



Shaping Tomorrow's
Built Environment Today

180 Technology Parkway, NW • Peachtree Corners, GA 30092-2977 • Tel: 404.636.8400 • www.ashrae.org

M. Dennis Knight
2024-2025 ASHRAE President

Whole Building Systems, LLC
921 Pitt St.
Mt. Pleasant, SC 29464
Phone: (843)437-3647
Email: dknight@wholebuildingsystems.com

August 22, 2024

Commissioner Andrew McAllister
California Energy Commission
Docket Unit, MS-4
715 P Street
Sacramento, CA 95814

Re: Docket 24-BPS-01, “Building Energy Performance Strategy Report”

Dear Commissioner McAllister:

ASHRAE, founded in 1894, is a technical and professional society of more than 53,000 members, including over 3,000 in California, that focuses on building systems, energy efficiency, indoor air quality, refrigeration, and sustainability. Through research, standards writing, publishing, certification and continuing education, ASHRAE shapes tomorrow’s built environment today.

We appreciate the opportunity to provide comments regarding the development of the Commission’s Building Energy Performance Strategy Report. We are pleased the Commission is focused on addressing the greatest existing opportunity to reduce energy consumption and carbon emissions by focusing on existing buildings. Currently, the United States has 5.9 million commercial buildings and 124 million residential buildings, which together account for approximately 40% of the nation’s total energy use, 70% of its electricity consumption, and 40% of its carbon dioxide emissions. Existing buildings account for approximately 90% of buildings that will exist in ten years, 75% to 80% of buildings that will exist in 2030, and at least 50% of all buildings that will exist in 2050. Additionally, new buildings become existing buildings as soon as they are occupied. Jurisdictions serious about reducing their carbon footprint need a building performance standard that helps them reduce energy consumption and carbon emissions in their existing buildings.

ANSI/ASHRAE/IES Standard 100, *Energy and Emissions Building Performance Standard for Existing Buildings*, is that standard. It provides processes and procedures for reducing energy consumption and carbon emissions through improved energy efficiency and performance of all types of existing buildings, including residential, commercial, institutional, and industrial. Standard 100 is code-ready—written in mandatory, enforceable language—and can be integrated directly into building codes. It provides owners, utility companies, and government at every level

a verifiable process that can reduce energy costs and support tax incentives, rebates, and related programs.

Included below is a brief overview of the main components of ASHRAE Standard 100 and how each can be utilized as part of a comprehensive Building Energy Performance Strategy:

Multiple Building Performance Metrics

The latest (2024) edition of Standard 100 has targets related to Site EUI (energy use intensity), Source EUI, and GHGI (Greenhouse Gas Intensity). Site EUI is most relevant to what a building owner would see on a regular basis in their utility bills and presents a clear picture of overall building performance. Source EUI applies a source energy conversion factor for different energy sources like renewables and can also bring grid inefficiencies to light. GHGI is the factor that most often directly addresses jurisdictional emissions goals, which are expressed in CO₂-eq (carbon dioxide equivalent.) All of these metrics are powerful tools to better understand and accurately capture a building's performance.

Support and Resources for Building Owners

Tracking building benchmarking data is a good way to begin to prioritize operational adjustments and upgrades. Estimating energy end-use as part of a building energy audit is a worthwhile and reasonable task for anyone looking to affect their facility's energy use. Throughout this process, Standard 100-2024 can provide tools, forms, and charts for reference, as well as lists of energy efficiency and emission reduction measures for building owners. ASHRAE is also able to provide educational content and guidance on this and other standards.

Enforcement Mechanisms

Authorities Having Jurisdiction (AHJs) can focus on priorities such as benchmarking and audits for buildings. These goals are at the core of Standard 100, and the standard is written in mandatory and enforceable language for ease of use. By building on the foundation of the Standard 100, 2024 edition, and continuing to refine based on each jurisdiction's specific needs, Standard 100 can be the model Building Performance Standard for jurisdictions.

Cost Effectiveness

The cost effectiveness calculation methods included in Standard 100-2024 are based on simple payback and life cycle cost methods from the National Institute of Standards and Technology (NIST.) For buildings without EUI and GHGI targets, Standard 100 currently uses a five-year simple payback for the optimized bundle of energy efficiency measures (EEMs) and a ten-year simple payback for an optimized bundle of emissions reduction measures (ERMs). We appreciate that cost effectiveness is an important consideration for both AHJs and building owners, and the relevant ASHRAE committees are able to provide more detailed methodological information upon request.

In closing, we recommend that ASHRAE Standard 100, Energy and Emissions Building Performance Standard for Existing Buildings, be incorporated by reference in the upcoming Building Energy Performance Strategy Report as a model building performance standard. We appreciate the Commission's focus on improving building performance and improving the

lives of California residents. If you have any questions or need additional information, please feel free to contact GovAffairs@ashrae.org.

Sincerely,

A handwritten signature in blue ink that reads "M. Dennis Knight". The signature is written in a cursive style with a large initial "M" and a long, sweeping underline.

M. Dennis Knight
2024-2025 ASHRAE President