Building Performance Standards Advancements in Minnesota

Meeting 2 – 10.16.2024







Agenda

- Introductions
- Involvement throughout the process
- How targets are commonly set
- Compliance pathways
- Penalty guidance













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About the Institute for Market Transformation (IMT)



Mission

Catalyze widespread and sustained demand for high-performing buildings.



Vision

A world where buildings dramatically lower greenhouse gas emissions and support our physical, social, and economic wellbeing.



How we work

Advancing policies and business practices that enable people to build and operate healthy, high-performing buildings.







Build upon existing benchmarking policy



Set practical milestones and targets using best practices



BPS should align with our state's economy wide GHG reduction goals

This policy will require significant ongoing funding, and we should leverage existing sources as much as possible



Utilities will be able to claim savings and support retrofits





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Informing BPS Policy

 The jurisdiction's carbon emissions reduction commitments set the overall goals for the BPS

Climate Goals

Community Priorities

 Community engagement informs BPS design and how it will address community priorities Stakeholders provide input into the technical and logistical feasibility of meeting performance standards

> Stakeholder Expertise

Technical Analysis

 Data from benchmarking and other sources inform the setting of BPS targets The climate goals, community priorities, stakeholder expertise, and data driven technical analysis informs the final policy

Final Policy





Stakeholder Involvement in the Process

Pre-Leg Session

- Purpose: Inform high level policy framework
- Opportunities:
 - Large stakeholder meetings
 - Meetings with specific organizations and stakeholders
 - Informal 1:1s

Leg Session

- Purpose: Inform the legislation
- Opportunities:
 - Large stakeholder meetings (likely less often)
 - Informal 1:1s

Rulemaking

- Purpose: Inform detailed rules for <u>implementation</u> process
- Opportunities:
 - Advisory Committee
 - Informal workshops and input before official rulemaking
 - Official rule making meetings
 - Official comment periods





Legislation

- 1. Sets global target
 - e.g., XX% energy or emissions reduction across the whole building set
- 2. Sets directive building targe
 - E.g. linear path compliance dat
 - Special conside building type, ownership, condition, use, etc.)
- 3. Sets flexibility directives for exemptions, extensions, and target adjustments
- 4. Establishes penalties guidelines

Rules

 Rulemaking takes place after and at the directive of adopted legislation

Individual building targets will NOT be set in legislation.

gets based

 Sets mechanisms and processes for compliance reporting and verification





Decision points

Legislation

- 1. Sets global target
 - XX% EUI reduction across the whole building set
- 2. Sets directives for developing individual building targets
 - E.g. linear path that decreases from first to last compliance date
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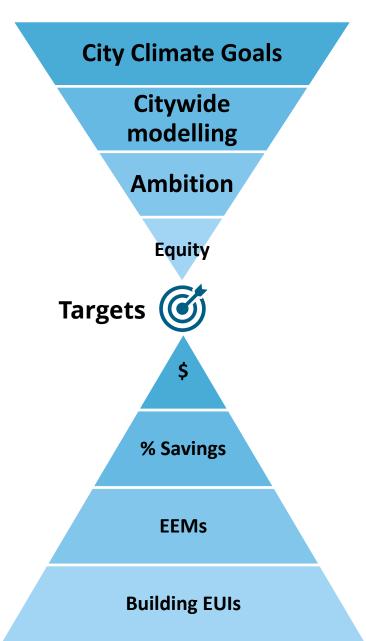


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Target Principles

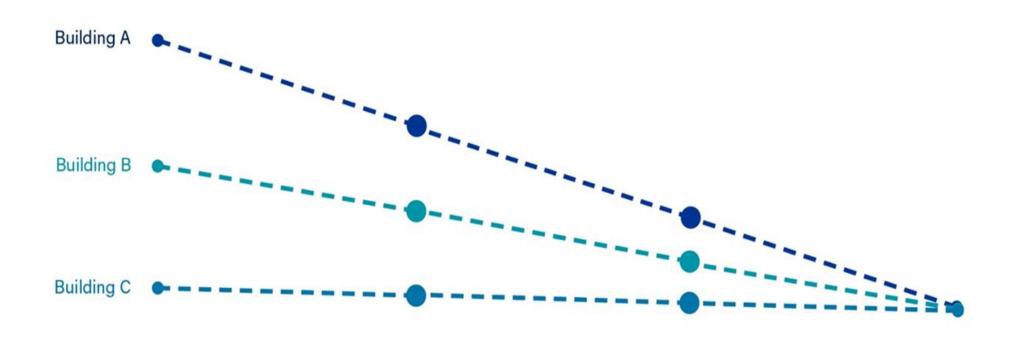


Common Principles:

- Flexibility
- Long-term clarity
- Efficient buildings receive credit
- Specific targets for different building types
- Similar percentage of building stock covered for different building types
- Address equity risks
- Reasonable costs



Trajectory Approach







Approaches to Setting BPS Performance Thresholds

Surveys

Jurisdictionspecific Benchmarking Medians using recent baseline (DC, St. Louis) National Standards derived from surveys, e.g. ASHRAE 100 (Washington, Oregon)

Local

Modeling and Statistics based on local or reference datasets (NYC, Vancouver)

Global
Decarbonization
Trajectories
(SBTi, CRREM)

Regional / National / Global

Modeling



What defines a good benchmarking data set?

Important

- ✓ Completeness (within a geography) -- 75%+ reporting
- ✓ Geographic coverage across applicable climate zones
- ✓ Recent data recent baseline important
- ✓ Includes **whole building data**, especially for multifamily
- ✓ Ideally, independently verified

Less Important

- × Coverage across the full state
- × Going back to some prior baseline (code baseline for example)
- × Uses same GHG methodology these can be adjusted for!
- ➤ Minnesota has sufficient benchmarking data from over 2,000 buildings from multiple cities from Minneapolis to Rochester to St. Paul at least 1/3 of all building expected for Climate Zone 6A
- > Supplemental data like ASHRAE 100 / CBECS will be needed for Duluth region in Climate Zone 7A



Standard setting: Goals and Baseline Datasets

Set Goals

GHG and/or Energy Reduction goals statewide

Goals and timeline for covered buildings

Benchmarking Dataset

Baseline dataset: Recent, high compliance rate benchmarking data

Clean and normalize Dataset

Validate for completeness of utility data

Fill gaps by applying distribution across building stock

Modeled / Reference Dataset

Reference Dataset:

Reference benchmarking data / audit data / national surveys

Standard tables (e.g. ASHRAE 100)

Apply statistically across building stock

Validate for completeness against GHG inventories



Standard setting: Targets

For areas where targets are all from estimated data, collect real data and evaluate if target adjustments are needed, before enforcing!

- Calculate % reduction across dataset needed
- Optional: Model EEMs that can achieve redcutions
- Set percentile targets

Calculate Reductions

Set EUI targets

- EUI targets by building type and climate zone
- Based on percentile for most building types
- National data for uncommon buildings

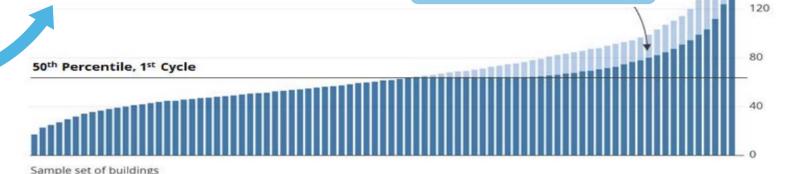
- Set building baselines
- Buildings must meet target by final date, on trajectory from baseline
- Many buildings will meet standard!

Apply targets

kBtu/ft² 240

200

160







• Questions?

We have some for you! Please join our Mentimeter:

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Exemptions, Extensions, Adjustments in Draft Bill

Exemptions available for buildings experiencing:

- Is in a current state of financial distress
- <50% occupancy</p>
- Have demolition permit
- Haven't used energy in 30 days
- Meeting target would cause financial hardship for interim target

Extensions available for buildings:

- That apply in a timely manner and as approved by commissioner
- Affordable housing using federal financing

Adjustments available for buildings:

• That apply in a timely manner and as approved by commissioner



Common flexibility cases in a BPS bill

Current Financial Distress

Temporary exemption/extension

Major Renovation

 Temporary exemption + post-renovation compliance assurance

Pending Demolition

 Temporary exemption that becomes permanent post-demolition

Vacancy > 50%

Temporary exemption/extension

New Owner

 Short Extension for new owner to get up to speed

Affordable Housing

 Extension to align compliance with capital availability (e.g., LITEC) Legislation names a few options + authorizes agency to add others as needed



Flexibility cases that could be addressed through rulemaking

Capital cycles

- BPS may be less cost-effective if equipment already replaced recently
- Important to plan for long-term compliance

Financial hardship concerns

- Some programs offer additional flexibility to avoid putting building in financial distress
- Requires careful regulaotry review

Standardized Target adjustments

- Better to adjust standard than re-normalize EUI
- Standard adjustments available for uses like operating hours, swimming pools, data centers...

Campuses

- Compliance typically at campus level
- Long-term extension option to support district energy system transitions in some jurisdictions

Portfolio-based approaches

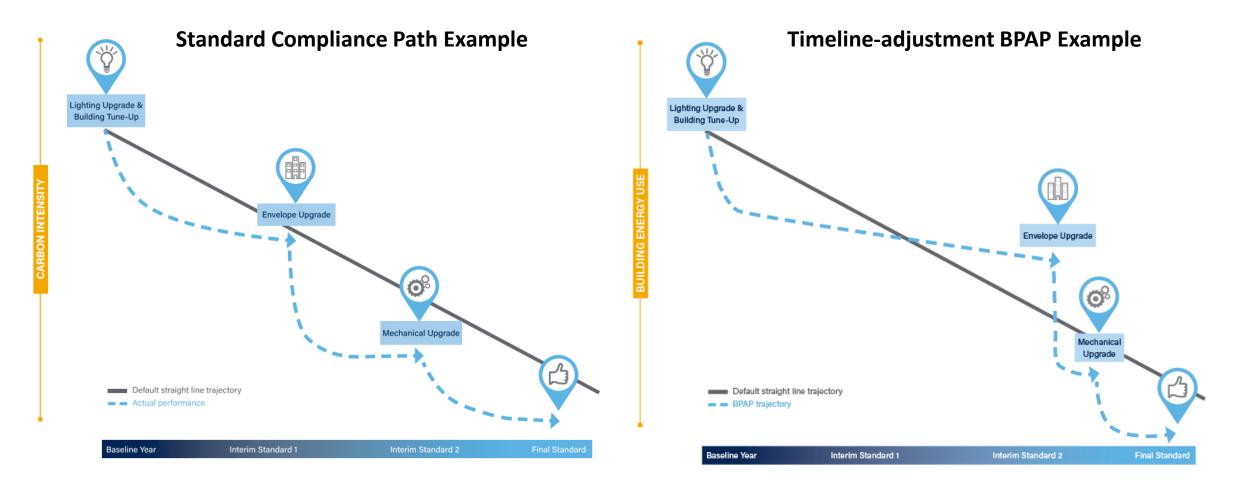
- Only Boston has for all buildings
- Many have this approach for public sector buildings

A Building
Performance Action
Plan can help with
this

Requires planning and analysis



Building Performance Action Plan



BPAP design and application can vary in several ways; option 2 is shown on the right above. :

- adjusting an interim or final standard,
- 2. adjusting interim or final timeline for compliance to account for capital replacements,
- 3. adjusting what has to be done to achieve the final target, and
- 4. adjusting enforcement.



Alternative Compliance Pathways: a need for standardization

- We've heard from you there is a strong need for both standardization and flexibility
- Every jurisdiction is handling this differently
- R&D on this topic is ongoing and will be available to support rulemaking
 - Example: DOE just issued IMT and its partners a grant to develop an improved, standardized alterative compliance pathway framework, along with tools to support implementation. Draft will be completed by end of 2025.







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Cost of Compliance – What we know

Cost of Compliance: First/Capital Costs

- Preliminary LBNL modeling for MN: \$12 per sq. ft.
- Studies in DC, Boston, Denver, Vancouver all found costs of \$9 to \$17 per sq. ft.

Cost of Compliance: Lifecycle Costs

 When converted into lifecycle carbon abatement cost, costs are often comparable to EPA Social Cost of Carbon (see recent IMT paper)

Cost of Non-Compliance

- Often set, intentionally, to be higher than estimated average cost of compliance
- This is true in DC, Boston, Denver, Vancouver, Seattle, NYC, etc.

IMT Cost recommendations

- Capital costs should be compared to a 'business-as-usual' like-for-like replacement
- Look at costs over full equipment lifetime
- Account for cost of carbon
- Use "payment" instead of "penalty" to allow cost-sharing and reinvestment



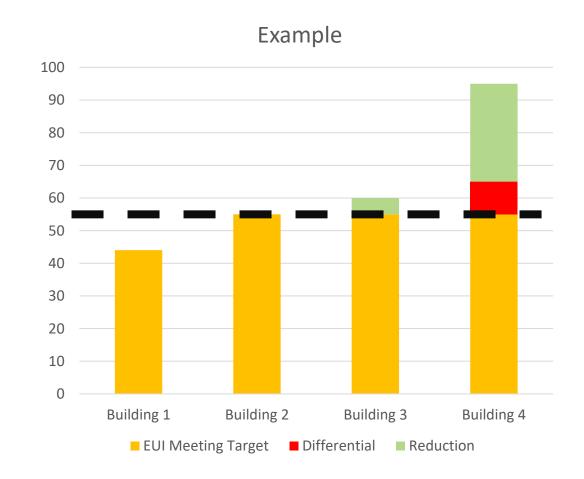
Penalty guidance currently in the draft bill

- Based on differential between the target and building's performance in compliance year.
- \$ factors determined by the Dept. in rulemaking
 - EUI up to \$0.70/kbtu
 - GHG based on PUC greenhouse gas emissions valuation adopted under section 216B.2422, subdivision 3
- EUI penalties only apply if GHG target is met but EUI is not AND if building is in lower half of Benchmarking rankings





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Proposed changes to penalty language

- Reevaluate the \$/kbtu range based on new information
- Provide direction for rulemaking for determining final \$/kbtu penalty.
 - A penalty should incent compliance
 - "Credit for trying" Based on differential between the target and building's performance in compliance year.
 - Cost of carbon should be a consideration







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Next Steps

- Upcoming sector focused meetings:
 - Affordable housing 10/21
 - Architecture stakeholders TBD
- BPS Meeting #3 10/31



THANK YOU!

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