lenders as well as Freddie Mac's implementation costs, the solutions we designed in 2019 to verify that energy-efficiency improvements financed through GreenCHOICE result in the required 15% energy-consumption reduction are on hold, pending completion of system changes related to the Uniform Mortgage Data Program (UMDP) implementation.

To collect the additional data required to assess energy-consumption reductions, we must make changes to Loan Product Advisor (LPA), our automated underwriting system; however, LPA is expected to be implemented in summer 2020 under the UMDP project. Lenders, who have been building their systems to match the new LPA Data Specification v5.0.06, will be required to migrate to New LPA between June and November 2020. Therefore, if we implemented changes to Legacy LPA in 2019, we would have a) wasted money and resources updating a version of LPA that will be obsolete in a few months and b) duplicated our efforts and expenditures to make similar updates in New LPA.

To minimize unnecessary costs to us and our lender partners, we will prioritize enhancing LPA in 2020 to allow the capture of data required to assess compliance against the 15% energy consumption-reduction threshold.

*Attach the information detailed in the list of documentation specific to the objective that was provided by FHFA.*

Exhibit C:

**Second Quarter Loan Products Narrative Reporting Template**

FREDDIE MAC

AFFORDABLE HOUSING PRESERVATION

Q2: JANUARY THROUGH JUNE 2019

LOAN PRODUCT

**ACTIVITY:**

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

**OBJECTIVE:**

*Objective A: Research the Relationship of Energy-Efficient Homes to Property Values and Mortgage Performance*

**ACTIONS:**

*We are on target to meet our 2019 goals under this objective. In the first half of 2019, Freddie Mac made progress toward publishing a research paper, updating our products based on our research, and disseminating our research findings to the housing and energy-efficiency industries in partnership with various organizations, including lenders, energy-efficiency advocacy groups, and real estate professional networks.*

*First-half 2019 highlights:*

- *We completed a draft white paper that we plan to publish later this year. Internal reviews are in process.*
- *We shared the research findings with our credit and collateral teams to determine how to incorporate our findings into our product design. Based on the data and analytics, we drafted proposed product enhancements for consideration.*
- *We previewed the research dataset, data sample, methodology, assumptions, and key findings with the Residential Energy Services Network (RESNET), the U.S. Department of Energy (DOE), the Institute for Market Transformation (IMT), the Rocky Mountain Institute (RMI), and our Energy Efficiency Task Force. They provided feedback on our findings, confirmed our methodology and assumptions, and increased our confidence that our white paper and research findings will be well-received by the industry.*
- *During the preview with our Energy Efficiency Task Force, we received feedback on how to effectively disseminate our research findings once published.*
- *A comprehensive marketing plan is being designed to promote the research findings and white paper effectively to identified audiences once published.*

Actions	2019 Achievements through Q2
1. Provide FHFA a report that describes product development decisions or actions to be taken that directly result from research findings.	<b>In progress</b> <ul style="list-style-type: none"> <li>• Met with internal Freddie Mac stakeholders to determine additional product flexibilities or product updates that could be incorporated into our GreenCHOICE Mortgages<sup>SM</sup> offering based on our research results.</li> <li>• Developed proposed product updates and started the internal product development process to assess feasibility and secure internal approvals.</li> </ul>
2. Incorporate research findings into the development of data collection requirements described under Objective C.	<b>In progress</b> <ul style="list-style-type: none"> <li>• Included updated data-collection guidance in the proposed product updates described above.</li> </ul>

	<ul style="list-style-type: none"> <li>Both sets of updates will go through the product development process concurrently.</li> </ul>
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.	<p><b>In progress</b></p> <ul style="list-style-type: none"> <li>Completed the first draft of the white paper and started the internal review process.</li> </ul>
4. Present or disseminate research findings in at least four industry events, during Freddie Mac Customer Advisory Council meetings and via e-mail to all Single-Family News subscribers.	<p><b>In progress</b></p> <ul style="list-style-type: none"> <li>Developing a comprehensive marketing plan to disseminate the research findings and white paper once published. The plan entails customizing the information to be shared and communications vehicles and channels used to reach our target audiences.</li> </ul>
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.	<p><b>In progress</b></p> <ul style="list-style-type: none"> <li>Collaborated with our internal teams to identify potential partners to help carry out our marketing plan.</li> </ul>

*(Character limit: 3,000 characters, including spaces)*

**SELF-ASSESSMENT RATING OF PROGRESS:**

Select the category that best describes progress on this objective for the reporting period.

- On-target to meet or exceed the objective
- Progress delayed and/or partial completion of the objective expected
- Unlikely to achieve any milestones of the objective

**ADDITIONAL INFORMATION (IF APPLICABLE):**

*If the Enterprise is not on target to meet or exceed the objective, briefly explain why. (Character limit: 1,000 characters, including spaces)*

Exhibit C:  
**Second Quarter Loan Products Narrative Reporting Template**

**FREDDIE MAC**  
**AFFORDABLE HOUSING PRESERVATION**  
**Q2: JANUARY THROUGH JUNE 2019**  
**LOAN PRODUCT**

**ACTIVITY:**

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

**OBJECTIVE:**

*Objective B: Develop Valuation Guidelines and Data Collection Requirements*

**ACTIONS:**

*We are on target to meet our 2019 goals under this objective. In the first half of 2019, our work under this objective included collaborating and coordinating with stakeholders toward incorporating energy-efficiency property data-collection requirements into the Uniform Appraisal Dataset (UAD) and Uniform Rural Appraisal Report. We also continued our pilot program to test the usefulness of data collected in the latest version of the Appraisal Institute’s Residential Green and Energy Addendum when used in combination with the PV Value tool, a solar-panel valuation tool. However, after starting this pilot last year we saw an opportunity to revise the pilot terms based on the insights that we had gained to date and to maximize market impact. The revised pilot terms are pending internal approvals and we plan to continue the pilot with revisions during the remainder of 2019.*

*First-half 2019 highlights:*

- *Freddie Mac worked with the UAD project team, which includes Fannie Mae and focuses on updating the UAD and uniform appraisal reporting forms, to incorporate energy-efficiency property data fields into the proposed UAD and future versions of the Uniform Residential Appraisal Report. We also worked with our Energy Efficiency Task Force to identify data elements that should be considered for inclusion into the future UAD and provided those to the joint project team.*
- *We coordinated feedback sessions between our task force and the Freddie Mac collateral policy team representing us in UAD joint project sessions to ensure that task force members’ feedback was conveyed to the joint project team for consideration. We facilitated the inclusion of selected members from our task force in future market stakeholder reviews of the UAD as it is developed.*
- *We decided to revise our approach based on what we learned from our pilot begun in 2018 to test the usefulness of data collected in the latest version of the Appraisal Institute’s Residential Green and Energy Addendum when used in combination with the PV Value tool to appraise properties with solar panels. Specifically, based on the pilot rollout work, we learned that there is a lack of appraisers knowledgeable about techniques for appraising energy-efficient properties and that interest in taking related training is limited. Therefore, we adjusted the pilot terms to overcome these challenges and plan to test the revised terms in a continuation of the pilot started in Year 1.*

Actions	2019 Achievements through Q2
<p>1. Continue stakeholder discussions about incorporating energy efficiency property data collection requirements into property appraisal guidelines.</p>	<p><b>In progress</b></p> <ul style="list-style-type: none"> <li>• Conducted feedback sessions with our Energy Efficiency Task Force and provided input to the joint UAD project team for consideration.</li> <li>• Facilitated the inclusion of key members of our task force be included in future market stakeholder reviews organized by the joint project team.</li> </ul>

<p>2. Conduct internal impact assessments on the inclusion of additional data elements into the Uniform Resident Appraisal Report.</p>	<p><b>Not started</b></p> <ul style="list-style-type: none"> <li>• The joint project team is still determining the data fields to include in the UAD.</li> <li>• Because our work under the Duty to Serve Underserved Markets Plan includes adding data elements to the UAD, which is being redesigned under the UAD and Form Redesign initiative, the DTS team plans to adhere to the UAD joint project’s timeline and project plan.</li> </ul>
<p>3. Coordinate GSE and stakeholder alignment on energy efficiency data fields to be incorporated into the Uniform Residential Appraisal Report.</p>	<p><b>Completed</b></p> <ul style="list-style-type: none"> <li>• Met with the Fannie Mae project team to discuss the specific data elements that could be included in a future version of the UAD.</li> </ul>
<p>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.</p>	<p><b>In progress</b></p> <ul style="list-style-type: none"> <li>• Learned that a lack of trained appraisers in the pilot’s geographic area and low interest among appraisers in taking training on techniques for appraising energy-efficient properties were greater challenges than anticipated.             <ul style="list-style-type: none"> <li>○ Our pilot program testing the usefulness of certain data-collection tools in appraising properties with solar panels required the lender to hire appraisers who had completed residential valuation training, which the Appraisal Institute (AI) offers for free online.</li> <li>○ Our lender conducted outreach to its designated appraisal management company. However, only seven appraisers registered for the training and none completed it. We expected higher participation and did not expect that appraisers who registered would not complete the training.</li> <li>○ According to the AI, appraising properties with solar panels is more complicated than appraisers realize because it requires them to conduct more due diligence and comprehend the nuances of solar panel technologies. In addition, the training is complex, and appraisers are not motivated to take it because they typically would not get paid more for conducting the additional due diligence.</li> </ul> </li> <li>• To address the lack of appraisal knowledge and limited interest in completing the required training, redesigned the pilot to eliminate the training requirement and replace the PV Value tool with a simpler tool. We plan to launch the revised pilot in the second half of 2019.</li> <li>• Revised pilot terms to test property data-capture mechanisms, that did not require extensive training, to be used in the appraisal process and started our internal approval and contracting</li> </ul>

	process to rollout the revisions under our pilot program.
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*(Character limit: 3,000 characters, including spaces)*

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Exhibit C:  
**Second Quarter Loan Products Narrative Reporting Template**

**FREDDIE MAC**  
**AFFORDABLE HOUSING PRESERVATION**  
**Q2: JANUARY THROUGH JUNE 2019**  
**LOAN PRODUCT**

**ACTIVITY:**

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

**OBJECTIVE:**

*Objective C: Facilitate Financing of Energy Efficiency Improvements and Energy Efficient Homes*

**ACTIONS:**

*Freddie Mac is on target to meet our 2019 goals under this objective. In the first half of 2019, we worked to refine the policy and guidelines around our GreenCHOICE Mortgages<sup>SM</sup> product as part of our effort to facilitate the financing of energy-efficient home improvements and energy-efficient homes.*

*First-half 2019 highlights:*

- *Based on what we learned from our pilot program rollout work and research conducted under Objective A in Year 1, we developed potential policy updates to Freddie Mac’s GreenCHOICE Mortgages<sup>SM</sup>.*
- *Our internal policy approval processes to announce the policy revisions during the second half of 2019 is under way. We plan to leverage the information contained in energy audits to assess cost-effectiveness of the improvements financed through GreenCHOICE Mortgages<sup>SM</sup>.*

Actions	2019 Achievements through Q2
<p>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 <i>Seller/Service Guide</i> update or the updated pilot described in item 2 below.</p>	<p><b>In progress</b></p> <ul style="list-style-type: none"> <li>• Revised our requirements for energy audits as part of the proposed policy revisions we have in process.</li> <li>• Plan to leverage the information in energy audits to assess the cost-effectiveness of improvements to be financed through our GreenCHOICE Mortgages product. Energy audits typically include improvement recommendations where the savings generated over the life of the improvement exceed the cost of installation.</li> </ul>
<p>2. Issue a <i>Seller/Service Guide</i> 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 <i>Seller/Service Guide</i> 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 continue to inform product design.</p>	<p><b>In progress</b></p> <ul style="list-style-type: none"> <li>• Drafted proposed Guide content and updated requirements.</li> <li>• Started the internal approval process to enable rollout of a Guide Bulletin update in the second half of 2019.</li> <li>• Developed revisions to the pilot started in Year 1 under Objective B and initiated the process for</li> </ul>

	gaining approval to rollout the revised pilot in the second half of 2019.
<p>3. Promote newly designed <i>Seller/Service Guide</i> product flexibilities and drive attendance to lender training 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 e-mail to all Single-Family News subscribers.</p>	<p><b>In progress</b></p> <ul style="list-style-type: none"> <li>• Pending final Guide content and internal approvals.</li> </ul>

*(Character limit: 3,000 characters, including spaces)*

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