

Building Energy Standards

Promoting Sustainability and Decarbonization



There are new funding opportunities available to help buildings meet energy efficiency standards. This guide provides background information on building energy standards, and the funding and resources available to help building owners achieve standards and savings by:

- Defining building energy standards and their relationship to energy codes;
- Providing examples of building energy standards applicable to HUD-assisted properties; and
- Identifying resources to help owners understand and meet building energy standards.

Why are building energy standards important?

Building energy standards are criteria developed by professional organizations to help building owners voluntarily set and meet energy efficiency and greenhouse gas emission goals. They complement building energy codes, which are mandatory and set by the state or locality. Standards and codes are relevant to building owners because they:

- **Outline and plan** sets of actions to take related to energy efficiency, renewable energy, and climate resilience to reach sustainability and decarbonization goals;
- **Increase access to funding** that requires a building meets a specific standard or code; and
- **Prepare building owners to adapt** to changing state and local government energy codes.

Combining the information gathered from **benchmarking** and the goals set by building energy standards and codes, building owners can be better prepared to create a plan that works for them and take concrete action to make climate-focused improvements to their properties.

The **National Initiative to Advance Building Codes** (NIABC) is emphasizing the role of energy standards and codes in meeting climate resilience and sustainability goals. The Department of Energy (DOE) is providing resources for states, territories, and local governments to [adopt advanced energy codes](#) and a group of state and local governments have created the [National Building Performance Standards Coalition](#) to design and implement equitable standards. In anticipation of future changes, building owners may consider setting more ambitious energy efficiency goals now.



Building energy standards in Action: Woodland, California

[Mutual Housing at Spring Lake](#) is a 62-unit energy efficient development that generates enough on-site solar energy to meet all its energy needs. It has been certified as a **Department of Energy Zero Energy Ready Home**. Energy efficiency measures include lighting, ventilation systems, cool roofs, and heat pumps. Each unit has a monitoring system for residents to track energy usage and adjust as needed. These measures reduce overall utility costs and make housing more affordable for local farmworkers.

Building energy standard resources available to HUD communities

Building Energy Standards:

- **[ENERGY STAR certified buildings](#)** achieve an ENERGY STAR score of 75 or higher on the Environmental Protection Agency’s (EPA) 1-100 scale, indicating the building performs better than at least 75% of similar buildings nationwide. The score is based on the measured energy use of a building calculated by the [ENERGY STAR Portfolio Manager](#) benchmarking tool. Scores account for greenhouse gas emissions and can be improved by reducing energy and reducing water use. The score can also be improved through the implementation of recycling and compost programs.
- **[DOE Zero Energy Ready Homes \(ZERH\)](#)** meet a set of standards that indicate the home is so energy efficient that the implementation of a renewable energy system will offset most or all of the home’s annual energy usage. Criteria can be found in DOE’s [ZERH National Program Requirements](#), and includes that a building is also ENERGY STAR certified. ZERH only applies to new construction.
- **[PHIUS Passive House](#)** meets a passive house standard for energy efficiency, using minimal energy for heating and cooling, and having negligible greenhouse gas emissions. A PHIUS Passive House standard is met through a combination of renewable energy systems and energy efficiency measures tailored to the specific environment of the home.
- **[Home Energy Rating System Index \(HERS\)](#)** is a widely used standard that compares the energy efficiency of the home against other similar homes. A lower score means the home is more efficient.

Building Energy Codes:

- **[Residential building energy codes](#)** are adopted at the state and local level with the support of the DOE. The two major codes are the **International Energy Conservation Code (IECC)** and the **American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)** standard. The [Building Energy Codes Program State Portal](#) provides information on current state energy codes.

Funding Opportunities:

Many Inflation Reduction Act (IRA) and Bipartisan Infrastructure Law (BIL) opportunities provide funding for energy efficiency and renewable energy improvements that will enable building owners to achieve energy standards. Additionally, there is funding available that directly incentivizes reaching specific standards.

- **[The New Energy Efficient Home Tax Credit \(45L\)](#)** provides up to \$5,000 per unit for multifamily and single-family buildings that achieve ZERH certification. This tax credit can be used to offset the cost of reaching the ZERH standard or can be claimed if a building already achieves this standard.
- **[The Commercial Buildings Energy Efficiency Tax Deduction \(179D\)](#)** allows building owners to claim up to a \$5.00 per square foot tax deduction for installing energy efficient building systems that meet key energy reduction requirements based on the ASHRAE Reference Standard 90.1.
- **For more funding opportunities, visit the [Build for the Future Funding Navigator](#) on HUD Exchange and select the “Energy Efficiency and Renewables” project type in the first drop-down box and “Energy Efficient Buildings” project subtype in the second drop-down box.**

These resources are just the start!

Look for other information that matches your needs here:

[Build for the Future](#) — A wealth of technical resources on energy efficiency and resilience

[Build for the Future Funding Navigator](#) — A user-friendly searchable database for IRA and BIL grants

