

# Green Bonds Reporting Methodology

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As of December 31, 2024



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In this report, we provide utility consumption data collected for each property backing the Green Bonds prior to the implementation of the green improvements (pre-retrofit, or baseline data). Additionally, we have received actual reported energy and water usage data (Benchmarking Data).

## Program Parameters

The program parameters have evolved each year to meet the requirements set by FHFA for green loan treatment related to the multifamily loan purchasing volume cap. The chart below provides details of the program requirement by year. The type of data used in this impact report typically allows for aggregation across all Green Bonds issued but the shifts in program parameters limit the asset-to-asset level comparisons.

Program Year(s)	Consumption Savings Threshold	Benchmarking Data Consultant	Affordability at Workforce Housing Levels
<b>2016-2017</b>	15% owner-paid, tenant-paid or whole property energy OR water reduction	Not required – borrower or third party could enter Benchmarking Data	Not required
<b>2018</b>	25% whole property energy OR water reduction	Not required – borrower or third party could enter Benchmarking Data	Not required
<b>2019-2024</b>	30% whole property reduction from a MINIMUM 15% energy and 15% energy AND/OR water	Required – borrower must engage prior to loan origination	Required between Nov. 2019 and March 2023. Otherwise not required

## Efficiency Improvement Data from Green Reports

Data analysis was performed by compiling basic property-level information with data from the Green Assessment® or Green Assessment Plus® (both Green Reports). Basic property-level information is provided by Optigo® lenders during loan origination and includes data such as state, county, year built and number of units.

## Green Reports

The Green Assessment is a report meeting the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Level I standard with certain additional requirements including the analysis of water performance at the property, the reporting of Portfolio Manager metrics and documentation of existing property conditions. It also includes cost and savings calculations provided through simplified modeling and the use of industry-recognized formulas and standards. The Green Assessment Plus meets all these requirements but also aligns with the ASHRAE Level II protocol, which increases the level of due diligence and analysis required.

The Green Reports are prepared by consultants selected by Optigo lenders and must meet Freddie Mac's qualification requirements (Green Consultants), including having an understanding of the ASHRAE standards and an industry-recognized certification demonstrating proficiency in energy and water audits.

Green Consultants collect a 12-month period of historical utility consumption data for the whole property (common and individual tenant areas) from the property owner and evaluate the building conditions and

the performance of equipment, fixtures and systems on the energy and water consumption at the property through rigorous property inspections. If any of the whole-property data is unavailable, Green Consultants must collect all common area and at least 10% of tenant-consumption data. Most commonly, the tenant-paid consumption is unavailable, and, in these instances, Green Consultants will make every effort to obtain the data from local utilities, typically requesting aggregated data. If utility providers do not provide the requested data or do not provide it within the required timeline, Freddie Mac will allow Green Consultants to estimate the missing consumption data based on their experience with other buildings of similar use, size, occupancy, construction and location.

Green Consultants input the historical utility consumption data into ENERGY STAR Portfolio Manager (Portfolio Manager), a free online tool maintained by the EPA. Portfolio Manager produces the ENERGY STAR score, Energy Use Intensity, Water Score, Water Use Intensity, and Greenhouse Gas Emissions of the property. Freddie Mac is given access to this data in Portfolio Manager.

Based on the evaluation of the current property conditions and the historical utility consumption data, Green Consultants create a baseline for property performance and make recommendations for energy and water conservation measures (EWCM). Borrowers choose which EWCM to implement to achieve increased energy and water efficiency at their property. Green Consultants document all results in the Form 1106 and deliver completed Green Reports to Optigo lenders who transmit them to Freddie Mac during the loan due diligence process. We collect the data contained within the Form 1106 through an automated process and use it for our analysis.

## Data Quality Framework

Beginning in 2018, Freddie Mac Multifamily engaged WegoWise by Measurabl (WegoWise) in a series of projects to create a framework for our data collection and reporting practices.

Our initial engagement with WegoWise was set up to analyze, at the time, a 10% sample of the overall portfolio to understand the quality of the data received from the Green Reports. That analysis focused solely on historical consumption data provided by the borrowers and entered in Portfolio Manager by the Green Consultants. WegoWise used their own internal data collection practices, developed through its extensive experience benchmarking over 70,000 buildings, to create a data quality assessment framework. Using the framework to evaluate the sample set of properties, the data quality assessment found the data acceptable for ongoing savings analysis and provided recommendations for data quality improvements.

In response to the recommendations made from the initial data quality assessment, Freddie Mac Multifamily worked with WegoWise to develop a Benchmarking Data Collection Best Practices Guide to create more consistent data collection throughout the entire loan process and to produce higher quality data and reports. We have worked to implement these best practices through adjustments to our loan agreements, requiring the collection of both energy and water data, regardless of the type of improvements (energy or water) being implemented at the property. We also require the collection of a minimum of 10% of tenant data. For loans originated in 2019 and beyond, we require the borrower to engage a third-party data collection firm to collect, input and monitor the Benchmarking Data. We also provided general and individualized training to our servicers along with resources such as on-demand instructional videos for the annual reporting process.

## Benchmarking Data

On-going utility consumption data is provided annually by either the borrower or a hired third-party consultant (Benchmarking Data Consultant). The data is input into Portfolio Manager, which produces the

ENERGY STAR score, Energy Use Intensity, Water Score, Water Use Intensity, and Greenhouse Gas Emissions of the property. Our aim was to obtain the highest quality Benchmarking Data which would include at least 12 months of whole-property consumption data, provided in monthly increments for each utility type (electric, gas, water, etc.). However, the Benchmarking Data may not always represent the entire property's consumption. For instance, if only owner-paid electric usage was provided, the energy consumption data would only represent owner-paid consumption and not consumption across the entire property. The data received for water is generally assumed to be whole-building data as most properties are master-metered. Our Benchmarking Data Collection Guide provides the best practices for collecting the data and alternative approaches when the best practices cannot be followed.

Calculations for average utility consumption reductions were made using a year over year comparison of the baseline data and the latest year of Benchmarking Data. Properties were included in the calculation if Benchmarking Data was available and if the retrofit had been reported as complete prior to the latest year of Benchmarking Data. These savings figures do not account for weather, occupancy, or include any additional analysis that could affect actual savings at a property.

Data challenges exist in multifamily properties that may impact the results of any savings analysis. Challenges impacting reporting included:

1. Data challenges:
  - a. Availability of tenant data
  - b. Lack of reported data
  - c. Not enough post-retrofit data
  - d. Inaccurate estimated data (baseline or post-retrofit data)
2. Rate increases or fixed costs remain high
3. Equipment issues: Incorrectly installed, tenants' removal/tampering
4. Usage variations: Behavioral or occupancy changes at the property, new amenity installed, energy/water spikes

We have worked to improve the challenges inherent in collecting and reporting multifamily utility data as described in the Data Quality Framework section. While we have seen improvements each year, we will continue evaluating and implementing ways in which we can improve these results.