



# 2021 Report: Refinance Eligible By Wisconsin Community & Green Mortgage Impact

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## **Brief:**

This report is to highlight and approximate a number of residents in Wisconsin, by municipality, that are eligible to refinance their residential home's mortgage during this period of low interest rates. While millions have refined their home already, what has been referred to as a "refinance boom", we find that 197,000 more in Wisconsin have not yet taken advantage.

Furthermore, this report also documents the impact to homeowners and local economies if those refinancing were to opt for a "Green Mortgage" instead of a conventional one. Green mortgages - offered by Fannie Mae, Freddie Mac, the VA & FHA – allow homebuyers and those refinancing to finance additional energy-efficiency improvements to the property. Doing so can allow homeowners to continue to reduce their monthly expenses – both in terms of mortgage payments but also in utility bills – while also cutting carbon emissions through increases in energy efficiency and additions of renewable energy.



## About Green Homeowners United

Green Homeowners United is an energy assessment and economic modeling firm dedicated to reducing carbon emissions in the housing sector in the Midwest. Green Homeowners United assists homeowners and homebuyers in understanding financing options that can allow them to cut carbon emissions and reduce utility bills, often at no cost. Green Homeowners United are *Focus on Energy* Trade Allies, credentialed Building Analysts within the *Building Performance Institute*, authorized to provide Department of Energy *Home Energy Scores*, and specialize in residential economic and energy analysis.

## Who are eligible to refinance?

According to data from Black Knight Financial, more than 13 million Americans are “high-quality” “refinance-eligible” homeowners nationwide that are in a position to refinance with sizable savings.<sup>ii</sup> Black Knight Financial defines high quality candidates as “a 30-year mortgage holder with a maximum 80% loan-to-value ratio and credit scores of 720 or higher”<sup>iii</sup>. Previous research by Black Knight had shown that 1.21% of all refinance eligible candidates reside in Wisconsin, with an average monthly savings potential of \$226 per month per home.<sup>iv</sup>

This does not define the entire potential pool of those eligible to refinance their homes to reduce mortgage interest rate. According to Housing Wire: “Disregarding Black Knight’s eligibility criteria, there are almost 19 million 30-year mortgage-holders who are ‘in the money’ with current interest rates at least 0.75% above today’s rate”.<sup>v</sup>

Based on available data, controlling for recent refinances since data was released based on recent refinance momentum, and controlling for error to avoid over-estimation:

**Table 1: Statewide Refinancing Opportunity**

<b>Eligible to Refinance Mortgage</b>	197,600 Wisconsin homeowners* * - current interest rates at least 0.75% above recent rates
<b>Average Savings</b>	\$226 per month* * - between utility bills & mortgage

## What are Green Mortgages?

“Green Mortgages” refer to a collection of energy-efficient mortgage products that can be offered by mortgage lenders. These include, but are not limited to: Fannie Mae’s *Homestyle Energy* mortgage<sup>vi</sup>, Freddie Mac’s *GreenCHOICE* mortgage<sup>vii</sup>, the Veteran Administration’s *Energy Efficient* mortgage<sup>viii</sup> and the Federal Housing Administration’s (FHA) *Energy Efficient Mortgage Loan* program.<sup>ix</sup> Additionally, for homeowners with suitable equity, cash-out refinances can allow homeowners to finance large energy upgrades such as solar panels together with other projects. We shall refer to these programs that allow homeowners to add energy-efficiency upgrades that cut carbon emissions and reduce utility bills collectively as “green mortgages”.



Collectively, these Green Mortgages allow homeowners who are refinancing (and homebuyers when purchasing for all versions except a cash-out refinance) incorporate the cost of energy efficiency and renewable energy improvements into the first mortgage at the same term and interest rate. Generally, up to 15% of the value of the home is allowed for financing specifically energy-saving improvements, under the concept that extra costs to the homeowner incorporated into the mortgage are made up for by similar reductions on monthly utility payments (electric, gas, water & sewer).

Green mortgages thus represent one of the most effective ways to help homeowners finance large scale carbon-reducing improvements to one's home, be it solar panels or major weatherization projects, as they benefit from low interest rates and long terms. This serves the dual purpose of making it possible for monthly cost to often be less than monthly savings from improvements, and to help homeowners do one of the most important things to cut emissions.

## **Residential Energy Efficiency and Carbon Emissions**

Based on research by the National Resource Defense Council, upgrading homes to be energy efficiency is the single biggest step society can take to reduce carbon emissions substantially.<sup>x</sup> This is even in excess of replacing cars on the road with electric alternatives. This makes actions, and programs, dedicated to helping residents make their homes more energy efficient one of the most important tasks at hand to address climate change.

While residential energy efficiency encompasses improvements such as new HVAC systems, insulation, improved lighting and more, it does not even include all the means by which homes can reduce emissions. The NRDC study also found that residential renewable energy and residential electrification would further cut emissions, and we can demonstrated that green mortgages can include these improvements.

Residential renewable improvements include solar photovoltaic panels, geothermal heating/cooling systems, and in rare cases, wind turbines. Residential electrification improvements, helping homes reduce their reliance on gas-powered systems, include replacing oil or propane water heaters with heat pump hybrid electric water heaters, as well as replacing central air conditioner systems with dual fuel air-sourced heat pumps that can reduce natural gas furnace use during key times of the season by also producing heat.



**Table 2: Green Mortgage Opportunity, by Metropolitan Statistical Area**

<b>MSA</b>	<b>Average Home Value*</b>	<b>Average Green Financing Amount**</b>
Appleton Metro	\$209,092	Up to \$31,364 per home for energy improvements
Eau Claire Metro	\$211,704	\$31,756
Fond du Lac Metro	\$155,527	\$23,329
Green Bay Metropolitan Area	\$205,806	\$30,871
Janesville-Beloit Metro	\$179,591	\$26,939
La Crosse-Onalaska Metro	\$206,557	\$30,984
Madison Metro	\$311,633	\$46,745
Milwaukee-Waukesha-West Allis Metro	\$224,157	\$33,624
Oshkosh-Neenah Metro	\$172,185	\$25,828
Racine Metro	\$181,375	\$27,206
Sheboygan Metro	\$176,031	\$26,405
Wausau Metro	\$185,907	\$27,886

\* - based on Zillow home value estimates gathered on April 21, 2021

\*\* - based on maximum allowed 15% of the value of the home limit for energy improvements as stipulated in Fannie Mae Homestyle Energy and Freddie Mac Green Choice mortgage

**Table 3: Eligible Upgrades from Green Mortgage That Can Cut Utility Costs**

<i>Type of Utility Bill</i>	<i>Examples of Home Upgrades That Can be Financed by Green Mortgages and Reduce Utility Bills</i>
Electric	Solar panels, LED light bulbs, replacing electric water heaters
Natural Gas	Air sealing, attic & basement insulation, furnace upgrade
Water/Sewer	Ultra-high-efficiency toilets, showerheads and faucets
Propane/Fuel Oil	Switching to heat pump space and water heating



**Table 4: Carbon Emissions Impact if 10% of All Refinance-Eligible Homes in Wisconsin Adding Solar Panels Through a Green Mortgage**

<i>Comparable Impact</i>	Number
Number of cars taken off the road per year	25,214 cars
Number of acres of forest having same impact	152,418 acres
Trees planted	1,929,825
Tanker trucks of gasoline removed from road	1,545

Source: [EPA](#)

### **Why the Green Refinance market may actually be larger than predicted**

The above research shows the number of residents in Wisconsin who are determined eligible to refinance based on mortgage interest rates 0.75% or higher than recent available rates. This is based on rules of thumb that suggest a new interest rate on a home should be at least 0.5% lower than the current to make refinancing cost effective.<sup>xi</sup> The increased savings thus cover the added cost of closing costs and related fees charge to undertake the refinance.

However, refinancing a home through a green mortgage, by its very design, increases the mortgage payments to cover the cost of new energy improvement to the property and reduce the impact of this new cost by equal or greater reductions to collective utility bills. Thus, so long as the new interest rate on a green mortgage is even slightly less than the current home mortgage interest rate, and the costs of the energy upgrades plus closing costs is still lower than the anticipated utility savings, then homeowners may still find it advantageous to refinance into a green mortgage for its potential to unlock access to low-interest, long term financing for upgrades such as solar panels they cannot find elsewhere. As such, there is every reason to conclude the market for green refinancing is even larger than modeled.

### **Bringing refinance data to the local level**

To assist policymakers, lenders and the residential real estate sector in helping homeowners understand the opportunities both in refinancing and green refinancing specifically, having local data can be valuable. Real estate, as well as the sectors that service it including construction and financial services, are often sized at the metropolitan level. Where home values are impacted by surrounding communities and services are priced based on larger markets than in a single town alone.

Our analysis of the local size of the refinance eligible market takes the total Wisconsin refinance eligible population, and allocates them to communities based on American Community Survey data on local mortgage holder data.<sup>xii</sup> In this way we better control for communities that have a larger or smaller share of mortgaged single-family homes compared to either rental properties or homes without mortgages.



**Table 5: Refinance potential and green refinance opportunity in select Wisconsin major counties**

<b>County</b>	<b>Approximate number of homeowners still eligible to refinance their home.*</b>	<b>Average amount per home a green mortgage could provide to upgrade a home's energy efficiency.**</b>
Brown	8,689 homeowners	\$31,271 available for green improvements per home
Dane	18,124	\$47,639
Douglas	1,469	\$23,169
Eau Claire	3,435	\$31,318
Fond du Lac	3,549	\$23,116
Grant	1,482	\$21,523
Kenosha	5,602	\$32,442
La Crosse	3,562	\$29,998
Marathon	4,665	\$27,589
Milwaukee	24,549	\$25,605
Oneida	1,406	\$30,013
Outagamie	6,732	\$32,051
Ozaukee	3,552	\$48,125
Portage	2,404	\$28,816
Racine	6,767	\$26,982
Rock	5,766	\$26,249
Sauk	2,229	\$33,070
Sheboygan	4,149	\$25,863
Washington	5,618	\$41,386
Waukesha	16,097	\$48,297
Winnebago	5,685	\$25,683
Wood	2,565	\$20,403

\* - calculated using state refinance eligibility figures and local Census data on mortgage holders

\*\* - based on local data on average home value and the amount of eligible financing for both the Fannie Mae Homestyle Energy as well as Freddie Mac Green Choice mortgage products.



Additionally, within metropolitan statistical areas and counties, the impact of green mortgage and refinancing can vary, as exemplified by Table 6 showing results with Milwaukee-Waukesha-West Allis Metropolitan Statistical Area communities:

**Figure 6: Refinance potential and green refinance opportunity in select Southeastern Wisconsin communities**

<b>Municipality</b>	Approximate number of homeowners still eligible to refinance their home.*	Average amount per home a green mortgage could provide to upgrade a home's energy efficiency.**
<b>Milwaukee County</b>	24,549 homeowners	Up to \$25,605 available for green improvements per home
<b>Waukesha County</b>	16,097	\$48,297
<b>Racine County</b>	6,767	\$26,982
<b>Kenosha County</b>	5,602	\$32,442
<b>Ozaukee County</b>	3,552	\$48,125
Bayside, <i>Village of</i>	129	\$58,704
Big Bend, <i>Village of</i>	48	\$36,879
Brookfield, <i>City of</i>	1,252	\$55,179
Brown Deer, <i>Village of</i>	409	\$28,211
Burlington, <i>City of</i>	302	\$33,045
Butler, <i>Village of</i>	42	\$27,360
Cedarburg, <i>City of</i>	356	\$54,180
Cudahy, <i>City of</i>	400	\$27,155
Delafield, <i>City of</i>	232	\$76,248
Elm Grove, <i>Village of</i>	193	\$67,638
Fox Point, <i>Village of</i>	243	\$57,028
Franklin, <i>City of</i>	1,112	\$46,338
Germantown, <i>Village of</i>	843	\$48,496
Glendale, <i>City of</i>	396	\$35,468
Grafton, <i>Village of</i>	380	\$44,080
Greendale, <i>Village of</i>	380	\$40,789
Greenfield, <i>City of</i>	912	\$32,296
Hales Corners, <i>Village of</i>	184	\$40,522
Hartland, <i>Village of</i>	246	\$51,572
Kenosha, <i>City of</i>	2,253	\$27,678
Menomonee Falls, <i>Village</i>	1,179	\$44,021
Mequon, <i>City of</i>	930	\$68,525
Milwaukee, <i>City of</i>	10,016	\$22,178
Mukwonago, <i>Village of</i>	251	\$54,776
Muskego, <i>City of</i>	860	\$54,776



New Berlin, <i>City of</i>	1274	\$47,904
Oak Creek, <i>City of</i>	941	\$42,568
Oconomowoc, <i>City of</i>	557	\$51,648
Pewaukee, <i>City of</i>	492	\$52,461
Port Washington, <i>City of</i>	378	\$36,976
Racine, <i>City of</i>	1,615	\$19,950
River Hills, <i>Village of</i>	54	\$105,632
Saukville, <i>Village of</i>	128	\$39,011
Shorewood, <i>Village of</i>	327	\$42,723
South Milwaukee, <i>City of</i>	529	\$28,374
St. Francis, <i>City of</i>	229	\$27,187
Sturtevant, <i>City of</i>	149	\$26,414
Sussex, <i>Village of</i>	346	\$52,487
Thiensville, <i>Village of</i>	102	\$44,097
Waukesha, <i>City of</i>	1,930	\$39,190
Wauwatosa, <i>City of</i>	1,392	\$41,771
West Allis, <i>City of</i>	1,524	\$26,327
West Bend, <i>City of</i>	963	\$34,164
West Milwaukee, <i>Village of</i>	85	\$23,987
Whitefish Bay, <i>Village of</i>	457	\$70,422

\* - calculated using state refinance eligibility figures and local Census data on mortgage holders

\*\* - based on local data on average home value and the amount of eligible financing for both the Fannie Mae Homestyle Energy as well as Freddie Mac Green Choice mortgage products.

#### **Data on other communities available upon request**

## **Conclusion**

Research on the refinance eligible within Wisconsin reveals that a major opportunity to help home-owning Wisconsinites with a mortgage reduce their monthly expenses is available. And this benefit could further contribute to the state's carbon emissions reduction goals if homeowners are encouraged – by lenders, policymakers or other housing experts – to consider green mortgages when refinancing or purchasing.

Currently, most Wisconsin lenders do not offer green mortgages, Fannie Mae or otherwise. Yet they are not prevented from doing so. Fannie Mae and Freddie Mac do not require special permission to offer green mortgages, and both provide \$500 lender credits to ensure that residents are able to keep interest rates at conventional levels even with increased lending for energy improvements.

Lenders such as Associated Bank, Merchant's Bank, One Community Bank and more are already helping residents around the state cut emissions and reduce expenses through green mortgage refinances. This research suggests thousands could still enroll through a program that helps homeowner, lenders and the planet alike.





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- <sup>i</sup> <https://www.marketplace.org/2021/03/22/refinancing-boom-could-be-slowing-down-for-now-mortgage-rates/>
- <sup>ii</sup> <https://finance.yahoo.com/news/mortgage-rates-drop-174112892.html>
- <sup>iii</sup> <https://www.housingwire.com/articles/about-7m-refi-candidates-missed-the-forever-rate-boat/>
- <sup>iv</sup> <https://flo.uri.sh/visualisation/3841685/embed?auto=1>
- <sup>v</sup> <https://www.housingwire.com/articles/about-7m-refi-candidates-missed-the-forever-rate-boat/>
- <sup>vi</sup> <https://singlefamily.fanniemae.com/originating-underwriting/mortgage-products/homestyle-energy-mortgage>
- <sup>vii</sup> <https://sf.freddiemac.com/working-with-us/origination-underwriting/mortgage-products/greenchoice-mortgages>
- <sup>viii</sup> <https://va.org/energy-efficient-va-home-loans/>
- <sup>ix</sup> [https://www.hud.gov/program\\_offices/housing/sfh/eem/energy-r](https://www.hud.gov/program_offices/housing/sfh/eem/energy-r)
- <sup>x</sup> <https://www.nrdc.org/experts/khalil-shahyd/residential-energy-efficiency-largest-source-co2-reduction-potential>
- <sup>xi</sup> <https://abcnews.go.com/Business/Retirement/mortgage-refinancing-rule-5s/story?id=10649069>
- <sup>xii</sup> <https://www.census.gov/acs/www/data/data-tables-and-tools/data-profiles/>

