



GBR

Green Building Registry®

The largest single-source of building performance data in the US
us.greenbuildingregistry.com

A wholly owned and self-funded initiative of
Earth Advantage®, a 501(c)(3) nonprofit

About Earth Advantage

HELPING TO CREATE AN
INFORMED AND HUMANE
RESIDENTIAL REAL ESTATE
MARKETPLACE

— OUR PURPOSE



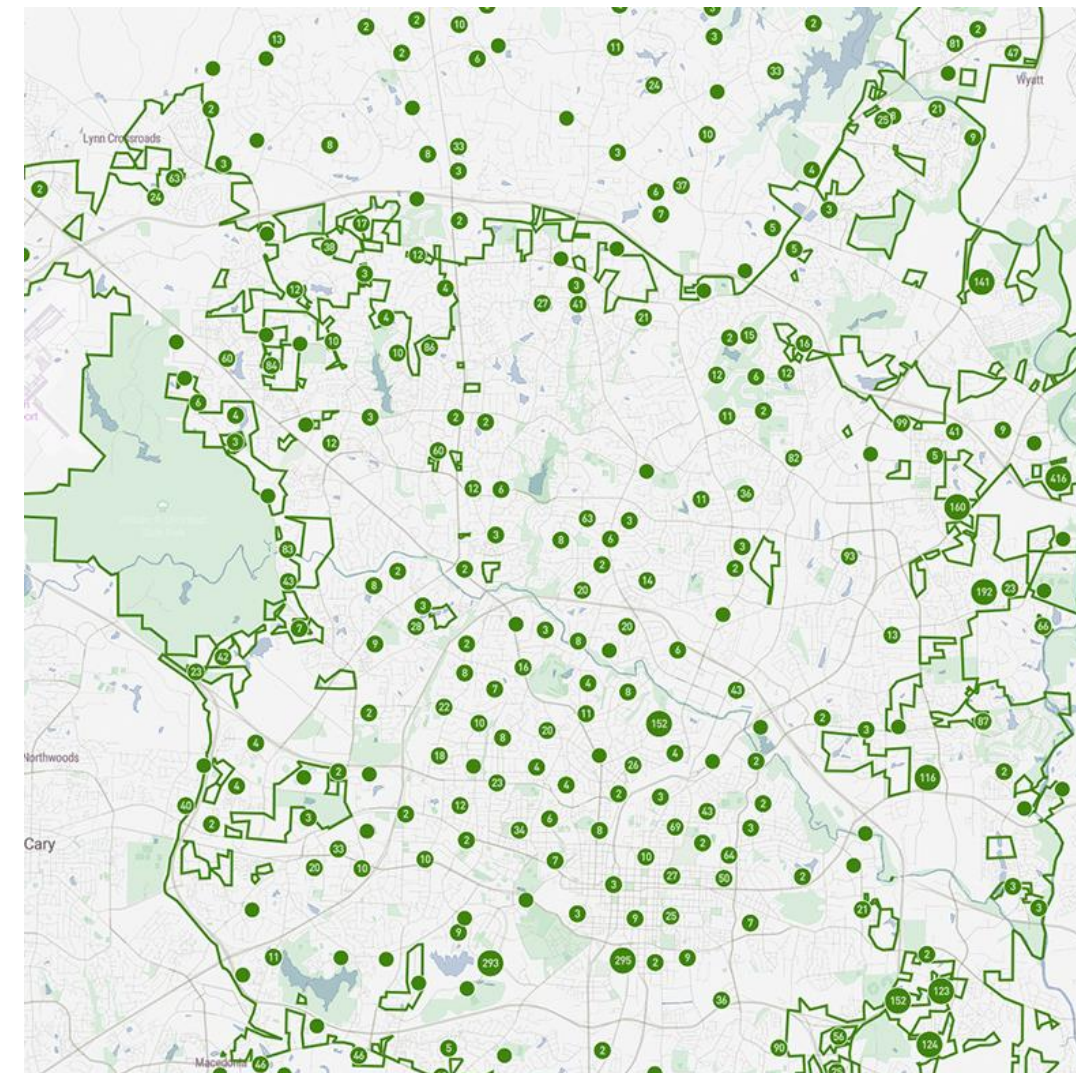
earth
advantage.®

Our Work



Home Standards

Delivering the use of credible, nationally-applicable standards that document the climate and health impacts of a home.



Home Data

Enabling the disclosure of verified climate-related information in residential real estate transactions.



Climate Justice

Addressing climate vulnerability through direct services, advocacy, and finance system reform.



Training

Advancing the development of a knowledgeable and diverse workforce to help build, remodel, sell, and lease climate-friendly homes.



GBR is focused on market transformation by ensuring home performance data is in all real estate listings.

About Green Building Registry® (GBR)

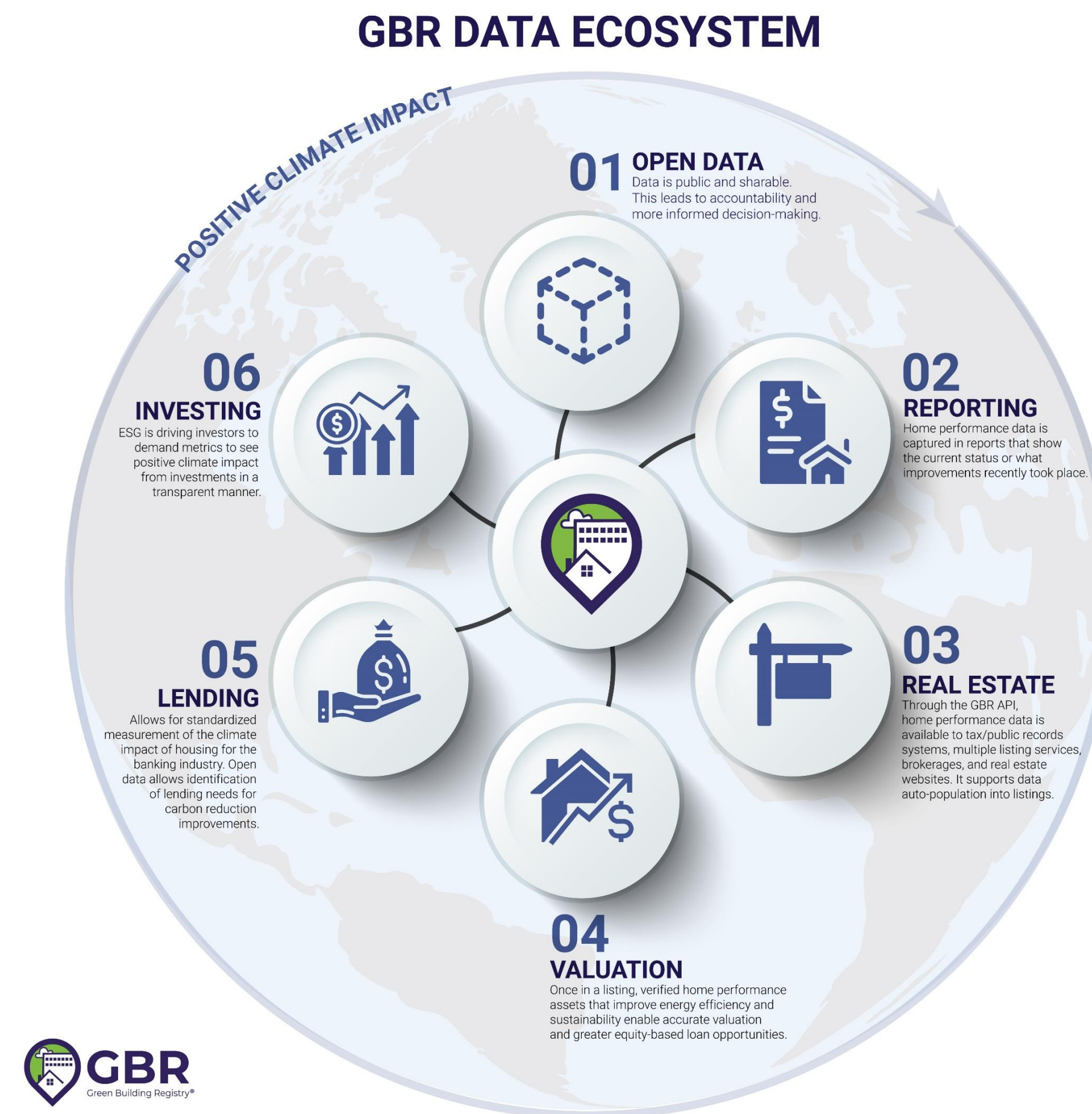
- Built in 2017 (SaaS for States, municipalities, utilities HES programs/policies)
- Provides VERIFIED building performance data to the real estate market – homeowners, real estate agents, appraisers, and lenders across the US
- Leading provider of this data in the US – API for Data Auto-population
- **2.8M+** Building Certifications (Mostly Residential SF) – Data aggregation began in 2020
- Multi-family, Commercial
- Annual Energy Cost Estimates, Energy Cost Estimate Source
- Appraisal Institute's Residential Green & Energy Efficient Addendum



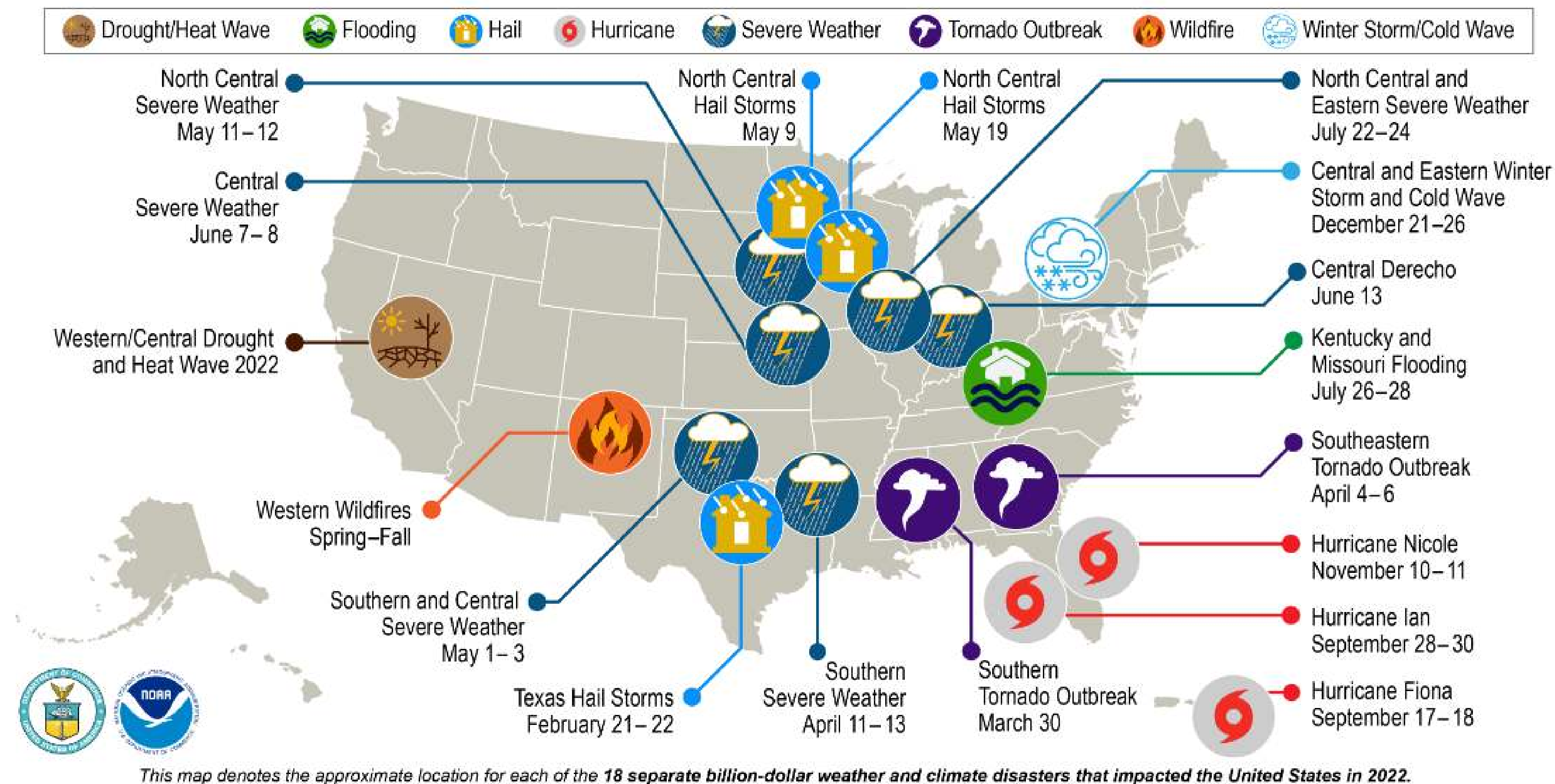
WHY DOES IT MATTER?

Factors Impacting Change

- Climate change – Carbon reduction goals, climate action plans (federal, state, municipal)
- Corporate Sustainability
- ESG Investing
- Green MBS
- Federal/Utility Incentive Programs
- Better Building Codes, Energy Labeling Mandates
- Consumer Demand
- MLS Demand for Data
- Data Automation – UAD Updates; Addenda going away



U.S. 2022 Billion-Dollar Weather and Climate Disasters



California Storm's Price Tag Estimated at 'Several Hundred Million' by FEMA

BY MEGHAN ROOS ON 1/19/23 AT 7:30 PM EST

[HTTPS://WWW.NEWSWEEK.COM/CALIFORNIA-WINTER-STORM-REPAIRS-PRICE-ESTIMATED-SEVERAL-HUNDRED-MILLION-FEMA-DEANNE-CRISWELL-1775159](https://www.newsweek.com/california-winter-storm-repairs-price-estimated-several-hundred-million-fema-deanne-criswell-1775159)

California: Wildfire Season Damages Powers Lines, Threatening Safety

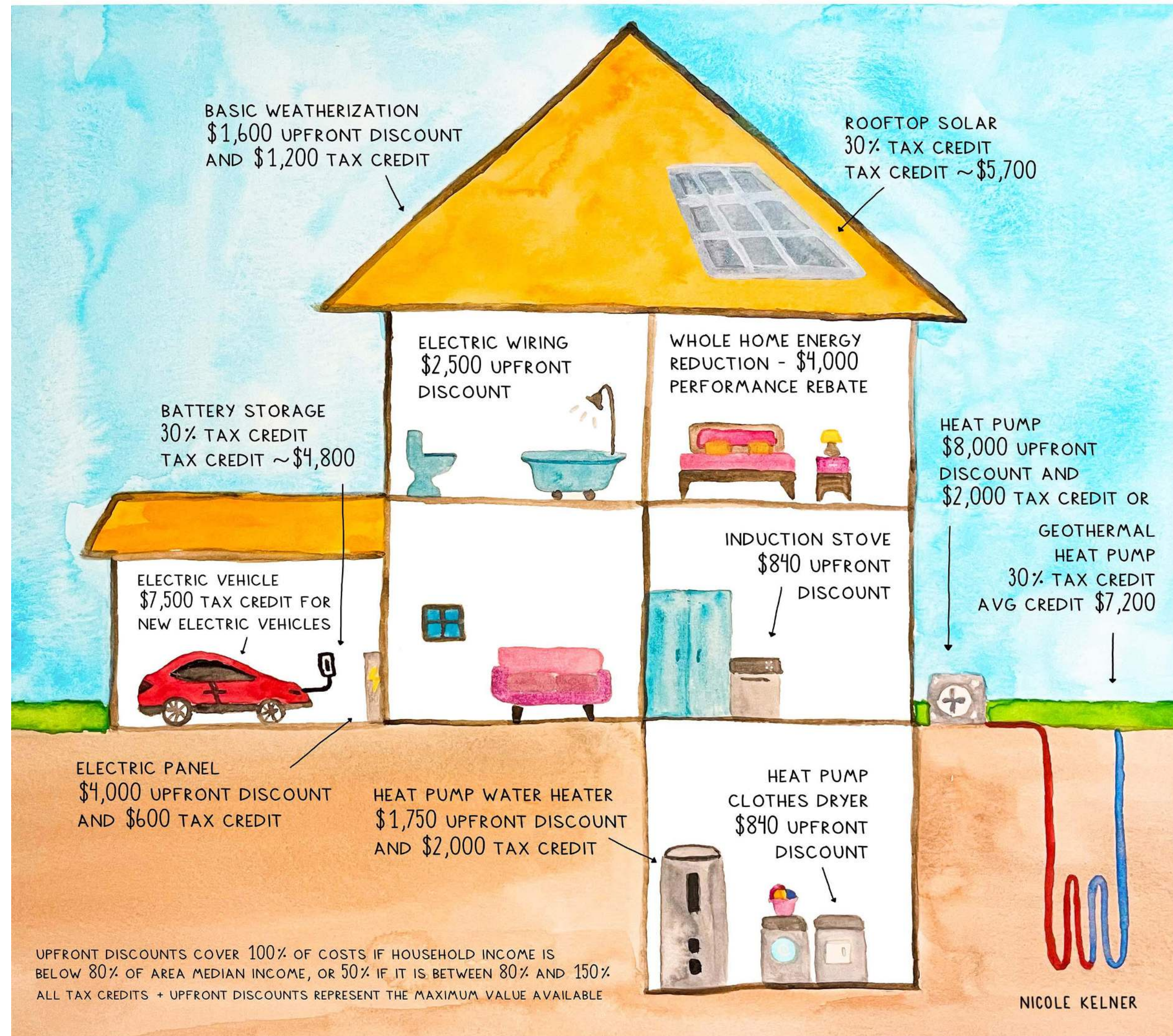
California's power lines spark major wildfires

[HTTPS://WWW.UNEARTHLABS.COM/BLOGS/THE-COST-OF-EXTREME-WEATHER-FOR-UTILITIES](https://www.unearthlabs.com/blogs/the-cost-of-extreme-weather-for-utilities)

Inflation Reduction Act Tax Incentives

POTENTIAL SAVINGS FROM THE IRA

BASED OFF A 2 PERSON HOME WITH A COMBINED INCOME OF \$150,000 IN NEW YORK CITY

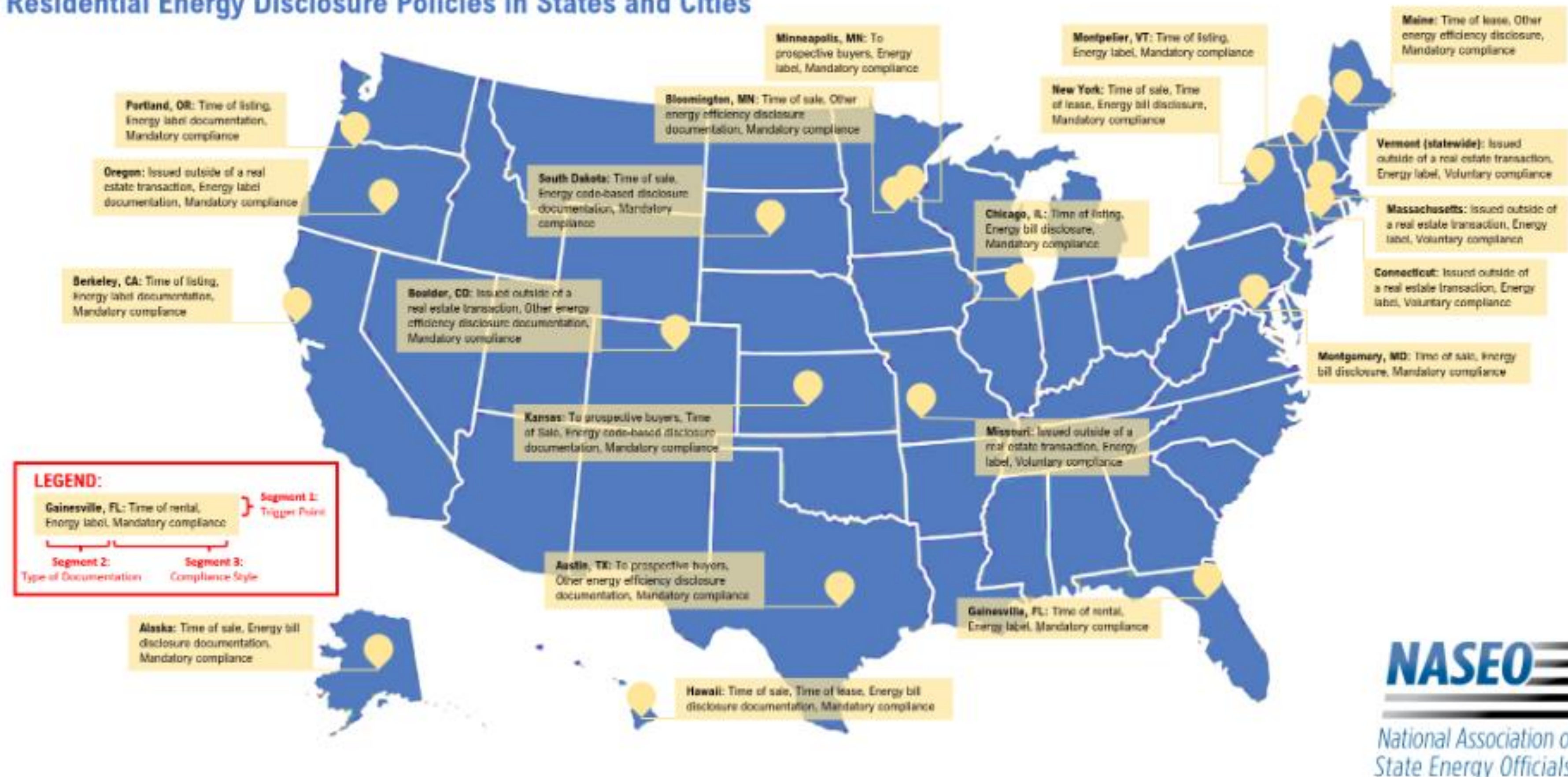


Energy Disclosure Policies

Residential Energy Disclosure Policies in States and Cities

(Last updated November 2022)

Residential Energy Disclosure Policies in States and Cities



PIEDMONT, CA ALSO HAS A MANDATORY TIME OF LISTING ENERGY DISCLOSURE POLICY USING HOME ENERGY SCORE
ANN ARBOR, MI JUST PASSED HES MANDATORY DISCLOSURE POLICY

**A WELL-FUNCTIONING REAL ESTATE
MARKET REQUIRES THAT THE
ASSETS OF A HOME BE RECOGNIZED
BY BUYERS AND ACCURATELY
VALUED BY APPRAISAL AND
LENDING PROFESSIONALS.**

MARKET RESEARCH

How Does Home Energy Score Affect Home Value and Mortgage Performance?

Margaret Pigman, Jeff Deason, Lawrence Berkeley National Laboratory

Nancy Wallace, Paulo Issler, Fisher Center for Real Estate & Urban Economics, UC Berkeley

- HES VARIABLES WERE ONLY STATISTICALLY SIGNIFICANT FOR SALES IN CITIES WHERE ASSESSMENT IS MANDATED AT POINT OF SALE.
 - An increase in one level of HES was associated with a 0.5% increase in purchase price
 - An increase of \$100 of estimated annual energy bills was associated with a 0.4% decrease in purchase price
- Potential buyers preferred energy efficient homes only when information about inefficient ones was also disclosed

A STUDY PUBLISHED BY THE NATIONAL ASSOCIATION OF HOME BUILDERS IN FEBRUARY 2021 NOTED THAT: “THE MAJORITY OF BUYERS PREFER TO GO GREEN WHEN PROVIDED THE OPTION”. INCLUDING THIS INFORMATION IN LISTINGS HELPS DELIVER A BUYER THAT OPTION.

[HTTPS://NAHBNOW.COM/2021/02/NAHB-ANNOUNCES-TOP-SUSTAINABLE-AND-GREEN-BUILDING-TRENDS-AND-FEATURES-IN-HOMES/](https://naahbnow.com/2021/02/naahb-announces-top-sustainable-and-green-building-trends-and-features-in-homes/)

MARKET RESEARCH

- **The Process Of High-Performance Home Valuation** – More importantly, the study described barriers in the D.C. marketplace that may be preventing homeowners and developers who have invested in energy efficiency during building or remodeling from receiving the value of their investments at the time of sale. https://www.buildingenergymagazine-digital.com/eneb/0218_fall_2018/MobilePagedArticle.action?articleId=1422004#articleId1422004
- **Adomatis – Overview of Studies on Green Features -** <http://www.adomatisappraisalservice.com/PublishedStudiesofGreenHomes.pdf>
- **FREDDIE MAC STUDY: HERS® HOMES SELL FOR MORE, HAVE BETTER LOAN PERFORMANCE AND HAVE BETTER MORTGAGE PROFILE STUDIES THAN COMPARABLE UNRATED HOMES** <HTTPS://WWW.RESNET.US/RATERS/FREDDIE-MAC-STUDY-HERS-HOMES-SELL-FOR-MORE-HAVE-BETTER-LOAN-PERFORMANCE-AND-HAVE-BETTER-MORTGAGE-PROFILE-STUDIES-THAN-COMPARABLE-UNRATED-HOMES/>

Important Information is Missing

Historically, information on a home such as:

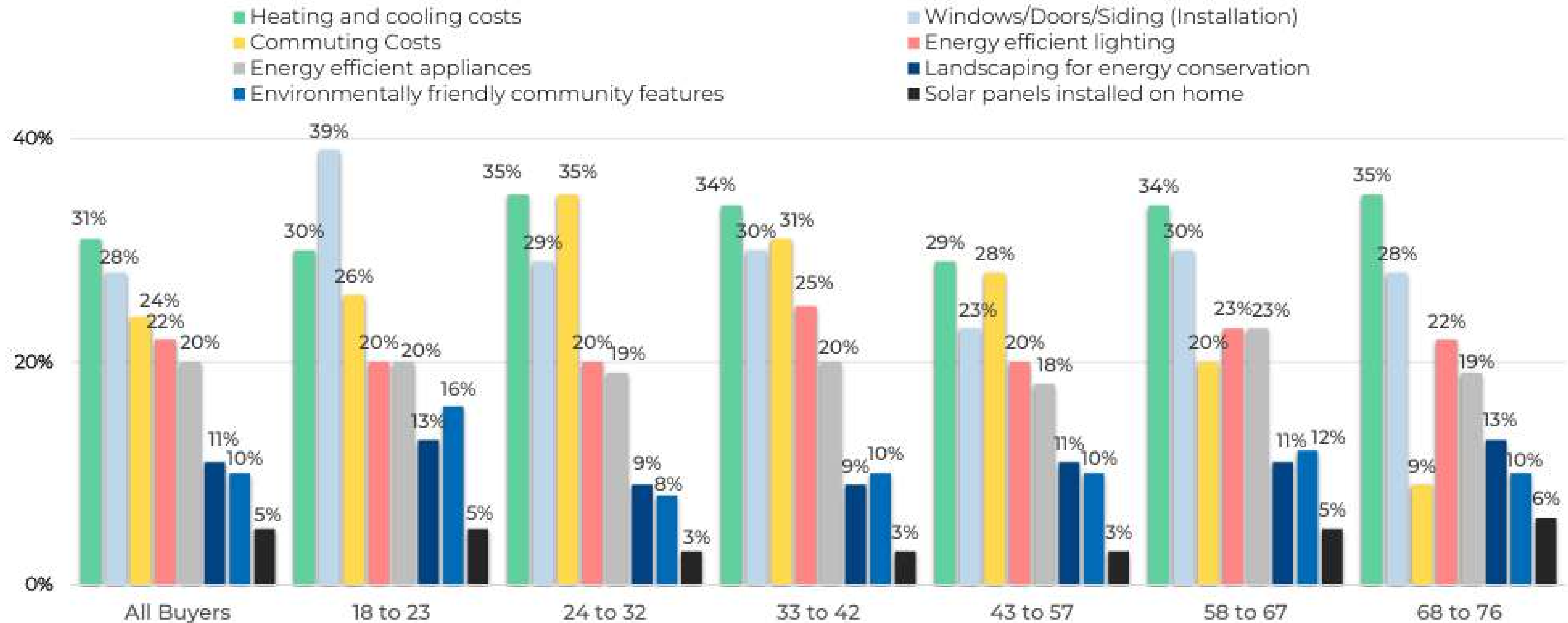
- The energy use
- Third party building certifications
- Power production (solar panels)

have not made it into the real estate transaction process.

ENVIRONMENTALLY FRIENDLY FEATURES CONSIDERED “VERY IMPORTANT”

Exhibit 2-10

(Percent of Respondents)

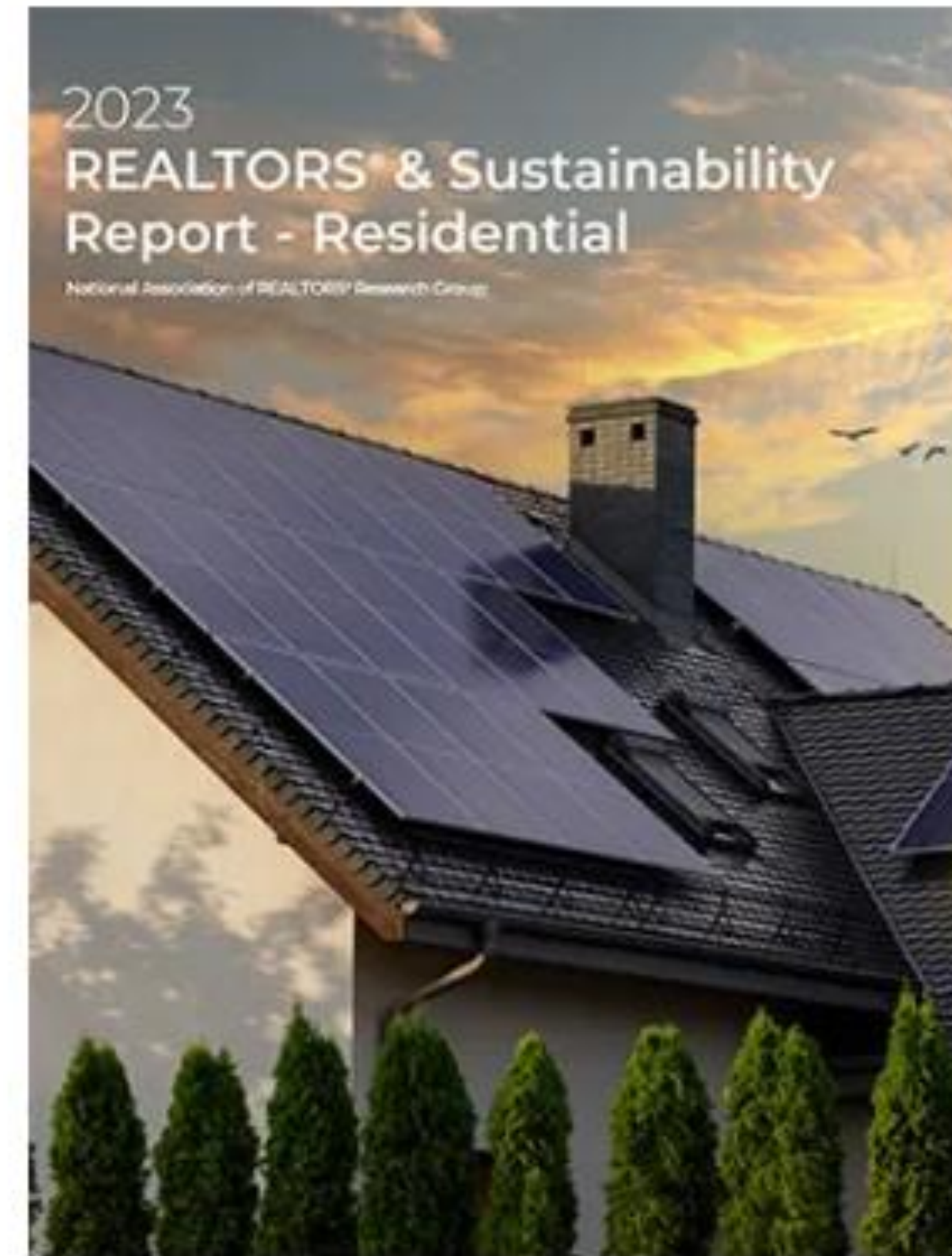


2023 NAR Home Buyers and Sellers Generational Trends

Highlights

In March 2023, NAR surveyed its members about sustainability issues facing the industry. Some of the findings are as follows:

- **32%** of respondents reported that their **MLS has green data fields**, and respondents typically used the green data fields to promote green features and energy information.
- **63%** said **energy efficiency promotion in listings** was very or somewhat **valuable**.
- **48%** of respondents found **clients** were at least somewhat **interested in sustainability**.
- **42%** of homes with **green** certifications spent **neither more nor less time on the market**.



63% “energy efficiency promotion in listings was very or somewhat valuable”

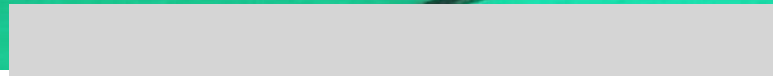


THE GREAT DISCONNECT

- **59% DON'T KNOW if their MLS has green data fields**
- **48% of respondents DON'T USE the green MLS data fields**

DEFINING THE DATA

PERFORMANCE DATA GREEN DATA



What is this 'performance' data?


Home Inspection vs. Home Performance

- Home Inspection – Condition & Safety
- Home Performance – How all aspects of the home work together as one comprehensive system (energy efficiency lens)





Green Building Registry® - A new national database of third-party certified buildings & solar data:

- Residential
- Multi family
- Commercial


Some solar data (regional)

 LABELING HOME PERFORMANCE

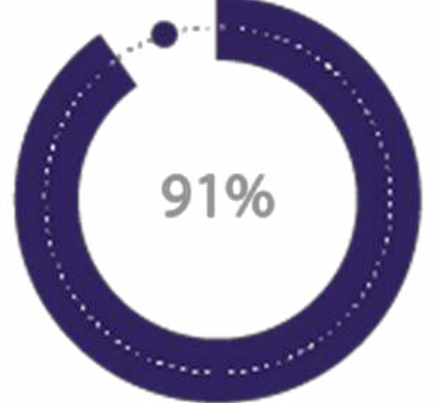
Common labels in our everyday lives that we trust



Organic food label Auto fuel economy label Nutrition label Rainforest Alliance




The ENERGY STAR® appliance label is the most recognized in-home label. A 2019 study revealed that over 90% of all consumers recognized this familiar energy use label.



Why isn't there a label for a home, the most expensive purchase you'll ever make?

There is! The Green Building Registry is a single data source for a variety of home performance information.
us.greenbuildingregistry.com



GBR Data

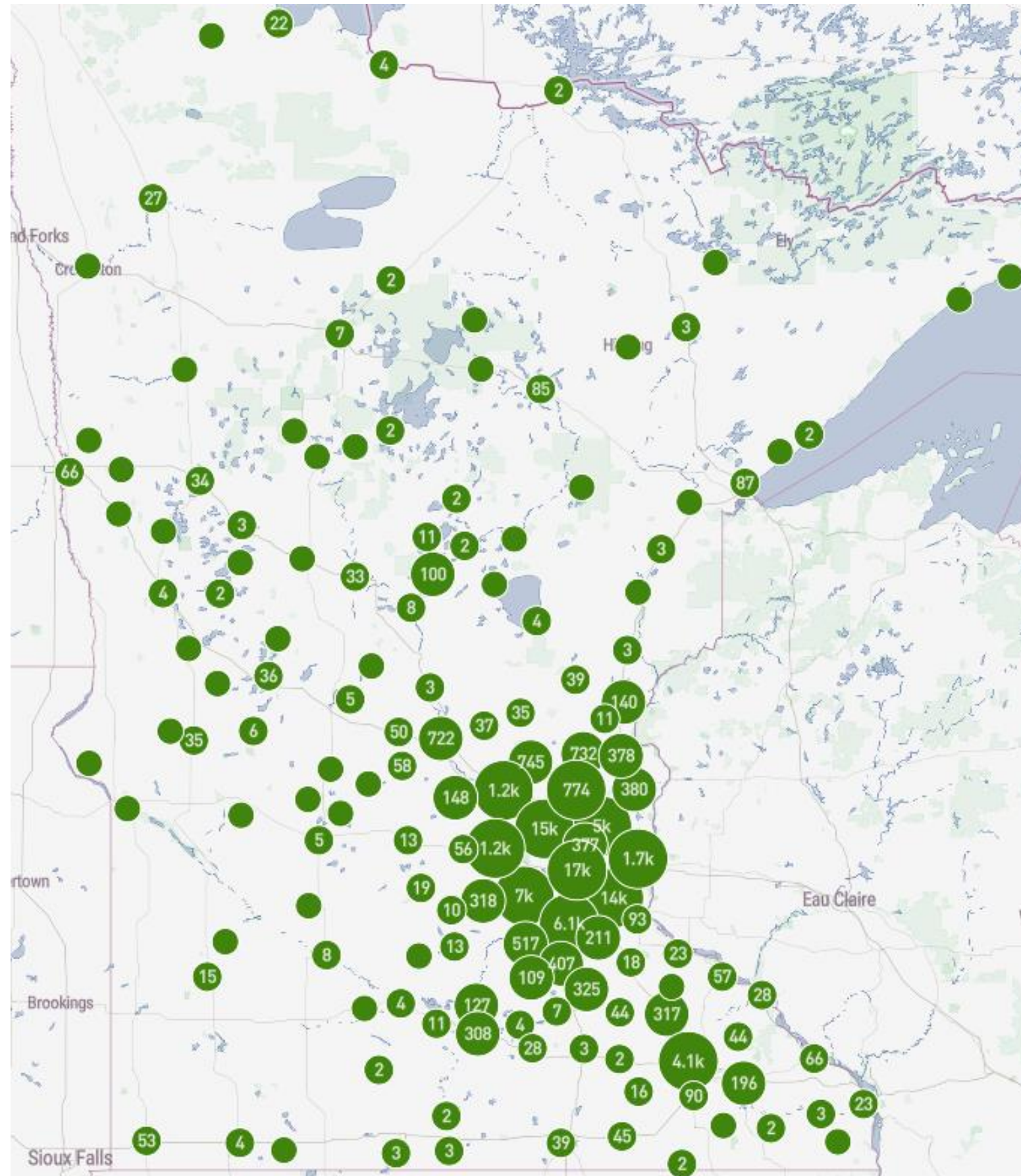
- ✓ Original Source – Direct from the Program
- ✓ Trained & Certified third-party building science professionals
- ✓ Quality Assurance, Verified by Program
- ✓ Address Verification
- ✓ Real Estate Standardized Data (RESO)
- ✗ Homeowner Reported
- ✓ Permission-Based

IT'S GOOD DATA

PROGRAM DATA & DATA FIELDS

GBR Data for Minnesota

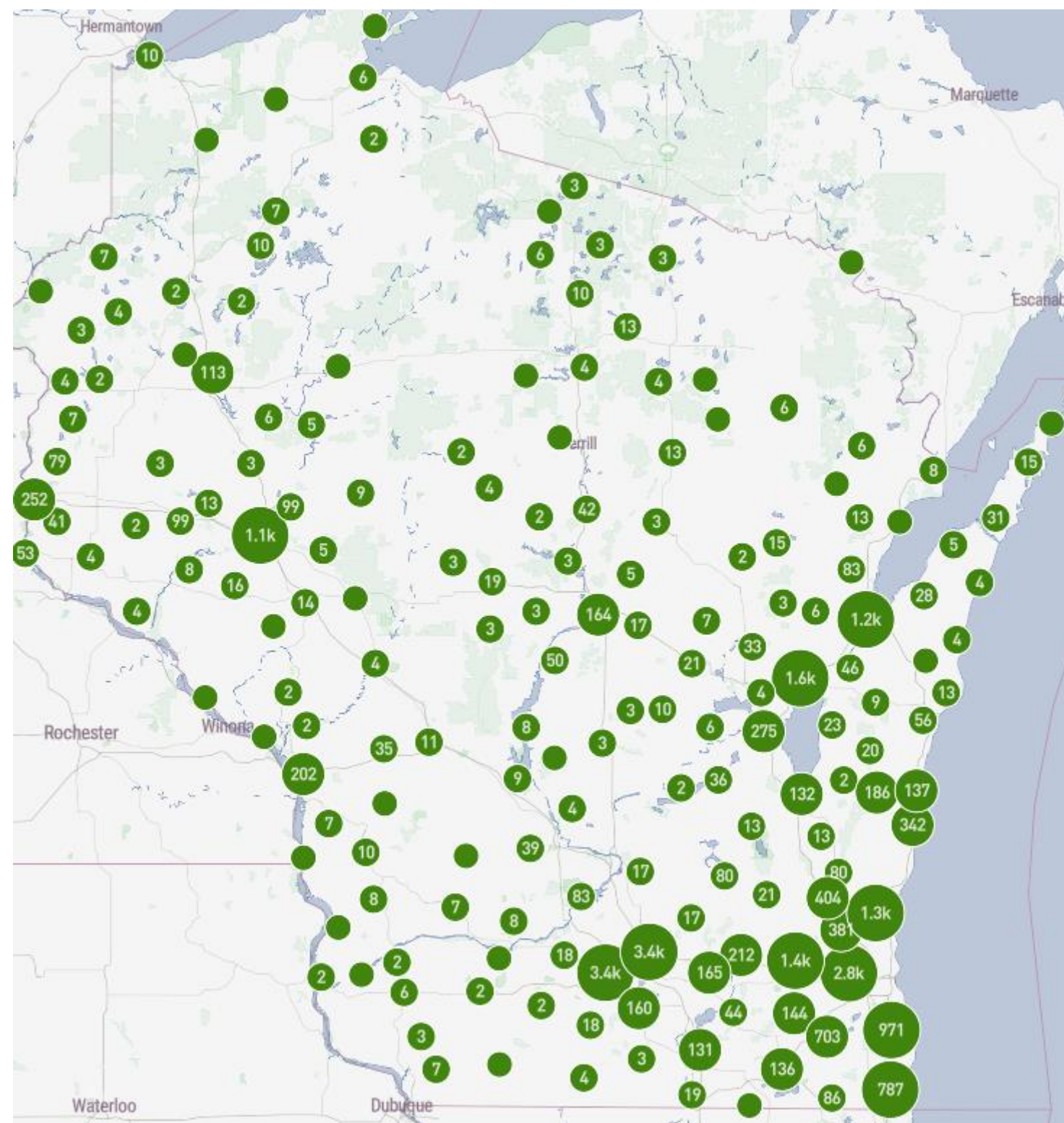
state	ENERGY STAR Certified Building	ENERGY STAR Certified New Construction(Resi)	GreenStar Homes Certification	HERS	HES	LEED	LEED for Homes	National Green Building Standard	Time of Sale Energy Score	DOE Zero Energy Ready Home	renewables	Total Records	Total Properties
MN	672	TBD	52	66304	14	163	47	5	14592	TBD	2	81851	81589



- ENERGY STAR Residential and DOE Zero Energy Ready Home data will become available after the contract is completed.

GBR Data for Wisconsin

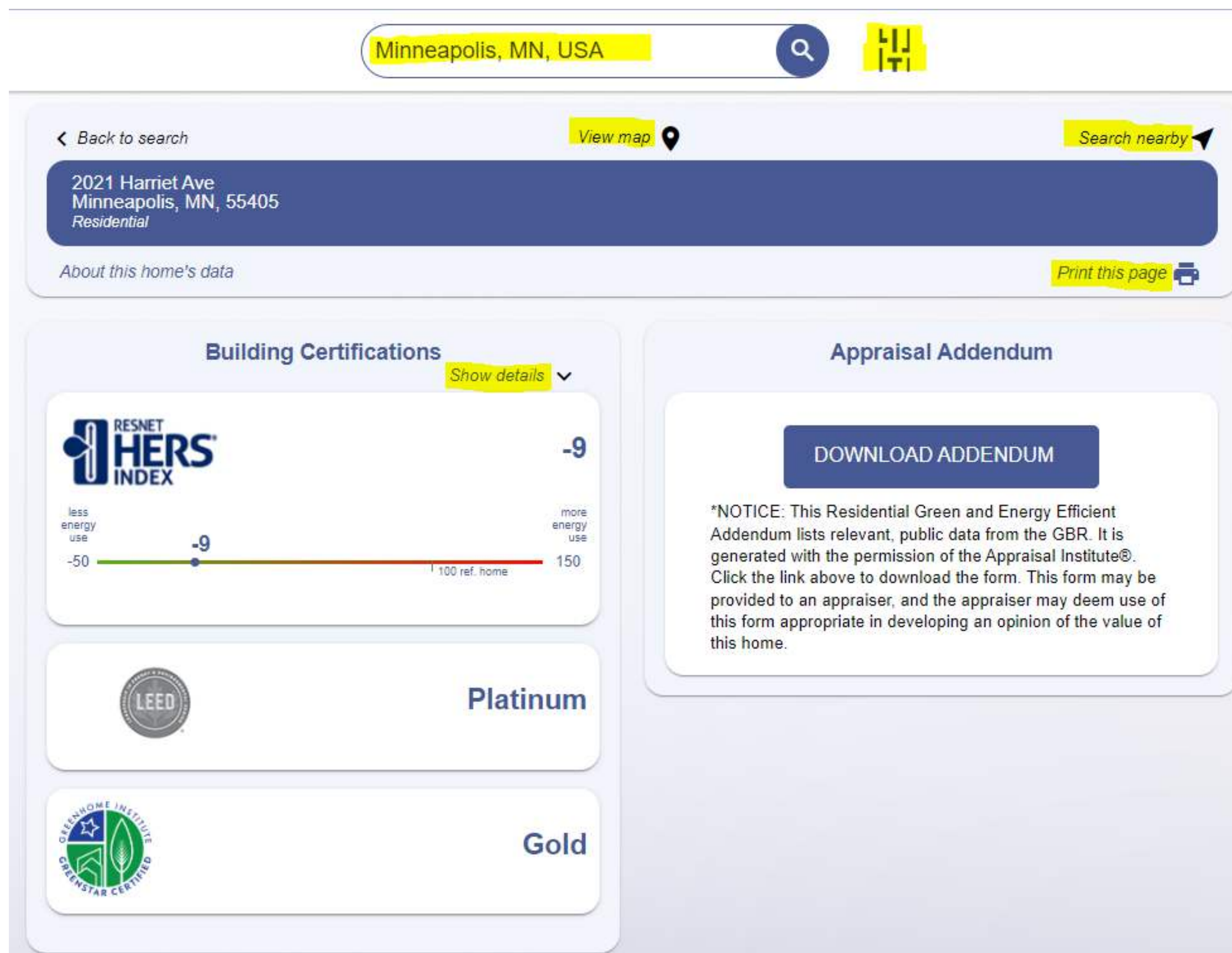
state	ENERGY STAR Certified Building	ENERGY STAR Certified New Construction(Resi)	HERS	HES	LEED	LEED for Homes	National Green Building Standard	DOE Zero Energy Ready Home	Total Records	Total Properties
WI	579	TBD	23296	1	187	17	50	TBD	24130	24082



GBR Data for NorthstarMLS System

- Data available for discovery on Green Building Registry website – us.greenbuildingregistry.com
- Available at the parcel (address) level
- Green Verification Data, Power Production (Solar PV), Report links
- Annual Energy Cost Estimate & Source
- Link to Appraisal Institute Residential Green & Energy Efficient Addendum
- Option to auto-populate this data into listings
 - Ensure accuracy
 - Improve listing input efficiency
 - GBR as the source of the data

Explore – us.greenbuildingregistry.com



- Property Research – Search public website by address, town, county
- Filter Results by property type, certification type, date and score (HERS, HES)
- View Property on a map
- Search nearby to learn what other nearby properties have green verifications
- Print the page to have another record of the data
- Show details to view the data details

Available Data Details



Platinum

Verification Type	LEED for Homes
Verifying Entity	US Green Building Council
Verification Date	2018-05-30
Verification Rating	Platinum
Data Source	US Green Building Council
Verification Key	1000065780
Version No.	LEED-HOMES v2008
Year Verified	2018



Gold

Verification Type	GreenStar Homes Certification
Verifying Entity	GreenHome Institute
Verification Date	2018-04-30
Verification Rating	Gold
Data Source	GreenHome Institute
Verification Key	20180430001
Version No.	1
Year Verified	2018

Available Data Details


Time of Sale
ENERGY SCORE

VISIT EXTERNAL LINK

84

DOWNLOAD PDF

Energy Score



Home Energy Summary

You are on your way to an energy efficient home, but you are not there yet. You still have opportunities for cost-effective energy improvements that will lower your energy bills and make your home more comfortable. To learn more visit mncee.org/TISH or contact an Energy Advisor.

	Energy Improvements (by priority)	Improvement Points	Typical Cost	Utility Rebate	Yearly Bill Savings
Attic Insulation	Air seal and insulate your attic	12	\$1,900– \$2,200	Up to \$500	\$150–\$300
Wall Insulation	Insulate your exterior walls when remodeling	4	\$3,100– \$3,550	—	\$200–\$400
Heating System	Congrats, your furnace is efficient and less than 20 years old. Consider a clean and tune service.	—	—	—	—
Storm Windows	Congrats! No single-pane windows without storms.	—	—	—	—

Verification Type

Time of Sale Energy Score

Verifying Entity

Center for Energy and Environment

Verification Date

2021-04-08

Verification Metric

84

Data Source

City of Minneapolis

Verification Key

7986

Year Verified

2021

Available Data Elements

- HERS-rated homes have an Energy Cost Estimate
 - Based on assets of the property; State average energy rates – updated as rates change
 - Supports insight into affordability, helps buyers make a more informed decision
 - Consistent metric to compare homes

Energy Cost Estimate Source

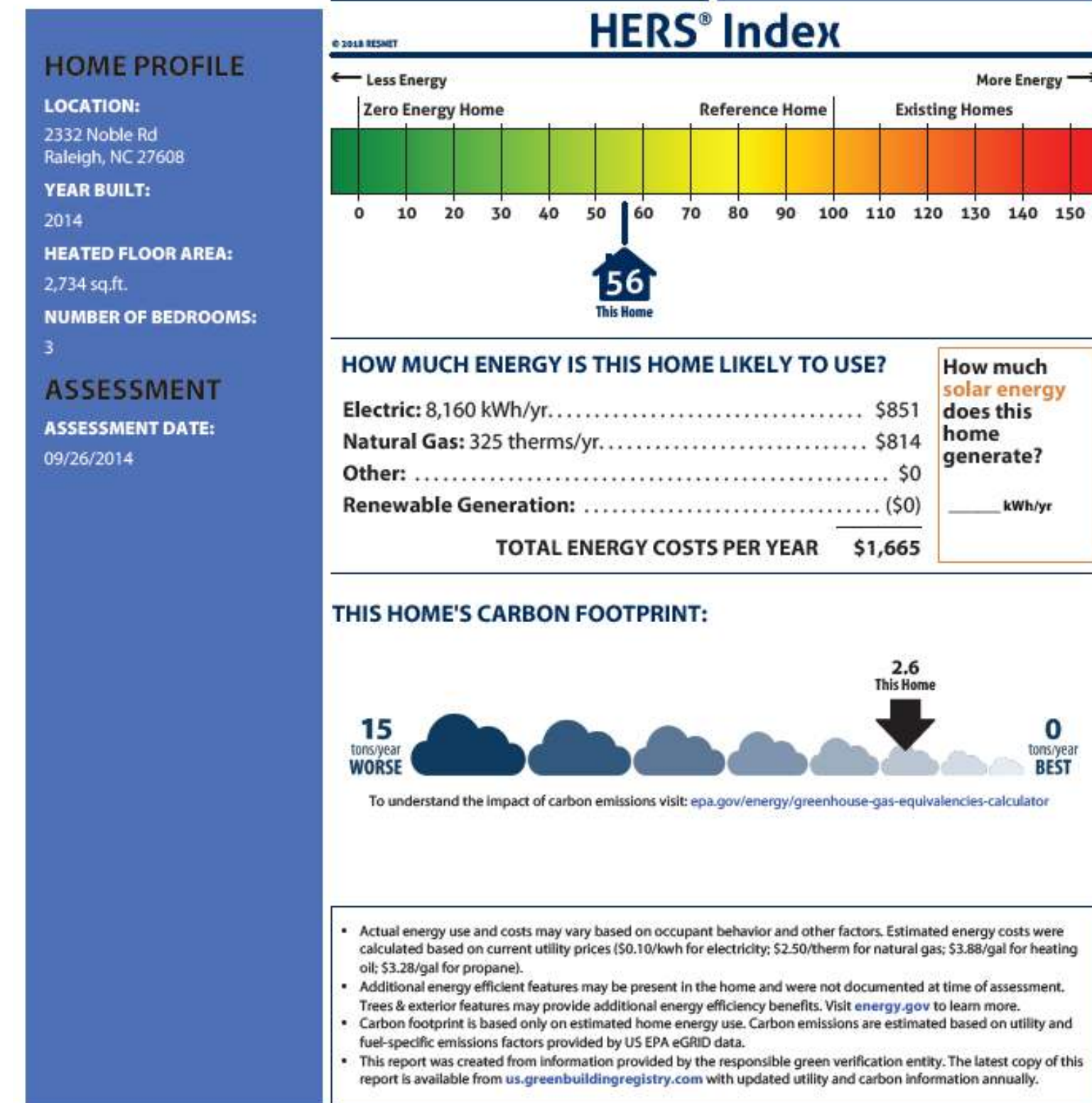
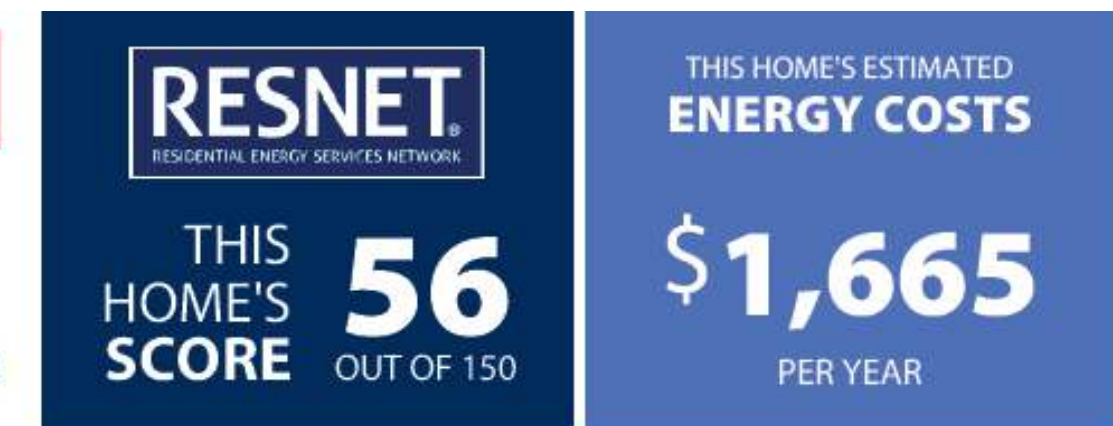
hers

Annual Energy Cost Estimate

\$1,358.00


Appraisal Institute Green
Addendum

<https://rpt.greenbuildingregistry.com/aiga/NC10000026>



Available Data Elements

- GBR has an agreement with the Appraisal Institute to provide a pre-filled Residential Green & Energy Efficient Addendum
- Great benefit for appraiser members
- Knowledgeable appraiser uses this to support valuation – Make sure it's included in the listing packet
- AI Green Addendum URL Field

 Form 820.06*	Client File #:		Appraisal File #:	
	Residential Green and Energy Efficient Addendum			
	Client:			
	Subject Property: <u>2021 Harriet Ave</u>			
	City: <u>Minneapolis</u>		State: <u>MN</u>	Zip: <u>55405</u>
Additional resources to aid in the valuation of green properties and the completion of this form can be found at http://www.appraisalinstitute.org/education/green_energy_addendum.aspx				
The appraiser hereby certifies that the information provided within this addendum:				
<ul style="list-style-type: none">has been considered in the appraiser's development of the appraisal of the subject property only for the client and intended user(s) identified in the appraisal report and only for the intended use stated in the report.is not provided by the appraiser for any other purpose and should not be relied upon by parties other than those identified by the appraiser as the client or intended user(s) in the report.is the result of the appraiser's routine inspection of and inquiries about the subject property's green and energy efficient features. Extraordinary assumption: Data provided herein is assumed to be accurate and if found to be in error could alter the appraiser's opinions or conclusions.is not made as a representation or as a warranty as to the efficiency, quality, function, operability, reliability or cost savings of the reported items or of the subject property in general, and this addendum should not be relied upon for such assessments.				
Green Building: The practice of creating structures and using processes that are environmentally responsible and resource-efficient throughout a building's lifecycle from siting to design, construction, operation, maintenance, renovation, and deconstruction. This practice expands and complements the classic building design concerns of economy, utility, durability, and comfort (US EPA). High Performance building and green building are often used interchangeably.				
Six Elements of Green Building: A green building has attributes that fall into the six elements of green building known as (1) site, (2) water, (3) energy, (4) materials, (5) indoor environmental quality, and (6) maintenance and operation. The energy and water elements are the most measurable elements of green or high performance housing. Appraisers need savings amounts to develop an income approach to support energy efficient contributory value.				
THIRD-PARTY VERIFICATIONS (See types defined in glossary).				
The following verified items are considered within the appraisal analysis of the subject property:				
Green Certification Certifications attest that the home meets certain minimum thresholds.	Environmental Protection Agency (EPA):		<input type="checkbox"/> Indoor airPLUS <input type="checkbox"/> WaterSense <input type="checkbox"/> ENERGY STAR	
	Energy Department (DOE):		<input type="checkbox"/> Zero Energy Ready Home (ZERH)	
	Home Innovation Research Labs NGBS Home Remodel:			
	Home Innovation Research Labs NGBS New Home:		<input type="checkbox"/> Bronze <input type="checkbox"/> Silver <input type="checkbox"/> Gold <input type="checkbox"/> Emerald	
	Living Building Challenge (LBC):		<input type="checkbox"/> Living Building Certified <input type="checkbox"/> Petal Certification	
	Passivhaus Standard:		<input type="checkbox"/> PHI Low Energy <input type="checkbox"/> EnerPhit <input type="checkbox"/> Passive House	
	Passive House Institute US:		<input type="checkbox"/> PHIUS+ 2015	
	USGBC LEED		<input type="checkbox"/> Certified <input type="checkbox"/> Silver <input type="checkbox"/> Gold <input checked="" type="checkbox"/> Platinum	
	Other: <u>GreenStar Homes Certification: Gold</u>			
	Date Verified: <u>9/30/2018</u>		Green Certification Version: <u>LEED-LEED-HOMES v2008</u> Organization URL: <u>usgbc.org</u> , <u>greenhomeinstitute.org/greenstar/</u>	
		ABOVE VALID ONLY IF CHECKED: <input checked="" type="checkbox"/> Verification provided by certifying organization		
Energy Label Labels disclose the state of the home's energy assets.	RESNET's HERS Rating (1 to 150): <u>-9</u>		Estimated energy savings for this home: \$____/year <u>11</u> kWh rate. Dated <u>9/27/2017</u>	
	<input type="checkbox"/> Sampling Rating <input type="checkbox"/> Projected Rating <input checked="" type="checkbox"/> Confirmed Rating		Energy Savings includes electricity, heating & Cooling. Score below 100 indicates energy costs are expected to be lower than average local code home per square foot. HERS Index Report estimates energy cost based on number of bedrooms plus one. Only a "confirmed rating" is a diagnostic test.	
	DOE's Home Energy Score (1 to 10): _____		Estimated energy savings for this home: \$____/year <u>11</u> kWh rate. Dated <u>9/27/2017</u>	
	<input type="checkbox"/> Official Score <input type="checkbox"/> Unofficial Score		Energy Savings includes electricity, heating & Cooling. Score above five indicates energy costs are expected to be lower than average local code home. Home Energy Score estimates energy cost based on state average energy rates and the home's energy features.	
	Other Energy Score: _____		Estimated energy savings: \$____/year ____ kWh rate dated <u>9/27/2017</u>	
	Range (____ to ____): _____		Describe energy label system:	
Date Verified: <u>9/27/2017</u>		Score or Rating Version: _____ Organization URL: <input checked="" type="checkbox"/> <u>www.resnet.us</u> <input type="checkbox"/> <u>www.homeenergyscore.gov</u> <input type="checkbox"/> Other: _____		
		ABOVE VALID ONLY IF CHECKED: <input checked="" type="checkbox"/> Verification provided by certifying organization		
Verified Energy Improvements Only include improvements with verified documentation.	Explain energy-related improvements: For more details visit: https://us.greenbuildingregistry.com/green-homes/MN10000008			
	Cost of improvements: \$ _____			
Date Verified: <u>9/27/2017</u>		Certificate of Efficiency Improvements Version: _____ Organization URL: <input type="checkbox"/> Other: _____ <input type="checkbox"/> <u>energystar.gov/homeperformance</u>		
		ABOVE VALID ONLY IF CHECKED: <input checked="" type="checkbox"/> Verification provided by certifying organization		
Completed by: <u>Autopopulated from us.greenbuildingregistry.com</u> Title: <u>online database</u> Date: <u>09/13/2023</u>				

GBR Data – Auto-pop into Listings

- Suggest adding screen shots and instructions about how this looks and works in the NorthstarMLS system for data auto-population

GBR Data in NorthstarMLS

- Suggest adding screen shots and information about where the data can be discovered in the NorthstarMLS system once it has been auto-populated or entered
 - Will it be included on property reports? If so, where?
 - Are these data fields searchable? If so, how?
 - Will this data be available in outgoing data feeds? If so, communicate newly available data and ask the third-party real estate websites to include it on their property views
 - For members, Include this data on your member (broker/agent) IDX websites

MARKETING & THE OPPORTUNITY



NEW

VALUE

MARKETING MATRIX

NOW

FUTURE

BEST



GOOD

Explain Value Proposition in Public Remarks	Home Score + Logo on Main Photo	Fields in Data Feeds	Image/Logo on Property Report
Link to Documentation in Public Remarks	Documentation to Buyer/ Open House	Searchable Fields	Green Data Auto Population
Score/Rating in Public Remarks	Include in VT	Add Fields to Property Reports	Ask/Require Portal Display of Fields
Include Data on Listing	Upload Documentation to the Listing	Adopt RESO Power Production Fields	Upload Appraisal Inst. Green Addendum to Pics
Education	Upload Certification to Pics	Adopt RESO Green Verification Fields	Upload Appraisal Inst. Green Addendum to Listing

Include Data on Listings

PUBLIC REMARKS – EXPLAIN WHAT IT MEANS

“DON’T JUST PUT THE THIRD-PARTY CERTIFICATION LOGO ON YOUR PACKAGE, TELL THE STORY OF WHY IT’S THERE”

Learn More - Resources

- Green Building Registry Data Types - <https://www.earthadvantage.org/home-data/data-types.html>
- About Green Building Registry - <https://www.earthadvantage.org/home-data/green-building-registry.html>
- NAR “Intro to Sustainability and Resiliency: What REAOTORS® Need to Know - <https://www.nar.realtor/sustainability/intro-to-sustainability-and-resiliency-what-realtors-need-to-know> (1 hour, on-demand, FREE)
- NAR Green Designation - <https://www.nar.realtor/education/designations-and-certifications/green> - Edina, MN Oct 16 – 17, 2023. Register: <https://maarportal.ramcoams.net/Education/Registration/Details.aspx?cid=6fbe29ca-f240-ee11-9cb4-00155d10122d>



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earthadvantage.org

The Green Building Registry is a product of the nonprofit Earth Advantage, Inc.

Thank You