Leveling up Building Performance Standards

Zack Hart, Cliff Majersik, Julia Eagle

Summer Study 2022
<table>
<thead>
<tr>
<th></th>
<th>What is a Building Performance Standard? (BPS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A policy that establishes standards for buildings to improve performance including reducing energy use or GHG emissions</td>
</tr>
<tr>
<td>2</td>
<td>Compliance takes place over a long timeframe, with intermediate reporting and compliance periods</td>
</tr>
<tr>
<td>3</td>
<td>The policy becomes more stringent over time</td>
</tr>
<tr>
<td>4</td>
<td>Requires impactful changes to buildings while offering flexibility in how and when building owners make those changes</td>
</tr>
</tbody>
</table>
BPS has reached 10 jurisdictions in 3 years

- NYC, DC, Washington State
- NYC, DC, NC, Boulder, Berkeley, Philly, Seattle, Boston, Chicago, Minneapolis, Cambridge, MoCo, MD, Atlanta, LA, Orlando, PGH, Portland, ME, S Portland, ME, St Louis, SLC, Ft Collins, San Jose, Denver, Evanston, LA, Orlando, PGH, Portland, ME, Des Moines, Reno

# of Policies Passed

- 2008: 0
- 2009: 0
- 2010: 0
- 2011: 0
- 2012: 0
- 2013: 0
- 2014: 0
- 2015: 0
- 2016: 0
- 2017: 0
- 2018: 0
- 2019: 0
- 2020: 0
- 2021: 0
- 2022: 0

Benchmarking Policies Passed

- National BPS Coalition Announced

Building Performance Standards Passed
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
- Drives Private Value, Creating Investment in Private Buildings
- Yields Deep Retrofits at Scale
- Sends Long-Term Signal
- Provides Comprehensive Approach to Performance
- Balances Flexibility and Immediate Action
BPS: A Platform for Building Regulation

- Decarbonization + Electrification
- Inclusiveness + Equity
- Grid Reliability + Flexibility
- Utility Bill Affordability
- Resilience + Public Health
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
Compliance Example

Lighting Upgrade & Building Tune-Up

Envelope Upgrade

Mechanical Upgrade

Baseline Year | Interim Standard 1 | Interim Standard 2 | Final Standard

Default straight line trajectory
Actual performance
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
cliff@imt.org
Twitter: @IMTCliff

For more info: www.imt.org/bps
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
• 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.
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.
• In areas where reducing water consumption is a priority, IMT recommends a performance standard based on buildings’ water use intensity
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
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

*CO2e = Carbon dioxide equivalent