

AGENDA
TC 7.6 Building Energy Performance
Monitoring and Energy Performance Subcommittee
2023 ASHRAE Winter Conference, Atlanta, GA
Monday, February 6, 2023, 2:30 – 4:30 pm EST

Purpose: TC 7.6 is concerned with the estimation, measurement, analysis, benchmarking, and management of whole building and building systems energy and water performance. This includes performance and resource management of new and existing buildings. This sub-committee implements this scope by monitoring the state of governmental policy, data, and tools addressing building energy and water performance (especially building benchmarking and energy auditing), and by developing ASHRAE programs and courses on these topics.

1. Introductions

2. ASHRAE Standards and Guidelines

- a. **Standard 100-2018**, *Energy Efficiency in Existing Buildings*
- b. **Standard 105-2021**, *Expressing and Comparing Building Energy Performance and Greenhouse Gas Emissions*
- c. **Standard 211-2018**, *Standard for Commercial Building Energy Audits*
- d. **Standard 189.1**, *Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings*
- e. **Standard 228P**, *Standard Method of Evaluating Zero Energy Building Performance* – Update nearing completion.
- f. **Guideline 14-2014**, *Measurement for Energy, Demand, and Water Savings*
- g. **Guideline 34-2019**, *Energy Guideline for Historic Buildings*
- h. **Guideline 45P**, *Measurement of Whole Building Performance for Occupied Buildings except Low-Rise Residential Buildings*
- i. **AEDG, Achieving Zero Energy series**

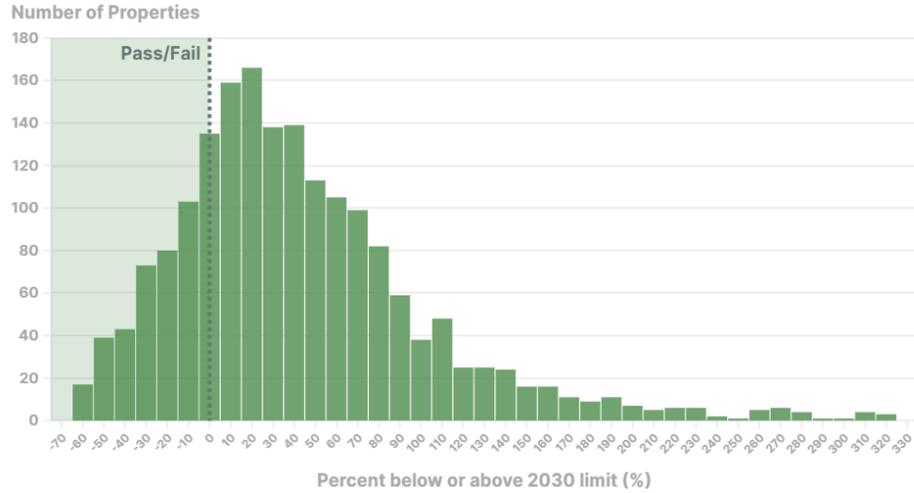
3. Project Announcements and Updates

- a. ASHRAE Building Decarbonization Task Force, Building Performance Standards Working Group (Hinge)
 - i. [Building Performance Standards \(BPS\): A Technical Resource Guide](#) has been published and is available for download. Provides a technical basis for policymakers, building owners, practitioners and other stakeholders interested in developing and implementing a BPS policy

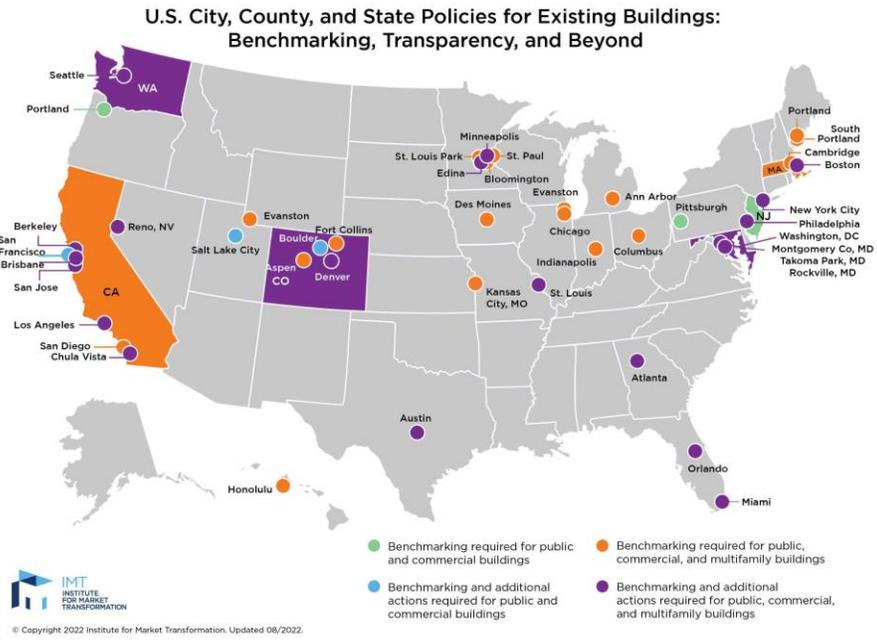
4. Governmental Policy

- a. Municipal
 - i. New York City Local Law 97 Updates:
 1. In December 2022 the [Local Law 97 Advisory Board Report was delivered to NYC DOB](#) and includes a comprehensive set of recommendations on implementing the law.
 2. NYC Department of Buildings finalized Rule 103-14 for Local Law 97. [Unpacking the proposed rules](#): targets for 60 property types, sets a lower (greener) 2030 electricity carbon coefficient, limits RECs to offsetting electricity emissions only.
 - ii. Urban Green Council released [New York City's 2021 Benchmarking Data dashboard](#). Shows decrease in site energy use in 2021, but increase in carbon

emissions. Also shows building energy grades distribution, and percentage of properties about LL97 limits.



- iii. In December 2022 [New York City Council introduced bill Intro 237](#) that would lower the benchmarking threshold to 10,000 square feet, and would require 23,000 new properties benchmark.
- iv. As of July 2022, nearly 50 U.S. jurisdictions that require benchmarking. Latest jurisdictions to pass ordinances: [Aspen, CO](#); [Chelsea, MA](#); [Honolulu, HI](#); [Lexington, MA](#); [Maryland, Massachusetts](#)
 1. IMT Matrix: https://www.imt.org/wp-content/uploads/2022/06/IMT-Benchmarking-Matrix_July-2022.pdf
 2. IMT Map: <https://www.imt.org/resources/map-u-s-building-benchmarking-policies/>



- v. In July 2022 [Washington DC passed the clean building legislation](#) which requires all new buildings and substantial renovation to be net-zero by 2026 and bans natural gas use in most buildings.
 - vi. In December 2022 Los Angeles passed an ordinance [requiring that all new buildings be all-electric](#).
- b. State
- i. In December 2022 the [State of California joined the National Building Performance Standards Coalition](#)
 - ii. As of January 2023, there are [38 jurisdictions participating in the National BPS Coalition](#). Recent signatories include Los Angeles County and the City of San Diego.
 - 1. IMT Map: <https://www.imt.org/resources/map-national-bps-coalition-participating-jurisdictions/>



- iii. IMT has released two new modules on [BPS and resilience](#) and [BPS and housing affordability](#).
 - iv. In December 2022 [New York Climate Action Council approved a plan](#) that includes bans on fossil fuel use for space and water heating in new homes by 2025, and for replacement of existing systems in 2030. Also calls for cap and trade program.
 - v. In September 2022 the California Air Resources Board voted to [require all new space and water heaters sold in CA to have no emissions](#).
 - vi. Southern Nevada Water Authority Board of Directors approved a [moratorium on cooling towers and evaporative coolers](#) that goes into effect in 2023.
- c. U.S. Federal
- i. In December 2022, the Biden-Harris Administration announced the first-ever [Federal Building Performance Standard](#). Requires agencies to achieve zero Scope 1 on-site fossil fuel emissions in 30 percent of their buildings (by square footage) by fiscal year 2030.
- d. International

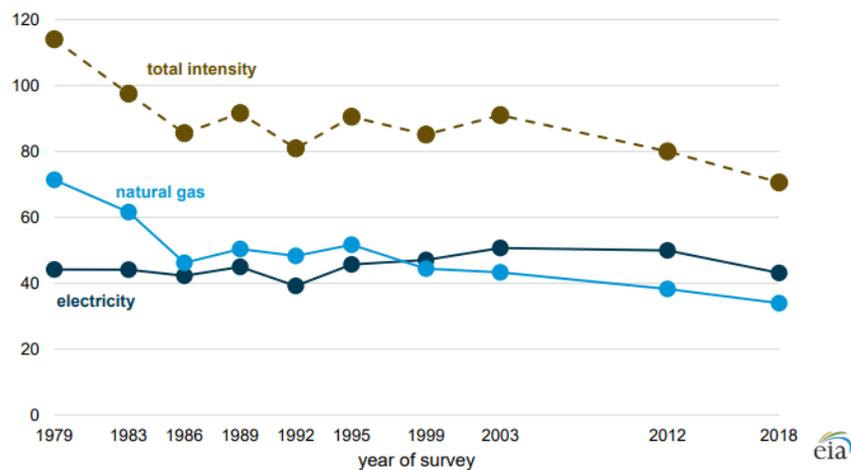
- i. In October 2022 EU member states agreed on a proposal for a [BPS/Minimum Energy Performance Standard \(MEPS\) as part of the Fit for 55 package](#), a set of proposals to revise and update EU legislation towards reaching the EU’s climate goal of reducing EU emissions by at least 55% by 2030.

5. Data and Databases

a. CBECS

- i. [2018 CBECS final consumption and expenditures results and microdata](#) were released in December 2022
 - 1. [Flipbook highlights](#): Commercial buildings overall consumed 12% less total energy per square foot in 2018 compared to 2012.

Energy intensity by select fuels, 1979–2018
thousand British thermal units per square foot



- 2. [Today in Energy article](#) shows end use breakdown by building type
- ii. Analysis from EPMI computes [EUI percentiles for different building types](#) using 2018 CBECS microdata (similar to ASHRAE Handbook Applications Ch 37)

b. RECS

- i. In September 2022 EIA held a [webinar to review 2020 RECS housing characteristics results](#).
- ii. In December 2022 EIA released report on [RECS multifamily building pilot](#) to assess the feasibility of collecting data on multifamily buildings.

c. BPD

d. Other

- i. Analysis from EPMI tracks drop in [U.S. site-to-source ratio for electricity generation from 1960-2020](#)

6. Benchmarking Tools

a. ENERGY STAR

- i. EPA is proposing a new [ENERGY STAR NextGen certification for commercial and multifamily buildings](#), designed to encourage top energy performance, use of renewable energy, and electrification. Currently accepting comments; intended to be available in late 2023/early 2024.
- ii. [Latest ENERGY STAR Data Trends report](#) examines how the energy use of U.S. office buildings has changed over the past two decades and how ENERGY STAR certified office buildings have performed by comparison

- iii. [1-100 ENERGY STAR Score](#) for U.S. Single-Family Homes Now Available in Portfolio Manager
- b. Other tools
 - i. Building EQ
 - ii. DOE Asset Score

7. ASHRAE Sessions of Interest

Sunday, February 5 3:15 PM – 4:45 PM, Panel 2 (Basic)

LIVESTREAM: U.S. Federal Programs: New and Expanded Opportunities for High-Performance, Low-Carbon, Resilient Buildings

Monday, February 6, 8:00 AM - 9:30 AM, Seminar 27 (Intermediate)

Level of Detail for Energy Modeling

Monday, February 6 8:00 AM – 9:30 AM, Debate 1 (Intermediate)

Winner Takes All: Potential Impacts of Tradeoffs between Operational and Lifecycle Carbon

Tuesday, February 7 9:45 AM – 10:45 AM, Seminar 44 (Intermediate)

Seminar 44: LIVESTREAM: Innovative and New Ideas: BAS Best Practices for O&M Success

Tuesday, February 7 9:45 AM – 10:45 AM, Seminar 46 (Intermediate)

ASHRAE Building Decarbonization Update

Wednesday, February 8 9:45 AM – 10:45 AM, Seminar 62 (Intermediate)

The Risk of Decoupling Efficiency and Decarbonization

Wednesday, February 8 11:00 AM – 12:30 PM, Seminar 67 (Basic)

SPIRE, WELL, Building EQ: New Certifications for Smart, Healthy and Efficient Buildings