



# Building Performance Standards (BPS) Where Are They Now & Where Are They Going?

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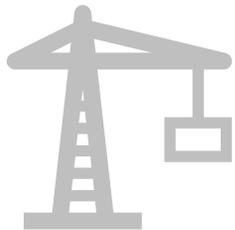


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# What We Do:

NBI's work targets the aspects of the built environment that can make the greatest impact for the climate.

**New Construction**



**Existing Buildings**



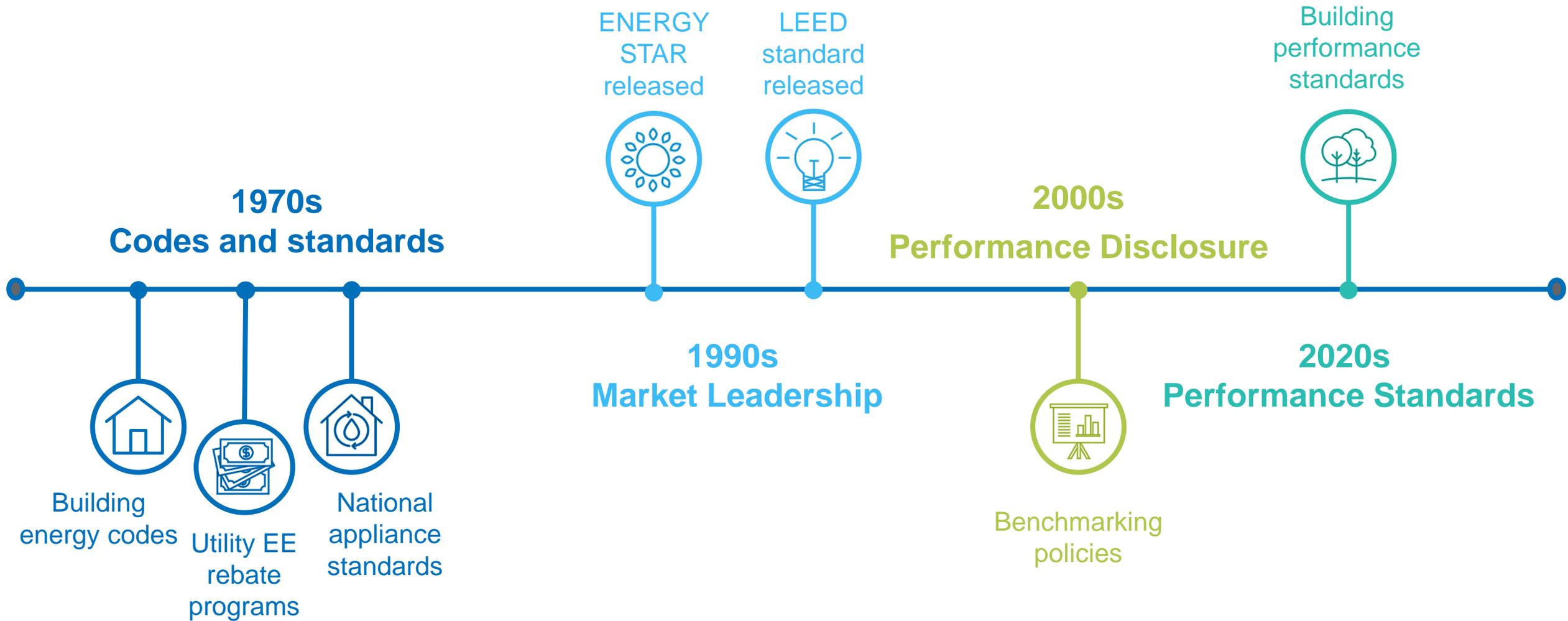
**Zero Energy**



**Codes & Policy**



# Generational Shift in Building Regulation



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# What is a Building Performance Standard?

- Establishes targets for building to reduce energy use or GHG emissions
- Long-term timeframe, with intermediate reporting and compliance periods
- Requires all buildings to hit a final defined target



# Four Key Components of Building Performance Standards (BPS)

1. The **scope** of the policy in terms of the buildings that it covers

2. The **metrics** used to measure performance

3. The associated performance **targets**, and

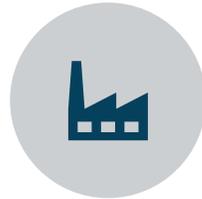
4. **Implementation** mechanism and timeline

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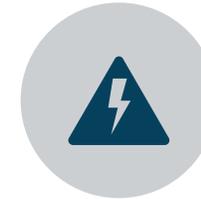
# Building Performance Standards Can Address Multiple Goals



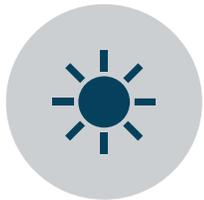
Energy Efficiency



Greenhouse Gas Emissions Reductions



Electrification



Renewable Energy



Water Efficiency

# Metrics Summary



## Common Metrics

- ENERGY STAR Score
- Site EUI
- Source EUI
- GHG Intensity

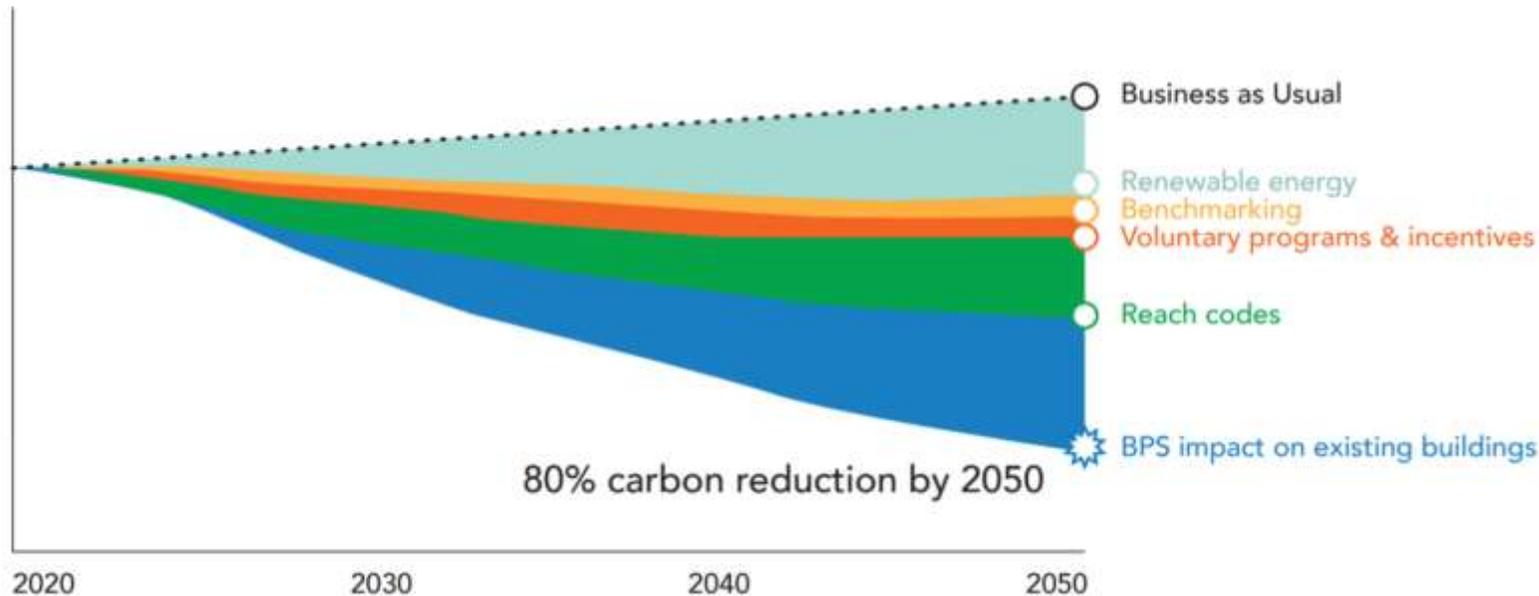
## Potential Metrics

- Peak Electric Demand
- Time Dependent Energy
- On-site Combustion Limits
- Thermal Energy Demand Intensity (TEDI)
- Total Systems Performance Ratio (TSPR)

# BPS Metrics & Electrification

<b>Metrics</b>	<b>Ramifications for Electrification</b>
<b>Site EUI</b>	<ul style="list-style-type: none"><li>• Incentivizes electrification, particularly efficient electrification</li></ul>
<b>Source EUI</b>	<ul style="list-style-type: none"><li>• Disincentivizes electrification due to high source multiplier for electricity</li></ul>
<b>ENERGY STAR Score</b>	<ul style="list-style-type: none"><li>• Based on source energy: disincentivizes electrification</li></ul>
<b>GHG Intensity</b>	<ul style="list-style-type: none"><li>• Magnitude of electrification incentive is dependent on decarbonization of electricity grid</li><li>• If targets are not set more aggressively than grid decarbonization, it will only incentivize electrification and not efficiency</li><li>• Expandable to also include embodied carbon</li></ul>

# Scale of Impact on Existing Buildings



- Building Performance Standards regulate existing buildings.
- There are 5.9 million commercial buildings in the US comprising 97 billion square feet.
- Nationwide, buildings account for almost a third of annual GHG emissions.

# State and Local Building Performance Standards

State and Local Building Performance Standards



Updated as of 12/31/22

# Jurisdiction Energy Code and BPS Metric

Location	Energy Code	BPS Metric
New York, NY	NYStretch	GHG
Washington, DC	ASHRAE 90.1-2013	ENERGY STAR Score
St Louis, MO	IECC 2018	Site EUI
Boston, MA	MassStretch	GHG
Montgomery County, MD	IECC 2018	Site EUI
Denver, CO	IECC 2018	Site EUI
Colorado	Varies	TBD
Washington	IECC 2018	Site EUI
Chula Vista, CA	California Title 24, Part 6	ENERGY STAR Score

# Building Performance Standards Examples



## Washington DC

**Size:** 10,000 ft<sup>2</sup>

**Measuring:** Energy

**Metric:** ENERGY STAR

*Standard is recalculated each compliance cycle*



## New York City

**Size:** 25,000 ft<sup>2</sup>

**Measuring:** Carbon

**Metric:** kgCO<sub>2</sub>e/ft<sup>2</sup>

*Standard increases in stringency each cycle, those levels have been identified through 2034*



## St. Louis

**Size:** 50,000 ft<sup>2</sup>

**Measuring:** Energy

**Metric:** Site EUI

*Standard is recalculated each compliance cycle*



## Washington State

**Size:** 50,000 ft<sup>2</sup>

**Measuring:** Energy

**Metric:** EUI

*Targets under development – will be updated in 2029 and every 5 years after*



## Denver

**Size:** 25,000 ft<sup>2</sup>

**Measuring:** Energy

**Metric:** EUI

*Standard will be updated in 2030 – trajectory approach*

# The Future of Building Performance Standards

- In January 2021, President Biden announced the formation of the National BPS Coalition, with more than 30 participating local governments committed to adopting a BPS by 2024.
- Alignment of:
  - Code and BPS
  - New Construction and BPS
- Incorporating the addition of other elements into BPS like resilience, water, and air quality.
- Identifying and addressing equity concerns



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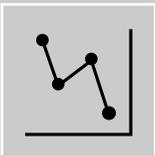
# The Future of Building Performance Standards and Utilities



Be involved in the early stakeholder engagement and development of Building Performance Standards



Ensure utility programs align with BPS policies



Provide data sharing access

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# Resources

[Building Performance Standards – A Framework for Equitable Policies to Address Existing Buildings](#)

[The New Challenge for New Construction: The Intersection of Energy Codes and Building Performance Standards](#)

[The Technical Basis of Building Performance Standards](#)

[Raising the Standard: Building Performance and the Reshaping of Urban Energy Regulation](#)



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**Thank you.**  
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