

Additional Resources on the Infrastructure Investment and Jobs Act (IIJA) and the Inflation Reduction Act (IRA):

ASHRAE Initiatives, DOE Programs, Funding Information and Tax Credits and Deductions

The Infrastructure Investment and Jobs Act (IIJA) and Inflation Reduction Act (IRA), both signed into law this year, are historic efforts to combat climate change, conserve energy, recover from a global pandemic and provide a healthy environment. This legislation will reshape the landscape of energy and transportation infrastructure and that of our built environment. It will also provide funding and technical resources benefitting ASHRAE members, such as the opportunities to pursue grants and loans, secure project opportunities and benefit from various tax incentives. While these are U.S. laws, the combined \$427 billion in funding for energy and buildings infrastructure will have a global impact on the buildings and HVAC&R industry.

Infrastructure Investment and Jobs Act

Workforce Development

The IIJA includes several workforce provisions, including \$40 million for energy auditor training grant programs to develop and sustain the necessary workforce needed to implement and maintain the most energy efficient, cost-effective, health-conscious building codes and standards; \$10 million for building, training and assessment centers for lessening the financial burden of career skills training programs; and another \$10 million to support institutes of higher education that are establishing training and assessment centers specifically to educate and train building technicians and engineers. The law also establishes a new 21st Century Energy Workforce Advisory Board within DOE to support a skilled energy workforce.

Grid Resilience

While ASHRAE members focus on buildings, specifically HVAC&R systems within buildings, multiple provisions are included in the IIJA that will improve and expand energy generation, transmission and the overall electrical grid infrastructure in the U.S. The IIJA provides \$10.5 billion for a new Grid Resilience and Innovation Partnerships (GRIP) through the DOE Grid Deployment Office. This funding includes \$3 billion for the deployment of technologies to enhance grid flexibility through the Smart Grid Investment Matching Grant Program; \$5 billion to demonstrate innovative approaches to transmission, storage, distribution infrastructure and practices to enhance grid resilience and reliability; and \$2.5 billion for Grid Resilience Grants to improve the ability of electric grids to respond to extreme weather and natural disasters, minimizing offline grid time.

The current challenges with electric grid infrastructure stem from a steep increase in electricity consumption: building sector electricity consumption increased by 24% from 2010 to 2019, an average annual growth rate of 2.7%.¹ Without an updated and improved electric grid, many of the

building electrification and decarbonization efforts would fail. Further, many of these programs also address building demand flexibility and storage strategies, which are directly relevant to ASHRAE members. ASHRAE Standards and resources are also relevant to these initiatives, including ANSI/ASHRAE/NEMA Standard 201-2016, Facility Smart Grid Information Model and ASHRAE's Smart Grid Application Guide: Integrating Facilities with the Electric Grid.

Resources

- More information on funding opportunities, workforce development and other programs can be found at <https://www.energy.gov/clean-energy-infrastructure/bipartisan-infrastructure-law-programs>
- Information on energy codes available at <https://www.energycodes.gov/RECI>
- Department of Energy IJA Programs can be viewed at <https://www.energy.gov/bil/bipartisan-infrastructure-law-programs>
- More information on grants for energy improvements at public school facilities can be found at <https://www.energy.gov/bil/grants-energy-improvements-public-school-facilities>

Inflation Reduction Act

Updating Codes and Standards

The Inflation Reduction Act (IRA) provides \$1 billion for states to adopt and enforce the most current building energy codes as well as zero-energy building codes, with \$330 million available for implementing the latest building codes and \$670 million available for implementing zero-energy building codes. Funding can also be used for training programs and measuring the rate of compliance each year. The latest building code section specifically identifies ANSI/ASHRAE/IES Standard 90.1–2019 as an eligible “latest code” along with the 2021 International Energy Conservation Code (IECC).

The zero-energy code grants can be used to help states adopt zero-energy codes that meet or exceed IECC 2021 or an equivalent stretch code. While ASHRAE does not currently have a zero-energy code, Standing Standard Project Committee (SSPC) 90.2 leadership has committed to developing an informative appendix in the 2023 edition that will create an option for zero energy and zero carbon in new and existing residential buildings. SSPC 90.2 further explains that they and ASHRAE both want to strengthen the normative portions of the standard to get about halfway to zero energy (compared to the 2018 publication) in 2023. In future years, Standard 90.1 may achieve greater energy savings and could be used as a strong base for achieving zero energy when combined with other measures such as additional renewable energy generation.

Tax Credits and Deductions

The IRA incentivizes investments in clean energy and efficiency through strengthening tax credits and deductions. The IRA bolsters the 179D commercial buildings energy efficiency tax deduction, which allows building owners to claim tax deductions for building upgrades that improve energy efficiency. The deduction increases from \$0.50/ft² (\$5.38/m²) to up to \$5/ft² (\$53.82/m²), with the eligibility

expanded to include tax-exempt entities. The allocation of the deduction would be received by the primary designer.

The 179D tax deduction is eligible for buildings that achieve 25% lower energy and power costs compared to the most recent version of Standard 90.1, affirmed by both the DOE and Department of Treasury (currently Standard 90.1-2007). While the older edition may increase the number of qualifying buildings, ASHRAE submitted a letter to the Treasury Department advocating for the reference standard to be updated to Standard 90.1-2019, which would not take effect for four years.

A copy of that letter can be found at <https://www.ashrae.org/about/government-affairs/policy-positions-and-issues#letters>

The IRA also extends, increases, and modifies the Nonbusiness Energy Property Credit (25C), which is available for a wide range of residential energy efficiency improvements, including home energy audits. The IRA increases the credit from 10% to 30% of eligible expenses. Further, the amount available increases from \$500 per lifetime to \$1,200 per year. CBO estimates the 25C tax credit will save consumers \$12.45 billion by 2031.² Homebuilders also will benefit from the increase of the Section 45L tax credit from \$2,000 to \$2,500 or \$5,000 for DOE zero-energy ready homes.

Resources

- Details on Tax Changes from IRA: <https://www.irs.gov/inflation-reduction-act-of-2022>

References

1. IEA. 2021. *World Energy Outlook 2021*. Paris: International Energy Agency.
2. Congressional Budget Office. *Estimated Budgetary Effects of H.R. 5376, the Inflation Reduction Act of 2022*.