



Office of Housing Counseling

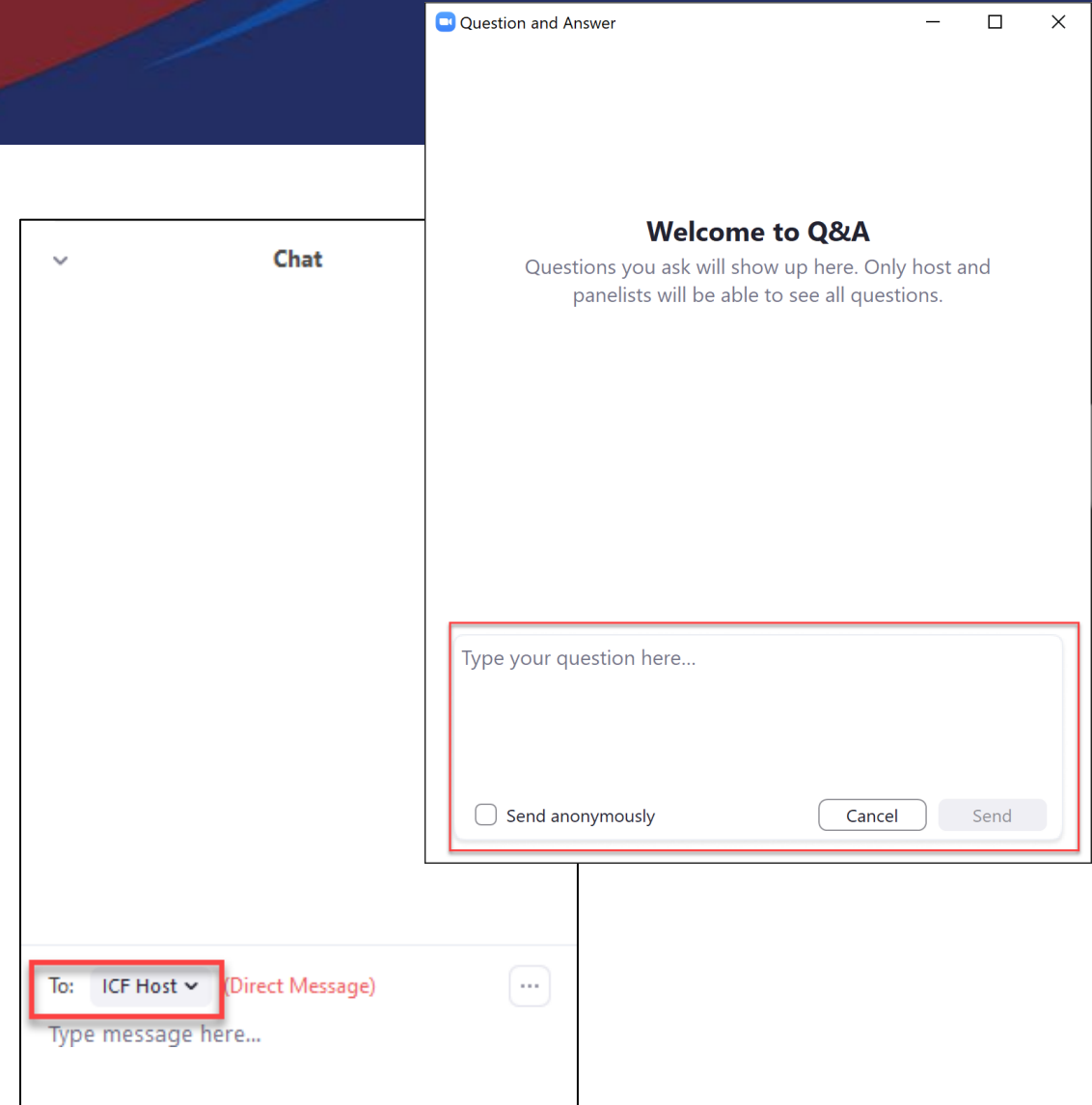
Benefits and Basics of Energy Efficiency and Home Energy Assessments

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

January 26, 2023

Questions?

- Participants are in listen only mode
- Chat
 - Submit any technical issues via the Chat box
 - Send the message to the Host
- Q&A
 - Submit any content related questions via the Q&A box
 - Send to Host, Presenter and Panelists



Materials

- The PowerPoint has been posted for this session. We will provide the link in the Chat box.
- Webinar materials are posted on the HUD Exchange in the [Webinar Archive](#) 7-14 days after the live webinar
 - Find by date or by topic

Housing Counseling Webinar Archives

Page Description
This page contains links to the archived versions of previously recorded webinars presented by the Office of Housing Counseling. In order to listen to the archived webinar, you will need call the 800 # listed and enter the access code. Any course materials, including the PowerPoint Presentations are also posted. You should have the presentations available when you listen to the webinar. If you have any questions regarding the webinars archived on this site, please contact [Virginia Holman](#).

Training Archive – Audio Replay and Transcript:

- Audio replay numbers are only available for 12 months after the date of the webinar
- Transcripts are available for webinars from February 2016 going forward

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[Filter by Topic](#)

Click on the title to view webinar materials, and get credit for viewing the webinar.

Webinar Title and Link	Description	Date
Fringe Benefit Costs	This webinar discussed the Office of Management and Budget's (OMB's) cost principles related to fringe benefits and how to properly document and calculate fringe benefits.	February 15, 2022
Training NOFO Grant Execution	This webinar was recommended for all grantees awarded funding under the 2021 Housing Counseling Training NOFO (TNOFO).	February 8, 2022

Webinar Certificate

- Webinar attendance will be marked following the live webinar.
- Once attendance is marked you can print a Webinar Certificate by logging into your account and going to your [Learning Transcript](#).
- Select the Course Name and click “Print Certificate”. *Not all HUD Exchange training offer Webinar Certificates.*

Housing Counseling Webinar: 9902 Form and Toolkit - Revision Highlights, Tips, and Tools

Close Record

Progress: Completed **Status:** Enrolled **Required:** Yes **Duration:** 1 hour

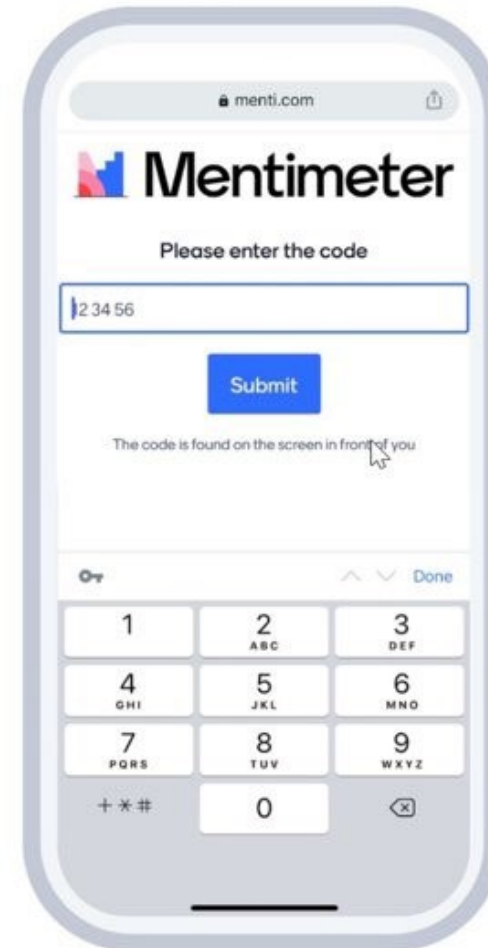
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— Activities

Class Sessions

Feedback and Polling

- There will be questions provided in Mentimeter throughout this presentation.
- When prompted by the icon to the right, please respond to questions at www.menti.com using your computer or smart phone.



**Time for
Mentimeter!**



Presenters

- **Dana Bartolomei, Scott Ledford, and Clair Weatherby**, ICF, Technical Assistance Providers
- **Madeline Salzman**, U.S. Department of Energy, Inflation Reduction Act Home Energy Rebates Implementation Team

Agenda

- HUD Welcome
- Importance of Energy Efficiency
- Energy Efficiency Actions, Adjustments, and Improvements
- Using a Home Energy Assessment in a Counseling Appointment
- HUD Reporting and Grant Reimbursement
- Tools and Resources



Jerrold H. Mayer

Director

Office of Outreach and Capacity Building

HUD's Office of Housing Counseling

Energy Efficiency Essentials Series Introduction



- Provides training for housing counselors on how energy efficiency can benefit clients
- Outlines accessible energy cost saving measures and resources to help clients make energy efficient improvements
- Equips attendees with tools and resources to implement the information and advice shared in the series

Check Out All the Sessions

Today: Benefits and Basics of Energy Efficiency and Home Energy Assessments

- Importance of energy efficiency for housing counselors
- Basic actions, adjustments and improvements
- Guide to using home energy assessments and reports in a counseling appointment



February 9, 2023: [Incentives and Resources to Make Energy Efficiency a Reality](#)

- Incentives, loan products, rebates, and other resources to help clients fund energy efficiency improvements
- How to find local energy efficiency programs and benefits for renters, homeowners and homebuyers
- How to build an agency's energy efficiency knowledge and services



Importance of Energy Efficiency

Madeline Salzman

U.S. Department of Energy

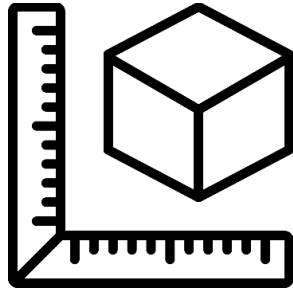
Office of State and Community Energy Programs

Residential Buildings Account For –



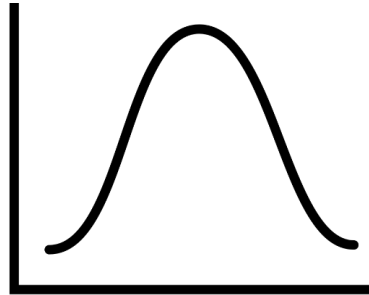
95%

of U.S. buildings



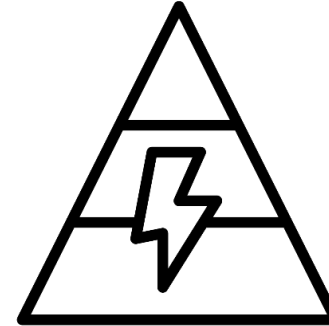
70%

of U.S. building stock
square footage



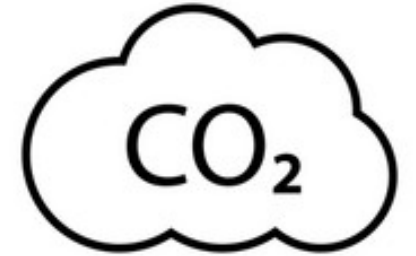
50%

of peak demand on
electricity (ERCOT)



21%

of U.S. energy use



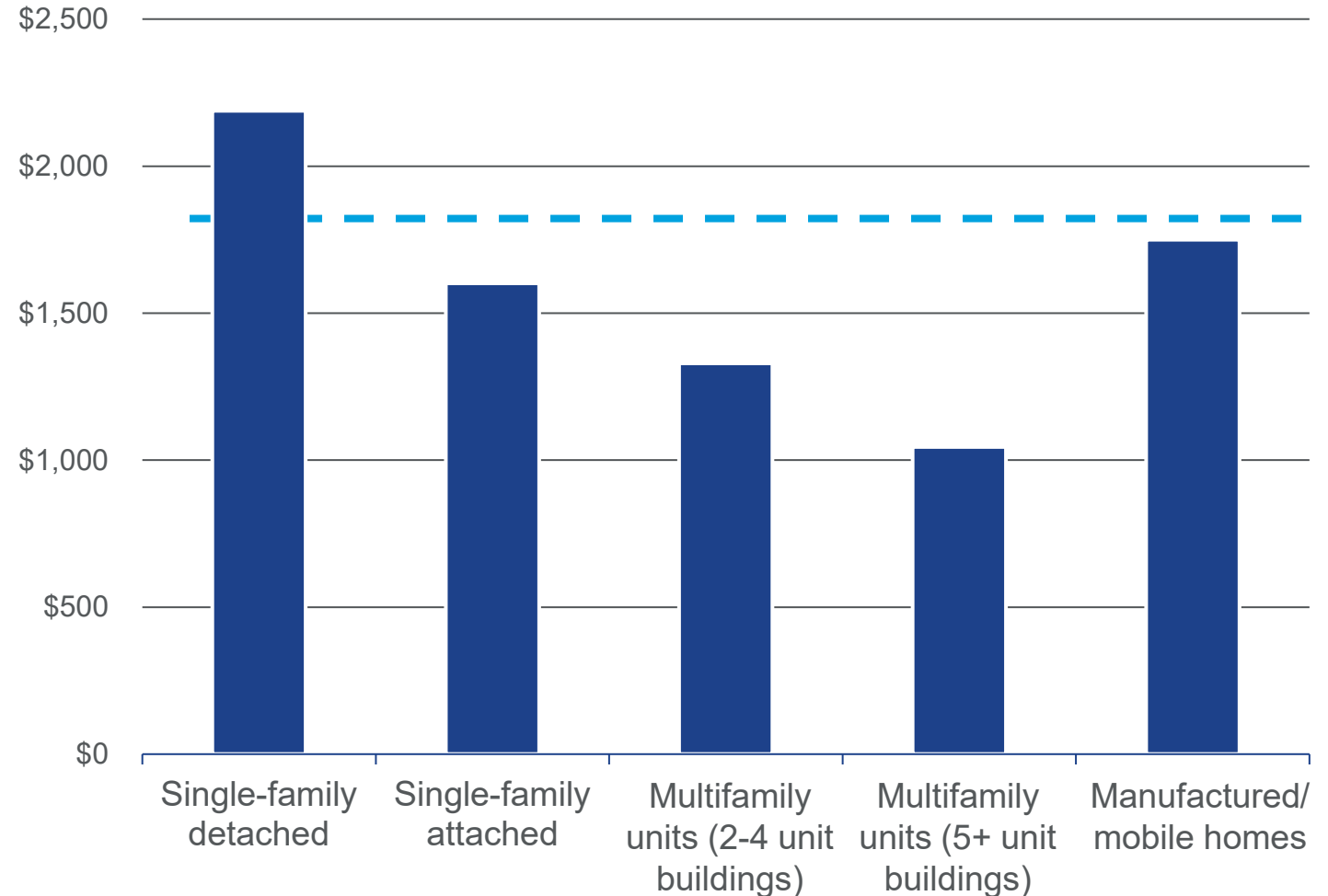
20%

of U.S. CO₂
emissions

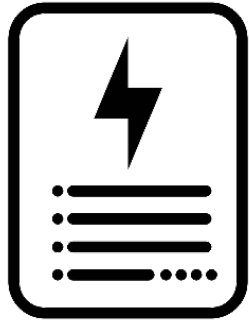
Trends in Household Energy Costs

- Household expenditures for energy exceed **\$219 billion per year**
- The average U.S. household spends **\$1,856** on energy each year (more than insurance average)
- Residents of single-family detached homes typically have **higher energy bills** than residents of other housing types.

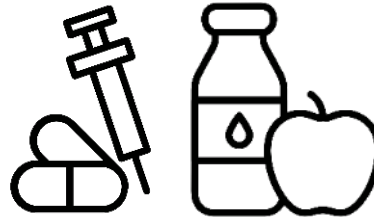
Average Annual Energy Bills By Housing Type (EIA 2020)



Energy Costs Are High For Residents



Nearly **one-third** of U.S. households reported facing a challenge in paying energy bills or sustaining adequate heating and cooling in their homes.



About **one in five** households reported reducing or foregoing necessities such as food and medicine to pay an energy bill.

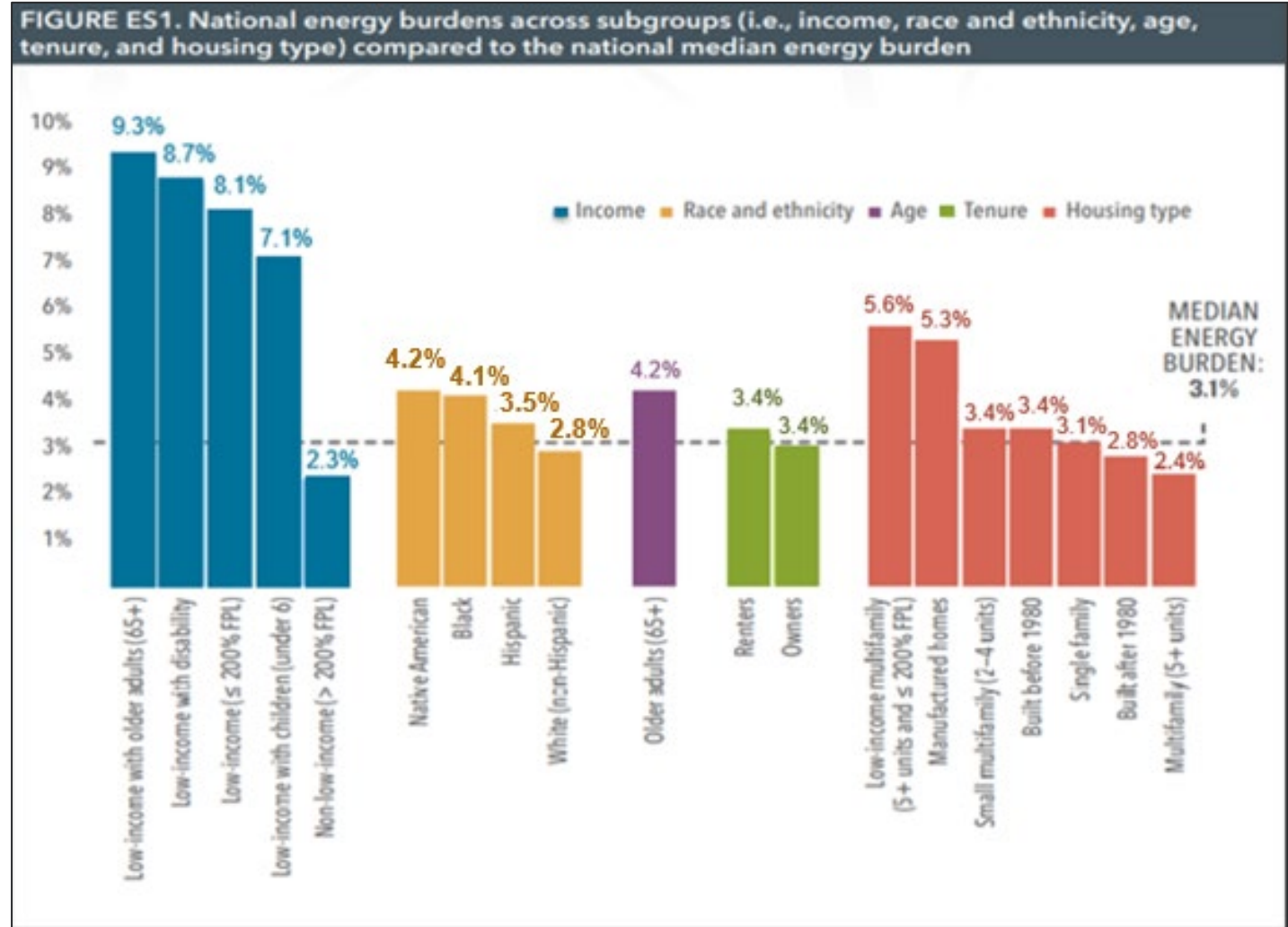


The **most common reason** reported for individuals seeking payday loan products is to pay their utility bills.

Sources: EIA 2020 & FDIC 2012

Low-income and Households of Color Experience Higher Energy Burden

- Energy burden describes the percent of household income that is spent on energy bills.
- Median U.S. energy burden is **3.1%**
- Low-income households experience an energy burden more than **3.5x** that of non-low-income households.
- **Nearly half** of manufactured/mobile home residents report energy insecurity



Source: ACEEE, 2020

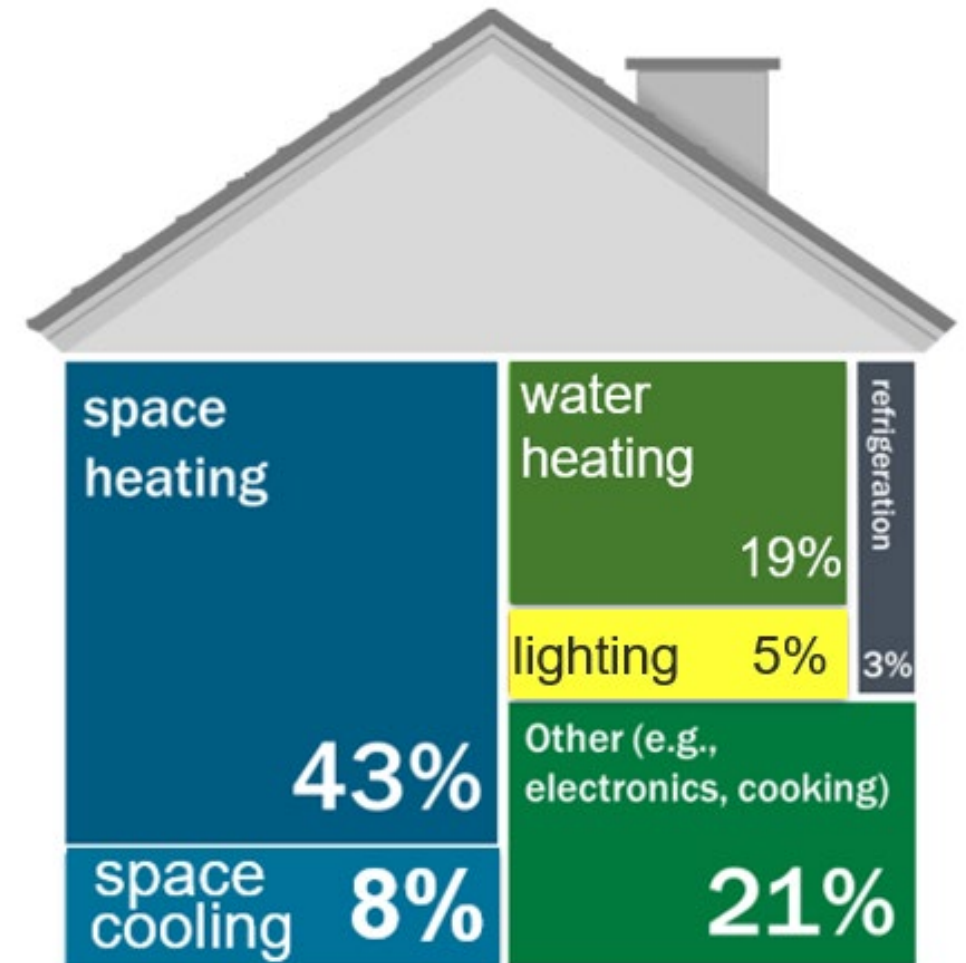
What Housing Features Drive High Energy Costs?

On average, **space heating and cooling** makes up over half of energy use in US homes

- Drivers of heating & cooling needs:
 - Climate region
 - Home insulation and air sealing
 - Duct efficiency
 - Equipment efficiency
 - Temperature set points (behavior)
 - Windows

Homes with these features tend to experience **higher energy costs** per person:

- Heated by fuel oil or propane
- Located in New England & Mid Atlantic, and in rural areas
- Larger square footage (e.g., above 2,500 square feet)
- Homes with older or inefficient energy features



Source: U.S. Energy Information Administration (2020)

Energy Efficiency is Good for Residents



Helps Reduce Costs.

Energy burdens average higher than both property taxes and home insurance.



Smart Investment.

Efficiency features pay back via energy savings over time.

Improves Quality of Life



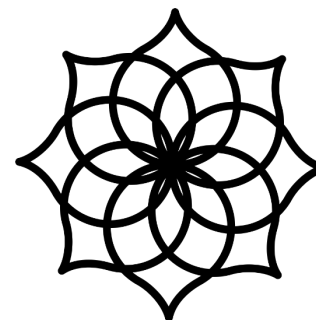
Reduced environmental impact.



Increased comfort.



Improved health outcomes.



Less draftiness.



Increased control.



Peace of mind.



Time for
Mentimeter!



Energy Efficiency Actions, Adjustments, and Improvements

Energy Efficiency Practices

- Low and no cost energy efficiency measures can help consumers save through:
 - Easy actions and practices
 - Small adjustments and purchases
 - Larger improvements
- The [Checklist of Easy Actions and Modest Adjustments for Energy Savings](#) outlines how consumers can easily lower energy costs

Energy Efficient Improvements

- Homeowners can consider [do-it-yourself improvements](#) and bigger [upgrades](#) that will save energy over time
- Use energy efficient appliances: refrigerators, ranges, dishwashers, laundry machines
- Stabilize home temperature:
 - Air sealing
 - Insulation
 - Duct sealing
 - Replacing windows
- Upgrade systems: HVAC improvements, replacing water heater (e.g., heat pumps)
- Consider [ENERGY STAR](#) options for all of the above
- Visit DOE's [Energy Saver](#) website to take a virtual tour of an EE house and learn more about ways to save energy and cut costs

The most common projects



SEALING AIR
LEAKS AND
ADDING
INSULATION*



SEALING
DUCTWORK



INSTALLING
RENEWABLE
ENERGY
SYSTEMS



IMPROVING
HEATING,
COOLING,
AND
VENTILATION
SYSTEMS



REPLACING
WINDOWS



UPGRADING
LIGHTING,
APPLIANCES,
AND WATER
HEATING
EQUIPMENT
**



*Photo credit: Austin Energy Home Performance with ENERGY STAR

**Photo credit: New Jersey Home Performance with ENERGY STAR

Case Study: Improving Your Energy Score

- [Margaret Rankin of Detroit, MI](#) insulated and air sealed her upper attic and other areas to ENERGY STAR levels
- She received \$750 in rebates



With minimal insulation and no air sealing, Margaret Rankin's split-level home had some serious comfort issues.

Case Study: Improving Your Energy Score (contd)



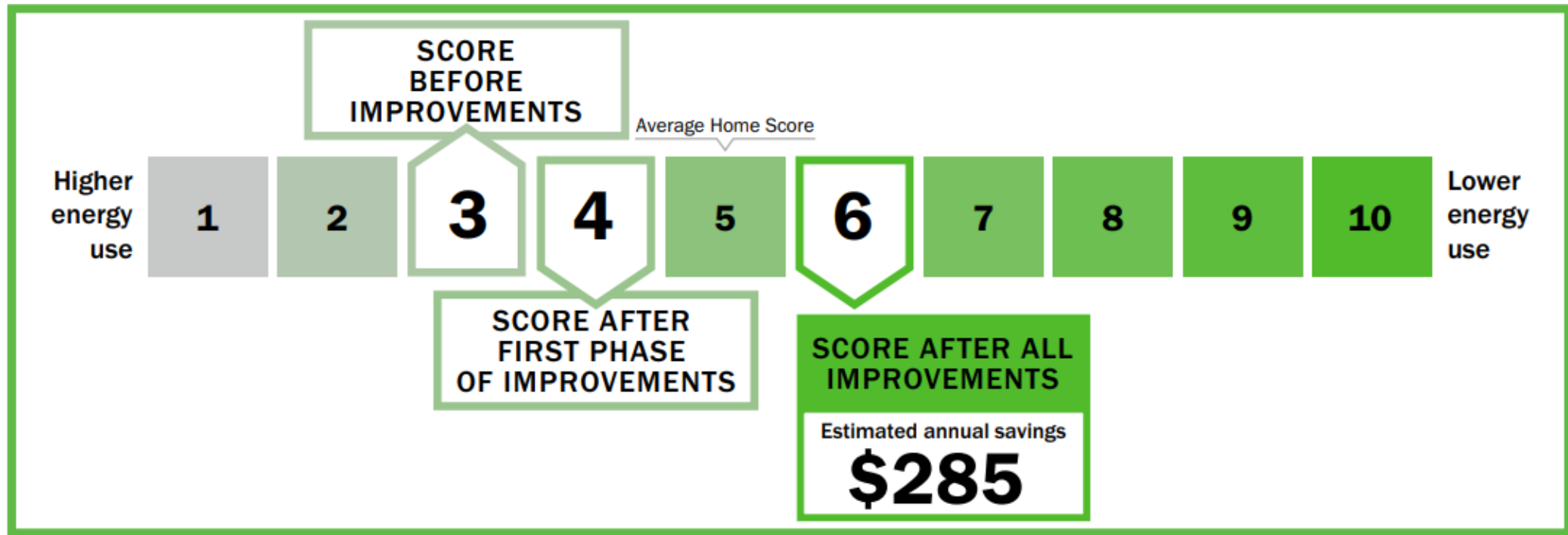
The attics, walls, and basement all had minimal insulation and no air sealing.



An installer with Ecotelligent Homes installs spray foam around the perimeter of the upper level, which cantilevers over the lower level.

Case Study: Improving Your Energy Score

Rankin Home Energy Score



Rankin is pleased with the results of the upgrade. “I can already tell the difference,” she says. “The furnace is not coming on as often as before.” Unlike a cosmetic remodel, she says, “You may not see what you’re getting, but you’re going to feel it. It’s worth it for your own comfort.”



Using a Home Energy Assessment in a Counseling Appointment

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Mentimeter!**



Consider an Energy Assessment

- Home energy score reports, energy audits, and home energy assessments all involve an assessment of an individual's home, to determine:
 - How energy efficient the home is now
 - How the consumer can save energy, cut costs, and improve home comfort
- Local utilities may offer energy reports based on energy use, or in-person home assessments
- [Home Energy Score providers](#) are listed online

Understanding Assessment Types

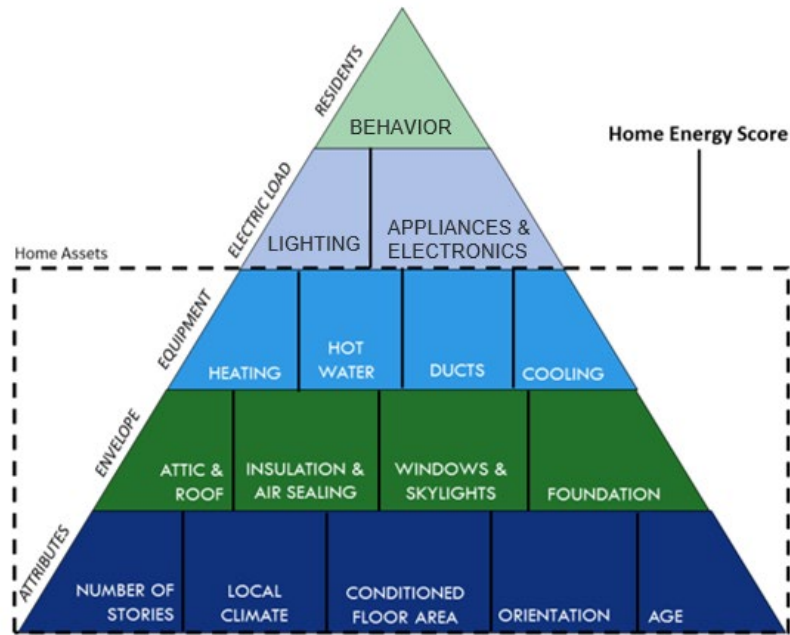
Do-It-Yourself Assessment

- Follow [DOE Energy Saver Guidance](#)
- Identify areas where the home is losing energy:
 - Locate air leaks
 - Check insulation levels
 - Have heating and cooling equipment checked; seal duct leaks
 - Examine lighting
 - Evaluate appliances and electronics
- Read [utility usage report](#) (if offered)

Professional Assessment or Audit

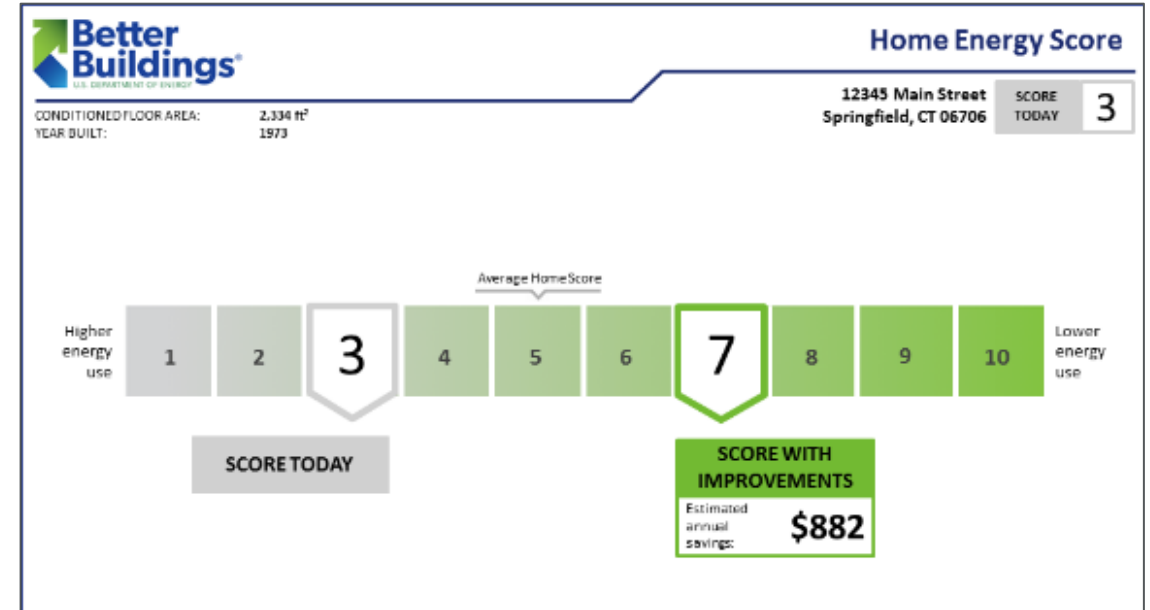
- Room-by-room exam of insulation levels, air leaks, HVAC and water heating systems, etc.
- May include:
 - Analysis of past utility bills
 - [Various measures](#) to test energy loss: blower door test, infrared camera, moisture meters
 - Other hazard testing (CO₂, gas leaks, radon)
- Offers recommendations and estimated energy cost savings

Home Energy Score – A “Miles Per Gallon” Rating for Homes



An Energy Asset Rating

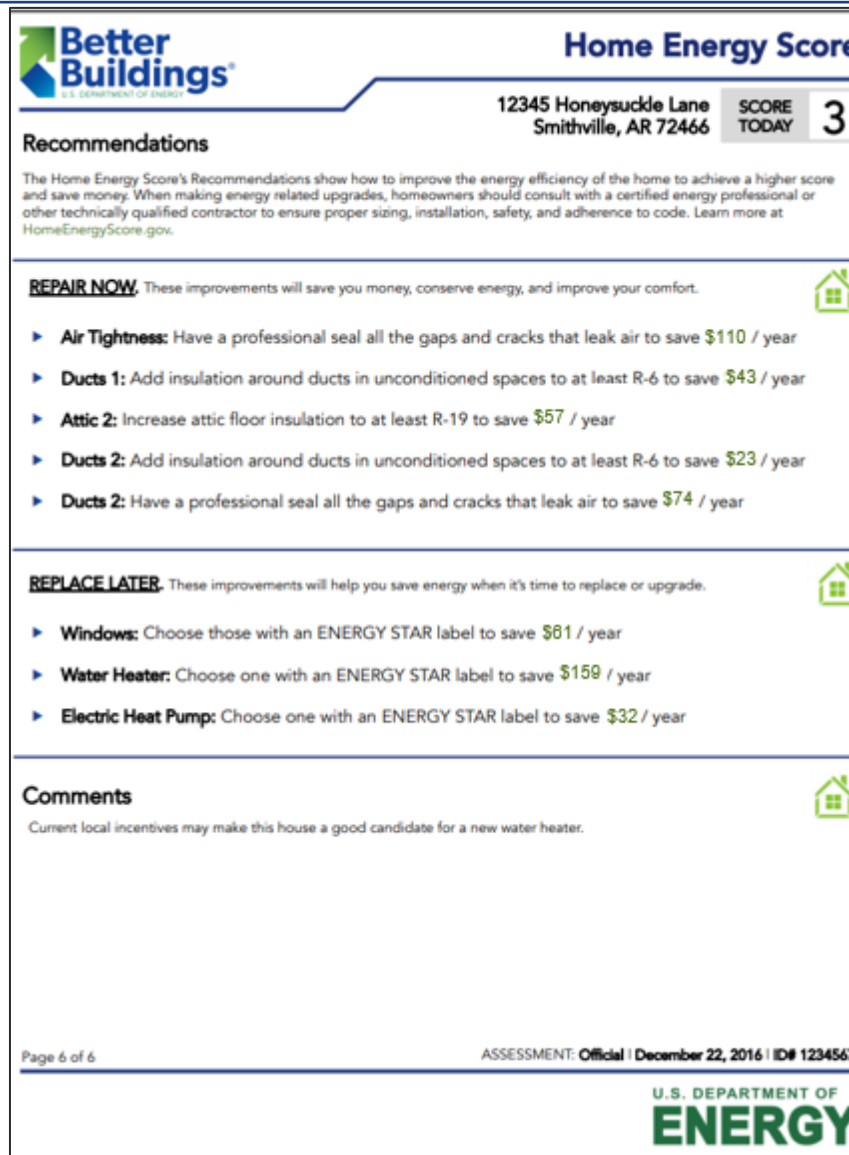
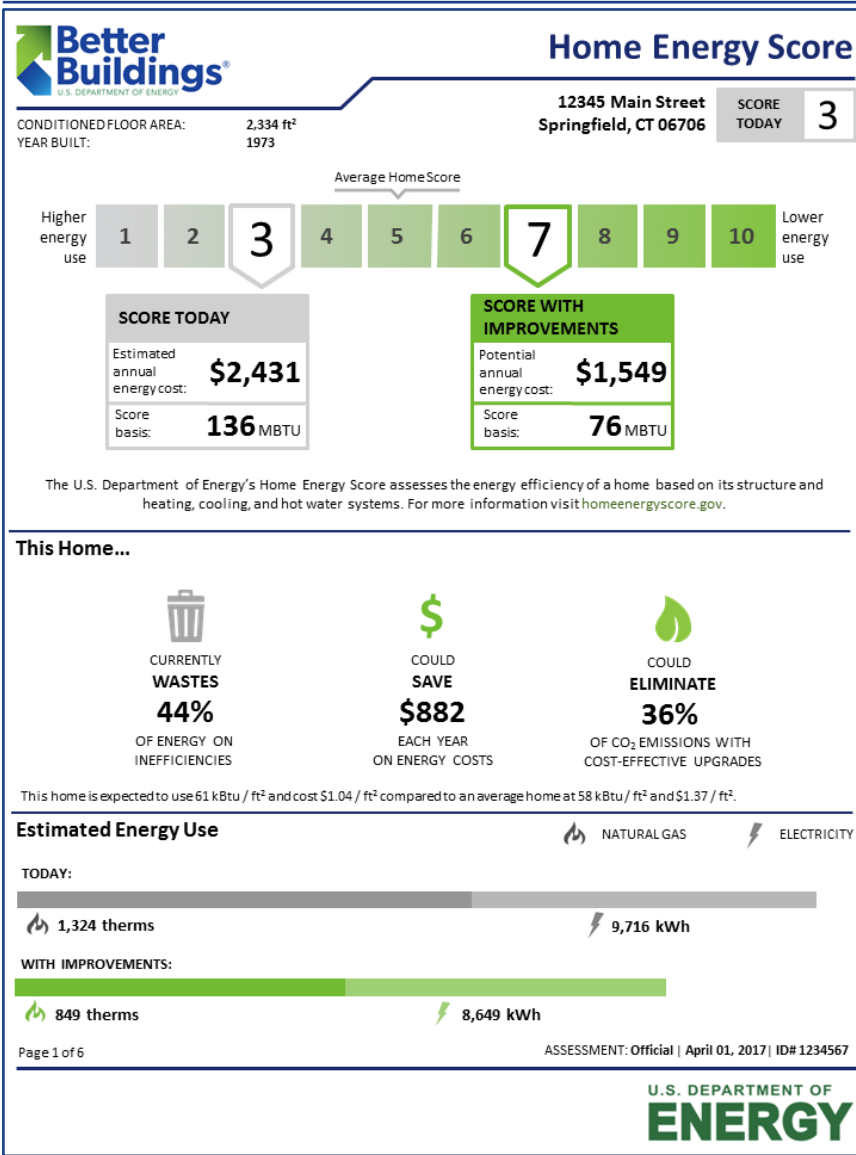
- ✓ Features that convey in home sales
- ✓ Represent bulk of features that impact home energy use
- ✓ Data collection typically under one hour for Assessors
- ✓ Nationally applicable, results in comparable estimates for homes regardless of previous occupancy status
- ✓ Analogous to MPG ratings & nutrition facts in structure



Score Report

- ✓ Easy to understand summary score from 1 to 10
- ✓ Cost-effective recommendations to save energy and improve score (customizable to local goals & incentives)
- ✓ Comparable home energy use and cost estimates
- ✓ Standard DOE report or customize to your needs/priorities
- ✓ Link to financing products and industry standards for data

Standard Home Energy Score Report



- ✓ Easy to understand home rating
- ✓ Motivation to improve and compete
- ✓ Recommended improvements to increase score
- ✓ Comparable home energy use and cost estimates
- ✓ Aggregable data across homes and programs
- ✓ Link to financing products and industry standards for data

Utility Home Energy Assessment (page 1)

Prioritized List of Measures

Customer: [REDACTED]
Address: [REDACTED]
Inspection Date: 10/01/21
Scenario ID: [REDACTED]
Electric Incentive Rate: \$18.00
Natural Gas Incentive Rate: \$5.00
Generation Date: 10/05/21

Thank you for participating in Pepco's Home Energy Assessment, we have attached a Prioritized List of Measures to help protect your family's health and safety. These measures are

You can choose to complete their HPwES Program phases. In order to qualify for Pepco's HPwES Program, you must be in compliance with ENERGY STAR, Building Performance

In addition to a proposed scope of work and energy savings based on the estimated lifetime savings calculated by measure, are all converted to a single energy savings per energy unit) that calculates the projected energy savings. Please contact your Participating Contractor of your choice.

Health and Safety Concerns

Corrections to health and safety concerns must be completed prior to the start of energy efficiency improvements, and they are not eligible for rebates. These corrections must be verified by a certified BPI professional before starting work on any improvements in the Prioritized List of Measures.

Item Found	Correction Needed
Gas Leaks - CAZ - CAZ Test 1	2 gas leaks need to be corrected immediately by a licensed professional.
Contaminants Isolated from Conditioned Space	Diagnostic testing results indicate that one or more areas connected to your home (i.e. crawlspace, attic, and/or garages) are not adequately isolated from the living space, which may allow Contaminants located within those areas to infiltrate into your home. Effective air sealing is required to minimize any air infiltration between those areas and the living space to ensure healthy indoor air quality. This health and safety issue must be prioritized prior to installing any other shell improvement measures.

Prioritized List of Energy Efficiency Improvements

The recommended improvements listed below have been grouped into packages that include individual improvements recommended to treat the suggested area effectively. Both the suggested package(s) and individual improvements have been prioritized based on the cost effectiveness (SIR ratio), starting with the most cost effective. Packages and/or individual measures on this list may be eligible for rebates through the HPwES Program if completed in compliance with current program standards.

Utility Home Energy Assessment (page 2)

Recommended Improvement	Existing Condition	Improved Condition	Proposed Lifetime Savings	Proposed Incentives
Whole House Air Sealing Package				
Air Sealing Level	Air leakage rate of 4775 cubic feet per minute at 50 Pascals.	Reduce leakage from living space to 2865 CFM50	\$1,323.49	\$699.02
Windows & Doors Package				
Doors - basement door	Current door is wood panel (no storm)	Install 1 Insulated Replacement Door (no Storm)	\$97.68	\$-
Windows & Glass Doors - Group 1	Current windows are single-pane clear with storm windows	Install 15 Unit(s) with U-Value 0.29 & SHGC 0.49	\$709.63	\$-
Package Totals:			\$807.31	\$-
HVAC Equipment Package				
Central Air Conditioner - System 1	7-15 year old Central AC with an efficiency of 14.5 SEER	Replace w/ 16 SEER	\$1,140.02	\$786.42
Heating System - System 1	21-25 year old Furnace with an efficiency of 92 AFUE	Replace w/ 96 AFUE	\$369.72	\$-
Package Totals:			\$1,509.73	\$786.42
				Package Totals:
				\$705.10
				\$439.02
Comprehensive Project Totals:				\$6,655.82
				\$3,305.33

Requirements: Program standards require that an effective air barrier between the living space and the attic must be identified or installed before installing any other insulation or air sealing measures. In order to receive rebates for HVAC equipment, the scope of work must include attic air sealing and attic insulation that is equal to or greater than R-49 (or filled as space allows) or deemed unnecessary by a Participating Contractor.

How to Use in a Counseling Appointment

- Review the assessment to:
 - Understand current energy usage and costs
 - Consider energy savings recommendations
 - Evaluate the cost, payback, and timeline of different recommendations
- Identify resources to help finance upgrades
 - Housing counselors are encouraged to get a home energy assessment themselves, to experience it
 - Check out the [Incentives and Resources to Make Energy Efficiency a Reality Webinar](#)

**Time for
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HUD Reporting and Grant Reimbursement

Reporting and Funding Energy Efficiency Counseling

- Energy efficiency is a topic included in HUD's definition of Non-Delinquency Post-Purchase Counseling Education and Rental Counseling
- These counseling categories are reimbursable under the HUD Housing Counseling Grant
- Energy efficiency is a key element of counseling on:
 - Home maintenance
 - Entire process of homeownership (as required by the Final Rule)



Tools and Resources

Tools and Resources

- [Energy Saver | Department of Energy](#)
- [Energy Efficient House Tour | Department of Energy](#)
- [Do-It-Yourself Energy Savings Projects | Department of Energy](#)
- [ENERGY STAR Home Upgrade | ENERGY STAR](#)
- [Home Energy Score Partner Map | Better Buildings Initiative](#)
- [Case Study: Cost Savings and Improved Occupant Comfort for Michigan Resident \(energy.gov\)](#)
- [Checklist: Counseling on Working With Contractors | Housing Counseling Disaster Recovery Toolkit | HUD Exchange](#)
- [Home Improvement Expert™ Home | Building America Solution Center](#)



Questions and Answers



Housing Counseling Training Digest

- Visit the HUD Exchange [Training Digest](#) to view upcoming trainings

Energy Efficiency Essentials Series

[Incentives and Resources to Make Energy Efficiency a Reality](#)

February 9, 2023

OHC Basics Series

[Recordkeeping and Client File Maintenance](#)

February 1, 2023

[Tips for Using your CMS and HCS](#)

February 15, 2023

Housing Services for Persons Impacted by Domestic Violence and Sexual Assault Series

[How to Identify Persons Impacted by Domestic Violence and Sexual Assault](#)

February 23, 2023

[Housing Protections for Persons Impacted by Domestic Violence and Sexual Assault](#)

March 9, 2023

Office of Housing Counseling



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- Email us at: Housing.counseling@hud.gov
- Search for [HUD Approved Housing Counseling Agencies](#)



Office of Housing Counseling

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U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT