Manufactured Housing Task Force

**Purpose:** an Interagency Task Force led by CEQ to develop and test financing products and other mechanisms to make energy-efficient manufactured homes (MH) a more attainable and affordable housing option.

**Goals of the Task Force:**

- Develop and enhance federal financing products for high efficiency MH units.
- Engage the manufactured housing industry and non-Federal finance sector to develop innovative solutions that make highly efficient MH units more affordable.
- Pilot test and validate new financing products and other mechanisms in varied manufactured housing markets.
- Replicate success based on results of pilots.
DOE, NASEO and the participating states collaborate to share best practices and develop strategies and mechanisms for making financing and ownership of energy-efficient manufactured homes more affordable and accessible.

Participating State Energy Offices

- California Energy Commission
- Colorado Energy Office
- Montana Energy Office
- Kentucky Office of Energy Policy
- Maine Governor’s Energy Office
- Minnesota Department of Commerce Energy Division
- South Carolina Energy Office - Office of Regulatory Staff
- New York State Energy Research and Development Authority
- North Carolina Department of Environmental Quality Energy Office
- West Virginia Department of Economic Development's Office of Energy
Manufactured Housing Consumer Website

- **New consumer-facing website** with informational resources
  - Manufactured housing financing options, including resident-owned communities
  - Incentives and assistance (including utility incentives)
  - DOE manufactured housing research and demonstration projects
  - Information on DOE State initiative with NASEO
- **Provides links to relevant Federal Agency resources**
  - CFPB, EPA / ENERGY STAR, HUD, Treasury, USDA, VA
  - Fannie Mae and Freddie Mac
- **Consumer education resources**
  - Links to key organizations that provide consumer information, including:
    - Next Step, I'M Home Network, National Consumer Law Center, MHI
- **DOE research studies and reports**
  - *Field Evaluation of Advances in Energy-Efficiency Practices for Manufactured Homes*
IRA Extension of Energy Efficient New Home Tax Credit (45L)

- **2006-2022**: Energy savings requirement was 50% reduction in heating/cooling energy relative to reference home (2006 IECC), using approved software. Original 45L requirements sunset December 31, 2022.
- **2023**: 45L **extended** to 2032 (10 years)!
- **2023–2032**: energy savings requirements are now based on ENERGY STAR Residential New Construction Program (lower tier) and DOE Zero Energy Ready Home Program (upper tier) **Certification**.

<table>
<thead>
<tr>
<th>Building Type</th>
<th>ENERGY STAR Tier</th>
<th>DOE ZERH Tier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single family and Manufactured homes</td>
<td>$2,500</td>
<td>$5,000</td>
</tr>
<tr>
<td>Dwellings in multifamily buildings</td>
<td>$500</td>
<td>$1,000</td>
</tr>
<tr>
<td>Dwellings in multifamily buildings.</td>
<td>$2,500</td>
<td>$5,000</td>
</tr>
<tr>
<td>Prevailing wage requirements met.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tiers of 45L Tax Credits, 2023-2032
ZERH Approach Applied to Manufactured Homes

**ZERH All Other Sectors**
- Performance-based Energy Efficiency Targets (ERI) using software
- Mandatory Building Science and Quality Requirements
- Coordination with Voluntary Federal Programs
  - ENERGY STAR and Indoor airPLUS Certification Required
  - Uses Same Certification Infrastructure
- Certification by recognized Home Certification Organizations (HCO’s)

**ZERH for Manufactured Homes (NEW)**
- Prescriptive Energy Efficiency Targets
- Mandatory Technical and Quality Requirements
- Coordination with Voluntary Federal Programs
  - ENERGY STAR Certification Required
  - No Indoor airPLUS Certification Available for MH
  - Uses Same Certification Infrastructure
- Certification tailored to HUD Code compliance processes
Buildings UP
The Buildings Upgrade Prize

Building capacity to transform U.S. buildings into energy-efficient and clean energy-ready homes, commercial spaces, and communities

Upgrading existing buildings to efficiently run on clean energy will help address climate change. This means transitioning residential and commercial buildings to efficient electric equipment, such as heat pumps and heat pump water heaters, and ensuring comfort with measures such as windows attachments, insulation and air sealing.

Teams participating in Buildings UP will develop innovative plans to leverage the billions of dollars through the Bipartisan Infrastructure Law, the Inflation Reduction Act, utility rebate programs, and many other funding sources available and capitalize on this unprecedented opportunity to improve our homes, businesses, and communities.

Buildings UP will award more than $22 million in cash prizes and expert technical assistance to bring winning ideas to life.

Form Your Team and Submit Your Application by July 2023!

- Community-based organizations
- State governments
- Local governments
- Utilities
- Non-profit organizations
- For-profit energy efficiency companies
- and more!

Multi-stakeholder teams are encouraged

Application support available for new and under-resourced teams

Follow Buildings UP on HeroX for prize info and updates
Questions: buildingsUP@nrel.gov

www.heroX.com/buildingsUP
Appendix

ZERH-Manufactured Homes V1 Requirements
All Certified DOE ZERH Manufactured Homes shall meet the following requirements:

- Exhibit 1: Mandatory Efficiency Requirements
- Exhibit 2: Additional Efficiency Requirements
- Exhibit 3: Mandatory Technical Requirements

Exhibit 1: Mandatory Efficiency Requirements

<table>
<thead>
<tr>
<th></th>
<th>Climate Zone 1</th>
<th>Climate Zone 2</th>
<th>Climate Zone 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wall</td>
<td>R-13</td>
<td>R-21</td>
<td>R-21</td>
</tr>
<tr>
<td>Floor</td>
<td>R-22</td>
<td>R-22</td>
<td>R-33</td>
</tr>
<tr>
<td>Ceiling</td>
<td>R-33</td>
<td>R-33</td>
<td>R-38</td>
</tr>
<tr>
<td>Door U-factor</td>
<td>0.40</td>
<td>0.40</td>
<td>0.30</td>
</tr>
<tr>
<td>Window U-factor</td>
<td>0.30</td>
<td>0.30</td>
<td>0.30</td>
</tr>
<tr>
<td>Window SHGC</td>
<td>0.25</td>
<td>0.25</td>
<td>N/A</td>
</tr>
<tr>
<td>$U_o$ - Single Section</td>
<td>0.076</td>
<td>0.065</td>
<td>0.057</td>
</tr>
<tr>
<td>$U_o$ - Multi-Section</td>
<td>0.070</td>
<td>0.063</td>
<td>0.054</td>
</tr>
</tbody>
</table>
Exhibit 2: Additional Efficiency Requirements

How to use Exhibit 2:

1. Start with “free” points (Exhibit 1 measures)

2. Select additional measures until a total of \( \geq 18 \text{ points} \) is achieved

+ 8
**Exhibit 3: Mandatory Technical Requirements**

<table>
<thead>
<tr>
<th>Moisture Management</th>
<th>Indoor Air Quality</th>
<th>Efficiency and Generation</th>
<th>Quality Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Window and Door Flashing</td>
<td>Comprehensive Ventilation through ASHRAE 62.2 Compliance</td>
<td>Improved Efficiency Targets Beyond Energy Standard and ENERGY STAR</td>
<td>Design Details, Training, QC Processes for All Requirements</td>
</tr>
<tr>
<td>Step and Kickout Flashing</td>
<td>Local Exhaust in Bathrooms and Kitchens</td>
<td>Additional Above-Code Air Sealing Measures</td>
<td>QC inspection of Air Barrier Installation</td>
</tr>
<tr>
<td>Dehumidification-Ready Details</td>
<td>Combustion Safety</td>
<td>Advanced Framing Techniques</td>
<td>QC and Plant Sampling of Duct Tightness</td>
</tr>
<tr>
<td>Foundation Moisture Details in Installation Manual</td>
<td>Low Emission Paints/Finishes</td>
<td>Duct and HVAC Quality Installation Requirements</td>
<td></td>
</tr>
<tr>
<td>Site Drainage Detail in Installation Manual</td>
<td>Low Emission Carpets</td>
<td>Water Distribution Efficiency</td>
<td></td>
</tr>
<tr>
<td>Hard Surfaces in Bathrooms</td>
<td>Advanced Filtration</td>
<td>PV-Ready Features</td>
<td></td>
</tr>
</tbody>
</table>

**Blue Text** - These mandatory measures are likely to reduce energy consumption.
Certification & Verification Requirements

✓ Build on established ENERGY STAR QA Provider (QA Provider) Process
✓ Allow any ENERGY STAR QAP to apply to be QAP for ZERH
✓ Plant Certification
✓ ZERH Requirements incorporated into Design and Inspection Process
✓ Inclusion in manuals and construction procedures
✓ Inspection and Testing Requirements for ZERH Units
   ✓ Performed by third party inspector
   ✓ Overseen by QA Provider
✓ Quality Assurance Audits
   ✓ 10% in plant
   ✓ 2% in field
✓ Documentation and Reporting follow DOE ZERH program requirements
✓ Performance and technology selection reporting as V1 Research
Examples of IRA and BIL Incentives for Manufactured Housing

- **DOE efficiency rebates (aka HOMES):** Owners of existing MH who reduce their home's energy consumption by > 20% are eligible for a rebate on those installations. Rebate is doubled if low-income.

- **DOE electrification rebates (aka HEEHRA):** Owners of existing or new MH who install efficient electric equipment are eligible for a rebate, if household is low/moderate income (<150% area median income)

- **25C:** Owners of existing MH who make energy efficiency improvements such as purchasing a heat pump or conducting an energy audit are eligible for a tax credit

- **45L (Zero Energy Ready Homes):** Manufacturers of new MH upon sale of the MH. Tax credit available as of 1/1/23

- **WAP:** Owners of existing MH who qualify as low-income are eligible to receive a grant to cover the cost of weatherization and retrofits

- **EE Revolving Loan Fund Capitalization Grant Program:** Owners of existing MH homes may be eligible for EE improvement loans, but it depends on how a state sets up its program.