

Leveling up Building Performance Standards



Zack Hart, Cliff Majersik, Julia Eagle Summer Study 2022

The What is a Building Performance Standard? (BPS)

1

A policy that establishes standards for buildings to improve performance including reducing energy use or GHG emissions

2

Compliance takes place over a long timeframe, with intermediate reporting and compliance periods 3

The policy becomes more stringent over time

Requires impactful changes to buildings while offering flexibility in how and when building owners make those changes



Fundamental Change to How We Approach Buildings



Building Performance Standards are the most powerful policy tool available to drive improved building performance



IMT's BPS Model Law

- IMT published the first model law for building performance standards in January 2021
- Incorporates lessons learned from adopted BPS
- Reviewed by expert stakeholders in real estate, social equity, building science, building performance policy
- www.imt.org/bps
 - IMT Model BPS law
 - Summary of law
 - Summary presentation







Principles

- 1. Align with goals/commitments
- 2. Social and racial equity
- 3. Regulatory fairness
- 4. Jobs and economic growth
- 5. Maximize certainty
- 6. Transparency
- 7. Drive early action
- 8. Accommodate building life cycle events
- 9. Simplicity
- 10. Ease of compliance/ implementation

What Makes a BPS Different?

Requires Improvement Across a Wide Range of Buildings

Yields Deep Retrofits at Scale Drives Private Value, Creating Investment in Private Buildings

Provides Comprehensive Approach to Performance Balances Flexibility and Immediate Action

Sends Long-Term Signal

BPS: A Platform for Building Regulation



How IMT's BPS Strategy Addresses Building Performance



Standards Based on Performance Metrics

- Site Energy Use Intensity
- Onsite and District Thermal GHGs
- Water Use Intensity
- Coincident Peak Demand



Actions to Advance Social Priorities

- Anti-displacement, affordable housing protections packaged with BPS
- Owners seeking additional flexibility required to advance other community priorities





IMT's Model BPS Ordinance: Trajectory Model

Example: Final and Interim Standards for 3 Office Buildings



TIME



Compliance Example



IMT

INSTITUTE FOR MARKET TRANSFORMATION

Compliance Flexibility: Building Performance Action Plan (BPAP)

- Method by which building owner can propose an alternative compliance plan to avoid penalties for missing upcoming standard(s)
- The BPAP, if approved, is a binding agreement between building owner and jurisdiction
- Newly created attachment to building's deed and any for-sale listings shall reference BPAP

What if a Building Does Not Meet the Standard?

If a building misses an interim or final performance standard, its owner must pay an **alternative compliance payment**.

Payment amount shall proportionally reflect

- The number of standards with which the owner failed to comply
- The magnitude of non-compliance for each un-met standard
- The assessed value of the property

Resulting revenue funds improvements to buildings serving disinvested communities as directed by a **Community Accountability Board**







Cliff Majersik Senior Advisor <u>cliff@imt.org</u> Twitter: @IMTCliff

For more info: www.imt.org/bps





Recommended Performance Metrics



Recommended Metrics for Performance Standards

- Maximum Normalized Site Energy
 Use Intensity
- Maximum Onsite Greenhouse Gas Emissions
- Maximum Coincident Peak Electric
 Demand
- Maximum Coincident Peak Local Electric Demand
- Water Use Intensity



Maximum Normalized Site Energy Use Intensity (kBtu/sq. ft./year)

- Owners have more control over site EUI than source EUI
- Site EUI favors electrification because it is not adjusted for energy losses from transmission and distribution
- ENERGY STAR Portfolio Manager can normalize site EUI for weather for all properties. IMT is collaborating with building owners, state and local governments, trade organizations, and the EPA to determine the feasibility of normalizing for other property use characteristics such as hours of operation and number of workers.





Maximum Onsite and District Thermal Greenhouse Gas Emissions

- Requires owners to reduce and ultimately phase-out use of fossil fuels such as gas
- Metric works with site EUI to encourage electrification and require the reduction of overall energy consumption
- Ordinance does not set a standard for GHGs attributable to electricity purchased from the grid in part because time of use data is not widely available





Maximum Coincident Peak Electric Demand Maximum Coincident Peak Local Electric Demand

- Coincident Peak Electric Demand is a property's electricity demand when total system demand on the **utility** serving the property was at its highest point for the year
- Coincident Peak Local Electric Demand is a property's electricity demand when total system demand on the electric substation serving the property was at its highest point for the year
- These metrics allow jurisdictions to limit buildings' electricity demand at peak times
- Most jurisdictions will have to wait to implement standards until necessary data, metering technology and digital communications infrastructure are widely available





Water Use Intensity (kgal/sq. ft./year)

 In areas where reducing water consumption is a priority, IMT recommends a performance standard based on buildings' water use intensity







Advisory Boards



Community Accountability Board

- Composed of experts in racial and social equity, representatives of local community organizations
- CAB tasked with reviewing impact of ordinance on disinvested communities and recommend actions to increase equity
 - Allocation of funds earmarked for disinvested communities
 - Produce periodic report evaluating equity impacts
 - Advise on selection of members to Building Performance Improvement Board
 - Advise on rules and complementary programs

Building Performance Improvement Board

- Appointed by the Mayor/Governor
- Equitable representation required
- Board responsibilities:
 - Advise on development of rules and regulations
 - Recommend complementary programs
 - Review appeals
 - Establish Technical Committee

Technical Committee

- Sub-group of Board consisting of technical experts
- Recommends Final Performance Standards for each property type
- Reviews properties' proposed Building Performance Action Plans and recommends approval/disapproval to the Board



BPS Financial Penalties

BPS policies have penalties associated with non-compliance, such as:

- New York City: \$268 per metric ton of CO2e* per year
- Boston: \$234 per metric ton of CO2e* per year
- Colorado: Civil penalty of up to \$2000 for first violation, up to \$5000 for each subsequent violation