



Shaping Tomorrow's
Built Environment Today

ENERGY EFFICIENCY FOR BUILDINGS AND HVAC&R EQUIPMENT

THE ISSUE

Energy consumption in the United States set a new record in 2018, with a 3.6% spike from 2017.¹ Because residential and commercial buildings are responsible for about 38% of the total primary energy use,² making them more energy efficient is critical for the economy, the environment and energy security.

Heating, ventilation, air conditioning, and refrigerating (HVAC&R) and water heating account for about 78% of residential³ and 61% of commercial⁴ building site energy use. ASHRAE is dedicated to working with policymakers to find cost effective solutions to make these systems more energy efficient.

From a global perspective, buildings and their construction are responsible for 36% of global energy consumption and nearly 40% of total direct and indirect CO₂ emissions. Improved access to energy in developing countries, increasing ownership and use of energy-consuming devices, and rapid growth in buildings floor area, has caused energy demand from existing buildings and new building construction to rise at nearly 3% per year globally.⁵ Using air conditioners and electric fans to stay cool accounts for nearly 20% of the total electricity used in buildings around the world today.⁶

ASHRAE'S ROLE

ASHRAE members participate in integrated building design, operation and evaluation. They support building sustainability to assure safe, comfortable indoor environments while limiting the impact on the earth's natural resources. ASHRAE collaborates with other leading technical societies and is the leading developer of building energy standards, which can be incorporated into building codes and legislation. In particular, Federal law mandates ANSI/ASHRAE/IES Standard 90.1 as the basis for state commercial building energy codes.

¹ *U.S. Energy Use Rises to Highest Level Ever*. Lawrence Livermore National Laboratory, 11 Apr. 2019, www.llnl.gov/news/us-energy-use-rises-highest-level-ever.

² *Use of Energy in the United States - Energy Explained, Your Guide To Understanding Energy*, U.S. Energy Information Administration, 29 May 2018, www.eia.gov/energyexplained/index.php?page=us_energy_use.

³ *Use of Energy in the United States Explained - Energy Use in Homes*, U.S. Energy Information Administration, 8 Apr. 2019, www.eia.gov/energyexplained/index.php?page=us_energy_homes.

⁴ *2012 Commercial Buildings Energy Consumption Survey: Energy Usage Summary*. U.S. Energy Information Administration, 18 Mar. 2016, www.eia.gov/consumption/commercial/reports/2012/energyusage/index.php.

⁵ *Energy Efficiency: Buildings - The Global Exchange for Energy Efficiency Policies, Data and Analysis*. International Energy Agency, www.iea.org/topics/energyefficiency/buildings/.

⁶ *The Future of Cooling: Key Findings*. International Energy Agency, 15 May 2018, www.iea.org/futureofcooling/.



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ASHRAE's VIEW

ASHRAE helps policymakers address the technical and implementation barriers that can prevent the market from achieving cost-effective energy efficient buildings. The Federal government itself is the nation's largest building owner, and ASHRAE encourages it to lead in these efforts and to encourage other building owners to follow suit.

- Congress should pass legislation that assists states with the adoption, implementation and enforcement of building energy efficiency codes and standards. Code-adopted standards can save more energy than any other policy tool, and consensus standards (e.g., ASHRAE Standard 90.1) help ensure technical and economic feasibility as well as market acceptance.
- Congress should assure that Federal policies related to energy efficiency support market innovation and ensure that government leads by the example of outstanding design, construction and operation of its own buildings, whether owned or leased.
- Congress should appropriate increased funding for research, development, demonstration and deployment to advance energy efficiency and renewable energy technologies and practices. Federal funding for R&D is a critical tool for ensuring that the nation has affordable, clean and reliable energy, and helping stimulate innovation in the private sector.