



Freddie Mac's securitization program reflects our leadership, creativity and business acumen. Our K-Deals, Multifamily flagship securitization program, set the industry standard for GSE commercial mortgage-backed securities, and we are the leader in the space.

General K-Deal Program Overview

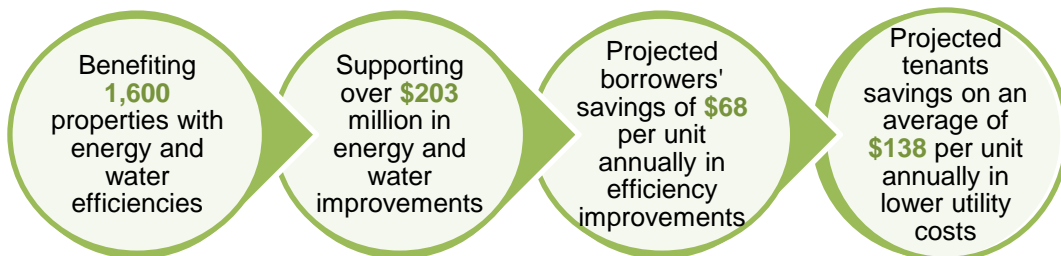
<p>Total 2018 Securitization \$72.8 billion</p> <hr/> <p>Total Securitization of K-Deals \$61.6 billion in 2018</p> <hr/> <p>63 K-Deals issued in 2018</p> <hr/> <p>Freddie Mac has not realized any credit losses on our K-Deal guaranteed classes</p> <hr/> <p>99.98% of the K-Deal loans are current (by outstanding principal balance as of 2018 year-end)</p>	<h3>MF Securitization Program Strengths</h3> <ul style="list-style-type: none"> Strong Performance Strong Credit Best-in-class Servicing Standard Liquidity Call Protection Diversification 	<h3>Sample K-Deal Subordination Sequential Pay Example</h3> <p>*Floating-rate deals are pro rata structure including principal and interest collected unless certain waterfall triggers occur.</p>
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Freddie Mac Multifamily announces the addition of KG-Deals, environmental and social impact series. The first KG-Deal will be announced in June 2019.

As U.S. rental housing ages (over 77% was built prior to 2000), older rental housing is generally less energy efficient and tenants living in these properties pay, on balance, more in utilities than newer multifamily properties. Freddie Mac recognized the need to improve rental housing to benefit tenants through lower monthly expenses and the environment through reduced energy and water consumption. In August 2016, Freddie Mac Multifamily introduced our Green Up® and Green Up Plus® offerings designed to lower expenses for workforce housing tenants by incentivizing borrowers to make energy and water efficiency improvements to workforce housing.

Green Program Key Facts

Freddie Mac has purchased over \$44.7 billion of Green Up and Green Up Plus loans since inception of the program in 2016 through the end of 2018. The program benefits both the environment and the full life cycle of our borrowers, lenders, investors and tenants.





Meeting the demand for adequate, affordable rental housing in a smart, efficient manner is imperative for us. Our Green Advantage[®] offerings are reducing the rental housing carbon footprint, making energy and water improvements more cost effective for borrowers, while helping to lower utility expenses for renters. It's a win-win for our borrowers, tenants and the environment.

Our Green Advantage Program

Freddie Mac Multifamily's Green Advantage[®] program provides incentives to multifamily housing borrowers to make water and energy efficiency improvements to existing properties and to lower expenses for workforce housing tenants. Since 2016, we have purchased over \$44.7 billion in loans that will be used to lower utility costs for 450,000 units nationwide.

Eighty-six percent of units that come out of our Green Advantage portfolio are affordable to households at 100% area median income (AMI) or less. Green Advantage loans upgrade and improve workforce housing and affordable properties that are typically middle-aged, garden-style apartments.

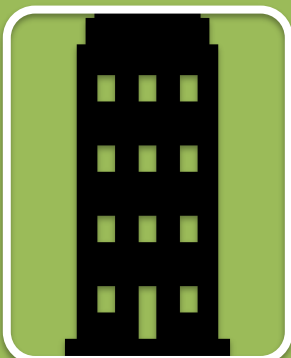
Since launching Green Advantage in 2016, we have purchased over \$44.7 billion of green loans and offered better pricing and financing to over 1,100 borrowers

Green lending is beneficial to reducing our environmental footprint and makes good business sense. Environmentally friendly housing is also increasingly important to renters. On average, the projected per unit annual savings is \$220, meaning that renters may also benefit from lower utility bills, reduced cost of living and have a greener footprint.



Environmental Impact

- **Water improvements are projected to save 4.7 billion gallons in water per year:** This is enough water to fill 7,200 Olympic-sized swimming pools or the equivalent water usage for over 155 million loads of laundry. The most common water-saving improvements selected are showerheads, bathroom aerators, kitchen aerators and toilets. Borrowers met program requirements by pursuing water improvements on 81% of loans.
- **Energy savings are projected to save 1.8 billion kBtu per year.** This is enough energy to power roughly 48,000 homes across America or enough power for 10,500 football stadiums. The most common energy-saving improvements selected are LED lighting for interior, exterior and common areas and HVAC thermostats.



Social Impact

- **Green Advantage serves low- and middle-income families:** Freddie Mac Green Advantage loans serve workforce housing. Properties are mostly garden-style apartments, on average 34 years old with 86% of units being affordable to households at 100% AMI or less.
- **Improvements cost less than \$500 per unit.** The projected average cost for improvements selected by borrowers is just over \$450 per unit.
- **Improvements are projected to save on average \$220 per unit per year.** Loans average almost \$61,000 of savings per year or \$220 per unit.

The Green Bond Principles (GBP), as administered by the International Capital Markets Association, are voluntary process guidelines for best practices when issuing Green Bonds. The GBP recommend transparency, disclosure and promote integrity in the Green Bond market. The Freddie Mac Multifamily Green Bond Framework is aligned with the four core components of the GBP outlined in the Freddie Mac's Green Bond Framework published on the Freddie Mac Multifamily's website.

The Four Pillars of the Green Bond Principles

1. Use of Proceeds

- a. The proceeds of Freddie Mac's Green Bonds are used to finance both the Green Up and Green Up Plus loans that serve as collateral in the KG-Deals, our environmental and social impact K-Deal series, and may be included in other K-Deals.

2. Process for Project Evaluation and Selection

- a. K-Deals are generally backed by newly acquired mortgages underwritten to Freddie Mac's industry-leading underwriting standards.
- b. Eligible green mortgage loans need to satisfy:
 - i. The underwriting criteria described in the Green Advantage Term Sheet (attached)
 - ii. The requirements documented in the Freddie Mac Multifamily Seller/Servicer Guide
 - iii. Obtain one of the following Green Reports:
 1. Green Assessment
 2. Green Assessment Plus

3. Management of Proceeds

- a. Green bond issuances will be designated through a KG-Deal. Green bond proceeds are reported monthly by the master servicer and trustee as part of the standard Investor Reporting Package.

4. Reporting

- a. Freddie Mac is committed to reporting **asset level** and **portfolio level** performance for green bonds backed by properties financed using our Green Advantage offerings
- b. Green Bond information will be made available through either the Multifamily Securities Investor Access ([MSIA](#)) tool or through a [Security Lookup](#) tool
- c. **External Reviews** – Completed by WegoWise by Appfolio

Second Opinion by Cicero

Freddie Mac is engaging an independent third party, Center for International Climate and Environmental Research (CICERO), to evaluate our Green Bond Framework. We intend to publish this opinion on our Freddie Mac Multifamily website, <https://mf.freddiemac.com>, and in our KG-Deal offering documents.



We Help Make Workforce Housing More Affordable by Making it Green!

The need for adequate, affordable rental housing is greater than ever. Making affordable, workforce housing more “green” passes the savings onto tenants.

Workforce Housing general guidelines

Rent

- Rent is less than the average market rent for the area
- Rent is affordable to households with incomes less than 80% of AMI (in most areas)
- For high housing cost markets: Rents are affordable to households with incomes less than 100% of AMI
- For very high housing cost markets: Rents are affordable to households with incomes less than 120% of the area median
- For extremely high housing cost markets: Rents are affordable to households with incomes less than 150% of the area median

Property Characteristics

- Class B or C constructed before 2000 (typically)
- Any property type (with the exception of assisted living seniors housing and student concentrations) including military concentrations and manufactured housing, of which a vast majority is garden style (a lot of random capitalizations here – can we lowercase the majority?)
- Limited amenity and basic interior finishes (typically dated or low cost with older appliances)

It is important to our customers

- Most of Freddie Mac’s annual origination activity falls into the workforce category

In December 2018, Freddie Mac released a report on their [website](#) entitled, “Green Improvements in Workforce Housing”, which analyzed the portfolio of loans where borrowers elected to pursue energy and water efficiency improvements. This report contained a dataset of property-level data on the types of improvements made and projected savings. Through this report, dataset and our planned annual updates, we are filling a gap in the market, which currently lacks energy and water efficiency data for multifamily properties.

Did You Know?

*Freddie Mac will provide **CRA** side letters to investors who wish to claim CRA credit for their investment. 102 different investors have claimed these credits in our Standard K-, SB- and ML-Deals.*



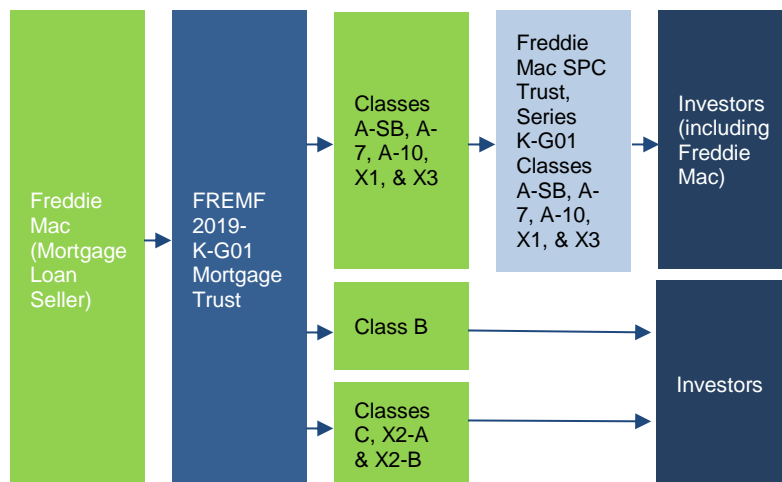
[Preliminary] K-G01 Transaction Highlights

Overview of Deal Structure

(Expected Announcement: June 17, 2019)

Class	Initial Principal or Notional Amount	Pricing Spread	Assumed Weighted Average Life
Offered K-G01 Certificates:			
A-SB	TBD	S+TBD	TBD
A-7	TBD	S+TBD	TBD
A-10	TBD	S+TBD	TBD
X1	TBD	T+TBD	TBD
X3	TBD	T+TBD	TBD
Total Guaranteed	TBD		

Structural Diagram



Deal Characteristics¹

Collateral Type	Multifamily Green Advantage Workforce Housing Mortgage Loans
Collateral Structure Type	Balloon
Mortgaged Loans	TBD
Initial Underlying Pool Balance	[\$500,000,000]
Rating Agencies	Not Rated
Waterfall Structure	Sequential
Top 5 State Concentrations	TBD
WA Mortgage Interest Rate	TBD
WA Original Maturity	TBD
WA DSCR	TBD
WA LTV	TBD

All presented information in this handout is as of December 31, 2018.

For additional information, please contact: MF_Securities@freddiemac.com or visit our website at mf.freddiemac.com

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Green Advantage Term Sheet

	Green Up	Green Up Plus
Minimum Projected Consumption Reduction⁽¹⁾	30% of energy or water/sewer consumption for the whole property, with a minimum of 15% from energy, based on Green Assessment	30% of energy or water/sewer consumption for the whole property, with a minimum of 15% from energy, based on Green Assessment Plus
Underwriting Approach⁽²⁾	Recognize up to 50% of owner-paid energy and/or water/sewer savings based on Green Assessment	Recognize up to 75% of projected owner-paid energy and/or water/sewer savings based on Green Assessment Plus
Loan Proceeds/Sizing	<ul style="list-style-type: none"> Debt Coverage Ratio (DCR): -0.05x of policy-compliant DCR. Subject to lesser of 1.20x or program/product limit Loan-to-Value (LTV) ratio: +5.0% of policy-compliant LTV. Subject to greater of 85% or program/product limit 	<ul style="list-style-type: none"> DCR: -0.05x of policy-compliant DCR. Subject to lesser of 1.20x or program/product limit LTV: +5.0% of policy-compliant LTV. Subject to greater of 85% or program/product limit
As-Is DCR/LTV	<ul style="list-style-type: none"> DCR: -0.05x of policy compliant DCR Subject to lessor of 1.20x or product limit LTV: +5.0% of policy compliant LTV Subject to greater of 85% or product limit 	<ul style="list-style-type: none"> DCR: -0.05x of policy compliant DCR Subject to lessor of 1.20x or product limit LTV: +5.0% of policy compliant LTV Subject to greater of 85% or product limit
As-Improved DCR/LTV (If Applicable)	<ul style="list-style-type: none"> Must meet policy compliant DCR/LTV; no adjustments Based on As-Improved NOI and As-Improved appraised value 	<ul style="list-style-type: none"> Must meet policy compliant DCR/LTV; no adjustments Based on As-Improved NOI and As-Improved appraised value
Time to Complete Green Improvements	2 years to complete	2 years to complete
Escrow Requirements	Funds for energy/water efficiency work will be escrowed at 125% of cost and released as work is completed	Funds for energy/water efficiency work will be escrowed at 125% of cost and released as work is completed
Required Third-Party Reports	Green Assessment	Green Assessment Plus
Benchmarking Data Collection⁽¹⁾	Green Up and Green Up Plus loans require Borrowers to engage a third-party data collection consultant, prior to the origination of the loan, to collect, input and monitor actual energy and water usage through the term of the loan.	

(1) In 2019, FHFA made the following [requirement changes](#) for Green Up and Green Up Plus loans to be excluded from the multifamily cap: (i) Green Up and Green Up Plus which previously had to have a minimum projected consumption reduction of 25% energy or water consumption for the whole property based on the Green Assessment or Green Assessment Plus must now have a minimum projected consumption reduction of 30% in whole property energy and water consumption of which 15% reduction must be in energy consumption; and (ii) Borrower, who had been able to elect whether to retain a third-party data collection consultant, must now retain the third-party data collection consultant for the term of the loan.

(2) Based on the historical eligible green loan production, we have rarely utilized this expense adjustment.