

# Energy Efficiency

## In a Nutshell

Buildings are responsible for nearly half of the energy used (48.7%) in the U.S. – more than both the transportation and industry sectors. Additionally, buildings account for 46.7% of greenhouse gases emitted. And according to the US DOE, over 30% of all energy entering homes is wasted. Energy efficiency is an affordable solution.

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## The “How To”

Poor heating and air conditioning systems, outdated hot water heaters, and little to no insulation is typical in many buildings. It should be noted that while replacing old leaky windows with new ones may seem like a good idea to improve energy efficiency, that is usually the least justifiable option in terms of cost-benefit. A [home energy audit](#) is recommended, and will often point out that the most cost effective item is a combination of insulation and building sealing.

There is a vast amount of funding opportunities available for energy efficient upgrades, including discounts and rebates from utilities, free energy audit programs for income-qualified families, tax incentives available to homeowners, businesses, and even tax-exempt entities, and more. Please see the Dollars & Cents tab for more information on these programs and cost savings associated with energy efficiency projects.

## Planning & Zoning

Most building codes have minimum requirements for insulation levels, fenestration (windows and other glass), mechanical systems (HVAC and ventilation), ducting, air tightness, lighting, and other items. They are in general aimed at new construction, where the best combination of energy efficiency and cost can be achieved. However, they also address rehab work. When properly implemented by local code officials, these building codes can significantly contribute to the improvement of energy efficiency. Find your local building codes [here](#).

Enacting energy efficiency standards for public buildings or public housing is an excellent opportunity to save money on energy bills while protecting the environment and serving as an example to the broader community. The City of St. Louis, Clayton and Ferguson have all passed ordinances requiring that newly constructed city-owned buildings over 5,000 square feet meet LEED Silver standards. Glen Carbon is completing an [energy master plan](#) to reduce energy in municipal buildings, lower carbon emissions from municipal vehicles, and incentivize local businesses to reduce energy consumption. Additionally, the City of St. Louis passed an ordinance in 2008 outlining energy efficiency requirements for new construction, major renovation and equipment replacement. In 2020, the City of St. Louis passed [Building Energy Performance Standard](#), making St. Louis the 4<sup>th</sup> jurisdiction in the U.S. to take this ambitious path to mandate significant reductions in building energy use.

## Dollars & Cents

Energy efficiency upgrades can be extremely cost-effective. The City of Alton, IL has saved almost \$1 million since 2009 through smarter power procurement, facility and vehicle upgrades, and more efficient use of energy (Source: Matthew Asselmeier, City of Alton Associate Director of Public Relations/City Council Liaison). The City of Columbia, MO implemented [lighting upgrades](#) at their Health Department building in 2011, which were projected to pay for themselves in 8 years. In 15 years (the expected lifetime of the improvements) \$90,000 in energy costs was expected to be saved (1.5 times more than the cost of the project).

**There is a vast amount of funding opportunities available for energy efficient upgrades:**

**Businesses:** Business owners can take advantage of utility incentives in [Missouri](#) and [Illinois](#) and [federal incentives](#) to make their buildings more efficient and save money with renewable energy.

**Individuals:** Individuals can use a [Home Energy Audit](#) to make a plan to make their home more efficient and save money using incentives from utilities in [Missouri](#) and [Illinois](#), available [tax credits and rebates](#), and income-qualified home weatherization assistance in [Missouri](#) and [Illinois](#).

**Government Buildings, Public Schools, and Libraries:** Energy grants and loans are available from [MO Department of Natural Resources](#) for various energy-saving investments, including energy audits, upgrading insulation, lighting systems, heating and cooling systems, windows, and more.

The PACE program offers financing for energy efficiency and renewable energy improvements. [Set the PACE St. Louis](#) provides commercial PACE for businesses located in the City of St. Louis. The [Missouri Energy Savings Program](#) (MOESP), the official St. Louis County PACE Clean Energy Development Board, provides commercial PACE in St. Louis County. [Show Me PACE](#) offers a broad range of benefits to commercial building owners, as well as energy efficiency/renewable energy contractors throughout Missouri.

## Discover More

[Missouri Gateway Green Building Council](#) works on energy efficiency issues for buildings in the St. Louis region.

The [Energy Star Portfolio Manager](#) is a free tool that allows governments or other entities to track and improve efficiency across their entire portfolio of properties. There are additional resources available from [Energy Star](#) and [Energy.gov](#), as well as a [guide](#) from the US DOE.