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**VIRTUAL/TELECONFERENCE**  
**WISCONSIN ADVISORY COUNCIL ON BUILDING SUSTAINABILITY**  
**Virtual, 4822 Madison Yards Way, Madison**  
**Contact: Brad Wojciechowski (608) 266-2112**  
**October 27, 2023**

*The following agenda describes the issues that the Council plans to consider at the meeting. At the time of the meeting, items may be removed from the agenda. Please consult the meeting minutes for a record of the actions of the Council.*

**AGENDA**

**9:00 A.M.**

**OPEN SESSION – CALL TO ORDER – ROLL CALL**

- A. Adoption of Agenda (1-2)**
- B. Approval of Minutes of July 14, 2023 (3-4)**
- C. Reminders: Conflicts of Interest, Scheduling Concerns
- D. Introductions, Announcements and Recognition
- E. Administrative Matters – Discussion and Consideration**
  - 1. Department, Staff and Council Updates
  - 2. Council Members
    - a. Austin, Benjamin V.
    - b. Dyer, Megan C.
    - c. Eber, Alan H.
    - d. Hackel, Scott P.
    - e. Herrmann, Monika S.
    - f. Nergard, Missy A.
    - g. Nino Torres, Victor G.
    - h. O'Brien, Timothy M.
    - i. Sayu, Francisco J.
    - j. Swartz, Keith A.
    - k. Weber, Christina Louise
- F. Public Agenda Request: Presentation, Ben Rabe – New Buildings Institute (5)**
  - 1. Regional Implications for Sustainable Buildings (6-46)
- G. Presentation: Tim O'Brien, Spec Building Design to Reflect Energy Costs and Savings (47)**
- H. Wisconsin Advisory Council on Building Sustainability Subcommittee Processes – Discussion and Consideration**

- I. Administrative Rule Matters – Discussion and Consideration**
  - 1. Pending and Possible Rulemaking Projects
- J. Legislation and Policy Matters – Discussion and Consideration**
- K. Discussion and Consideration of Items Added After Preparation of Agenda:**
  - 1. Introductions, Announcements and Recognition
  - 2. Administrative Matters
  - 3. Election of Officers
  - 4. Education and Examination Matters
  - 5. Credentialing Matters
  - 6. Legislative and Policy Matters
  - 7. Administrative Rule Matters
  - 8. Council Liaison Training and Appointment of Mentors
  - 9. Informational Items
- L. Public Comments**
- M. ADJOURNMENT**

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October 27, 2023**

**WISCONSIN ADVISORY COUNCIL ON BUILDING SUSTAINABILITY  
2023 WISCONSIN ETHICS AND PUBLIC RECORDS LAW FACILITATED TRAINING  
9:30 A.M. OR IMMEDIATELY FOLLOWING THE FULL COUNCIL MEETING**

A quorum of the Wisconsin Advisory Council on Building Sustainability may be present; however, no Council business will be conducted.

\*\*\*\*\*  
**MEETINGS AND HEARINGS ARE OPEN TO THE PUBLIC, AND MAY BE CANCELLED WITHOUT NOTICE.**

Times listed for meeting items are approximate and depend on the length of discussion and voting. All meetings are held virtually unless otherwise indicated. In-person meetings are typically conducted at 4822 Madison Yards Way, Madison, Wisconsin, unless an alternative location is listed on the meeting notice. In order to confirm a meeting or to request a complete copy of the board’s agenda, please visit the Department website at <https://dsps.wi.gov>. The board may also consider materials or items filed after the transmission of this notice. Times listed for the commencement of disciplinary hearings may be changed by the examiner for the convenience of the parties. Requests for interpreters for the hard of hearing, or other accommodations, are considered upon request by contacting the Affirmative Action Officer, or reach the Meeting Staff by calling 608-267-7213.

**HYBRID (IN-PERSON/VIRTUAL)  
WISCONSIN ADVISORY COUNCIL ON  
BUILDING SUSTAINABILITY  
MEETING MINUTES  
JULY 14, 2023**

**PRESENT:** Benjamin Austin, Megan Dyer (*via Zoom*), Scott Hackel, Monika Hermann (*via Zoom*), Missy Nergard, Victor Nino Torres, Timothy O'Brien (*via Zoom*), Francisco Sayu, Keith Swartz, Christina Louise Weber

**EXCUSED:** Alan Eber

**STAFF:** Brad Wojciechowski, Executive Director; Joseph Ricker, Legal Counsel; Dialah Azam, Bureau Assistant; and other DSPS Staff

**CALL TO ORDER**

Missy Nergard, Chairperson, called the meeting to order at 9:04 a.m. A quorum of ten (10) members was confirmed.

**ADOPTION OF AGENDA**

**Amendments to the Agenda**

- **REMOVE** Agenda item E. Reconsideration of Referral Criteria Work Group Meeting Frequency

**MOTION:** Benjamin Austin moved, seconded by Francisco Sayu, to adopt the Agenda as amended. Motion carried unanimously.

**APPROVAL OF MINUTES OF JANUARY 27, 2023**

**MOTION:** Christina Louise Weber moved, seconded by Keith Swartz, to adopt the Minutes of January 27, 2023 as published. Motion carried unanimously.

**SECRETARY DAN HERETH APPEARANCE**

**MOTION:** Scott Hackel moved, seconded by Victor Nino Torres, to acknowledge and thank Secretary Dan Hereth for his appearance to the Council. Motion carried unanimously.

**BUILDING A STRONGER WISCONSIN, WISCONSIN OFFICE OF THE  
COMMISSIONER OF INSURANCE**

**Presentation by Sarah Smith, Director of Public Affairs**

**MOTION:** Victor Nino Torres moved, seconded by Scott Hackel, to acknowledge and thank Sarah Smith, Director of Public Affairs for their appearance and presentation to the Council. Motion carried unanimously.

**HOW DO WE PAY FOR BETTER BUILDINGS? BALANCING ENERGY EFFICIENCY  
AND AFFORDABILITY**

**MOTION:** Benjamin Austin moved, seconded by Christina Louise Weber, to delegate Francisco Sayu and Scott Hackel to work with DSPS staff to discuss establishing working groups within the Wisconsin Advisory Council on Building Sustainability. Motion carried unanimously.

**ADJOURNMENT**


**MOTION:** Scott Hackel moved, seconded by Keith Swartz, to adjourn the meeting. Motion carried unanimously.

The meeting adjourned at 11:01 a.m.

DRAFT

**State of Wisconsin  
Department of Safety & Professional Services**

**AGENDA REQUEST FORM**

<b>1) Name and title of person submitting the request:</b> Brad Wojciechowski, on behalf of Ben Rabe NBI		<b>2) Date when request submitted:</b> 10/18/2023 Items will be considered late if submitted after 12:00 p.m. on the deadline date which is 8 business days before the meeting	
<b>3) Name of Board, Committee, Council, Sections:</b> Choose an item.      Wisconsin Advisory Council on Building Sustainability			
<b>4) Meeting Date:</b> 10/27/2023	<b>5) Attachments:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>6) How should the item be titled on the agenda page?</b> <b>Public Agenda Request: Presentation, Ben Rabe – New Buildings Institute</b> 1) Regional Implications for Sustainable Buildings	
<b>7) Place Item in:</b> <input checked="" type="checkbox"/> Open Session <input type="checkbox"/> Closed Session	<b>8) Is an appearance before the Board being scheduled?</b> <i>(If yes, please complete <a href="#">Appearance Request</a> for Non-DSPS Staff)</i> <input checked="" type="checkbox"/> Yes <Appearance Name(s)> <input type="checkbox"/> No	<b>9) Name of Case Advisor(s), if applicable:</b> <Click Here to Add Case Advisor Name or N/A>	
<b>10) Describe the issue and action that should be addressed:</b> Ben Rabe will send presentation to distribute to council members.			
<b>11) Authorization</b> <div style="display: flex; justify-content: space-between; align-items: flex-end; margin-top: 20px;"> <div style="width: 60%;">  </div> <div style="width: 35%; text-align: right;">                 10/18/2023             </div> </div> <hr/> <div style="display: flex; justify-content: space-between; align-items: flex-end;"> <div style="width: 60%;">Signature of person making this request</div> <div style="width: 35%; text-align: right;">Date</div> </div> <hr/> <div style="display: flex; justify-content: space-between; align-items: flex-end;"> <div style="width: 60%;">Supervisor (Only required for post agenda deadline items)</div> <div style="width: 35%; text-align: right;">Date</div> </div> <hr/> <div style="display: flex; justify-content: space-between; align-items: flex-end;"> <div style="width: 60%;">Executive Director signature (Indicates approval for post agenda deadline items)</div> <div style="width: 35%; text-align: right;">Date</div> </div>			
<b>Directions for including supporting documents:</b> 1. This form should be saved with any other documents submitted to the <a href="#">Agenda Items</a> folders. 2. Post Agenda Deadline items must be authorized by a Supervisor and the Policy Development Executive Director. 3. If necessary, provide original documents needing Board Chairperson signature to the Bureau Assistant prior to the start of a meeting.			



Lovejoy Office Building | Portland, OR *Credit: Opsis Architecture*

**nbi** new buildings  
institute

# WI Council on Building Sustainability

Ben Rabe, New Buildings Institute

WI Council on Building Sustainability: October 27, 2023

# Outline

- Introduction
- Building Performance Standards (BPS)
  - Overview
  - Example Cities
- Commercial Property Assessed Clean Energy (CPACE)
  - Overview
  - Building Specification Development
  - Emerging Trends



Lovejoy Office Building | Portland, OR  
Credit: Opsis Architecture

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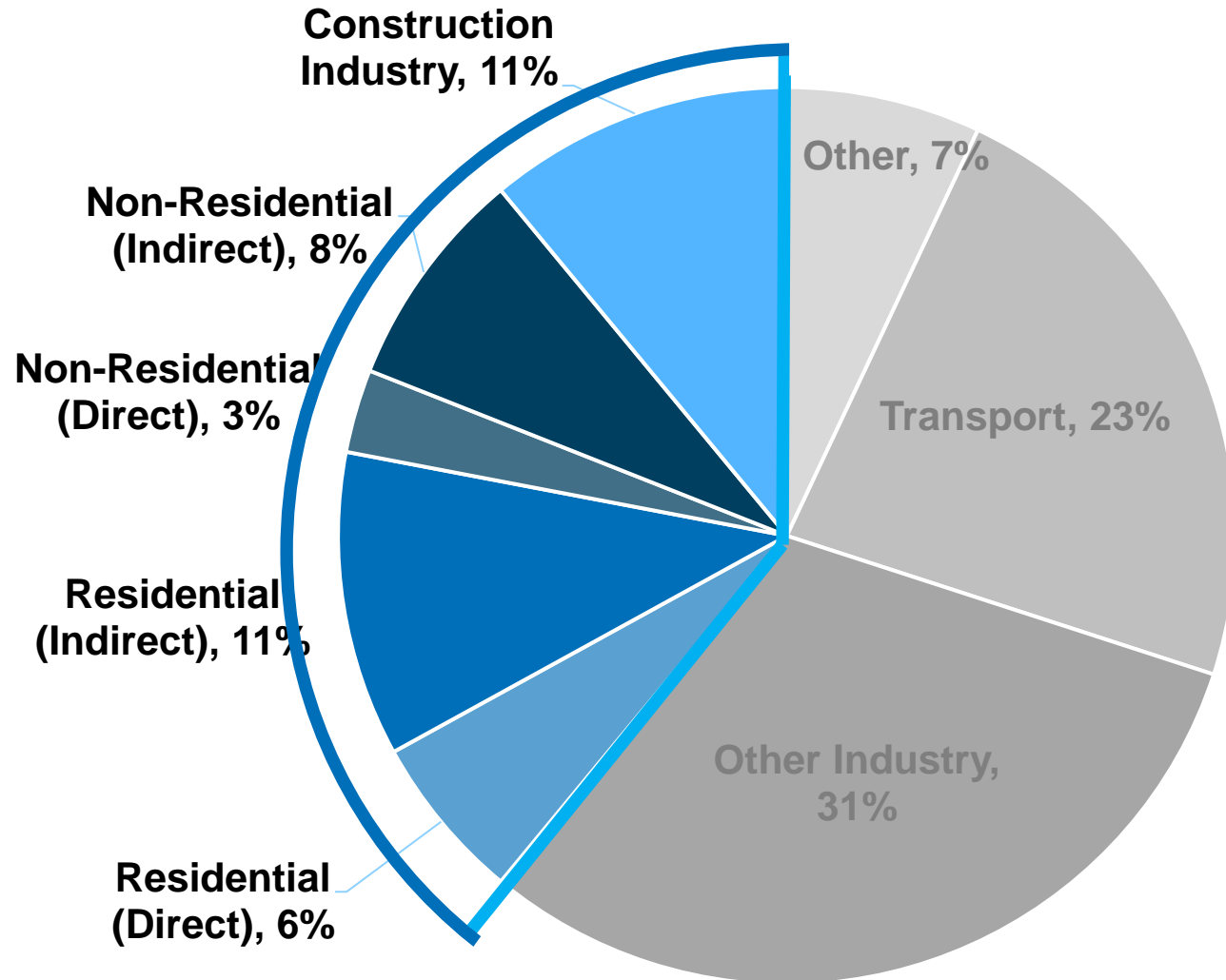
# More about me

- Advance residential codes nationally: 2024 IECC
- Support to cities and states to improve their building stock through advanced energy codes and policies





# Sources of Global Greenhouse Gas Emissions

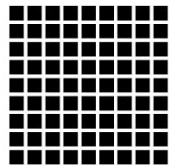


39% of global GHG emissions come from buildings

# The Five Foundations of Zero Carbon Building Policies



Energy Efficiency



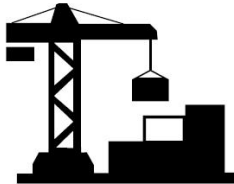
Renewable Energy



Grid Integration + Storage + EV



Building Electrification



Life-Cycle Impacts



© New Buildings Institute, 2021

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# Building Performance Standards (BPS)

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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

# Building Performance Standards Can Address Multiple Goals



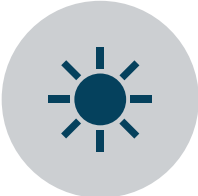
Energy Efficiency



Greenhouse Gas Emissions Reductions



Electrification



Renewable Energy



Water Efficiency

# Metrics Summary



## Common Metrics

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

## Potential Metrics

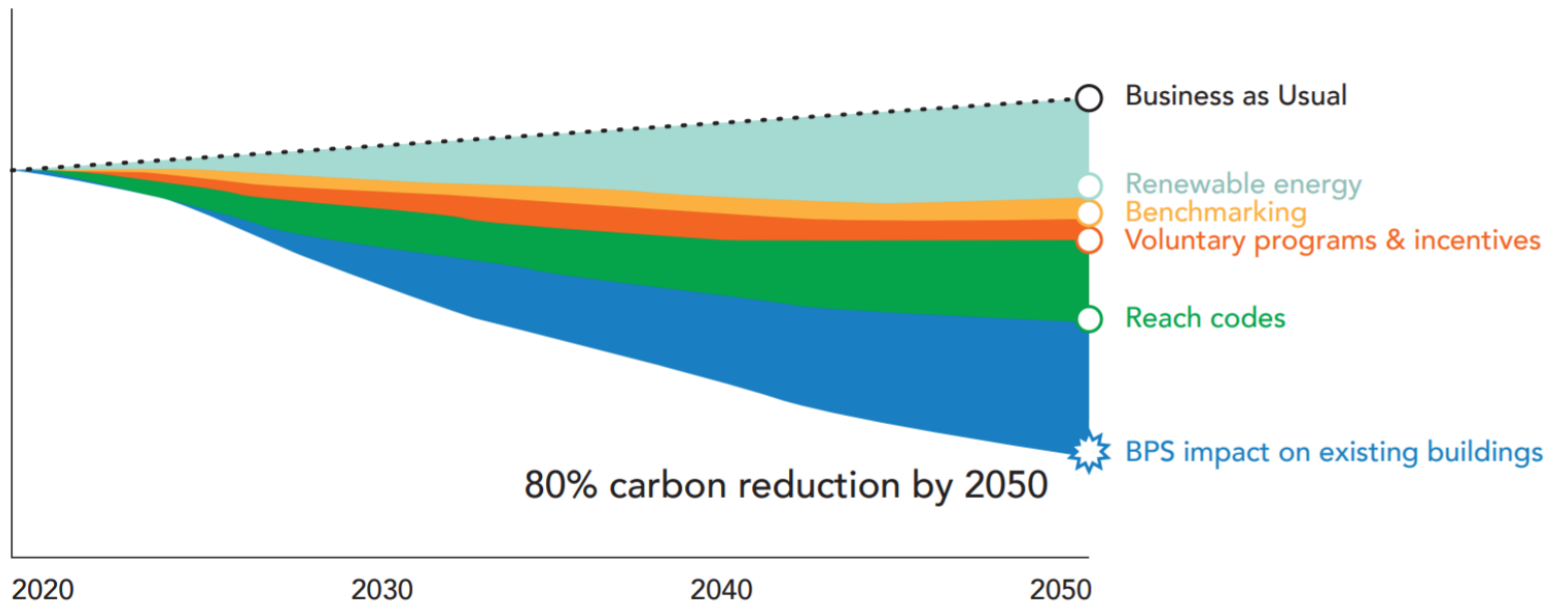
- Peak Electric Demand
- Time Dependent Energy
- On-site Combustion Limits
- Thermal Energy Demand Intensity (TEDI)
- Total Systems Performance Ratio (TSPR)

# 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>



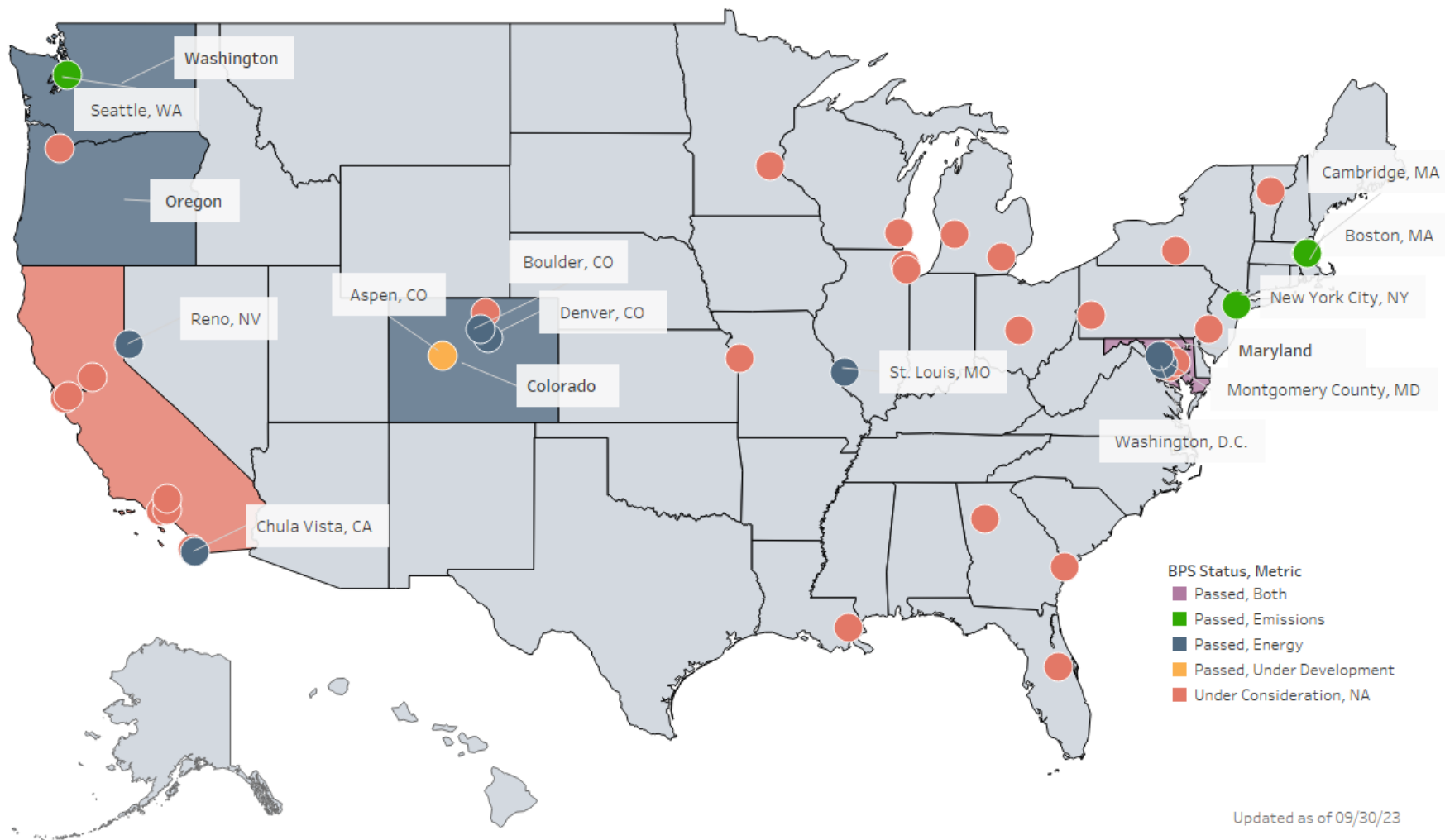
# Scale of Impact on Existing Buildings



- 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.

# BEPS around the US

## State and Local Building Performance Standards



# 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



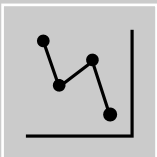
# The Future of Building Performance Standards and Utilities



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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# C-PACE Overview

# C-PACE Overview

- C-PACE = Commercial Property Assessed Clean Energy
- Source of capital for construction project
- Capital for qualifying projects is repaid overtime via a tax assessment



Funding Available

Funding Likely Available in 2022-2023

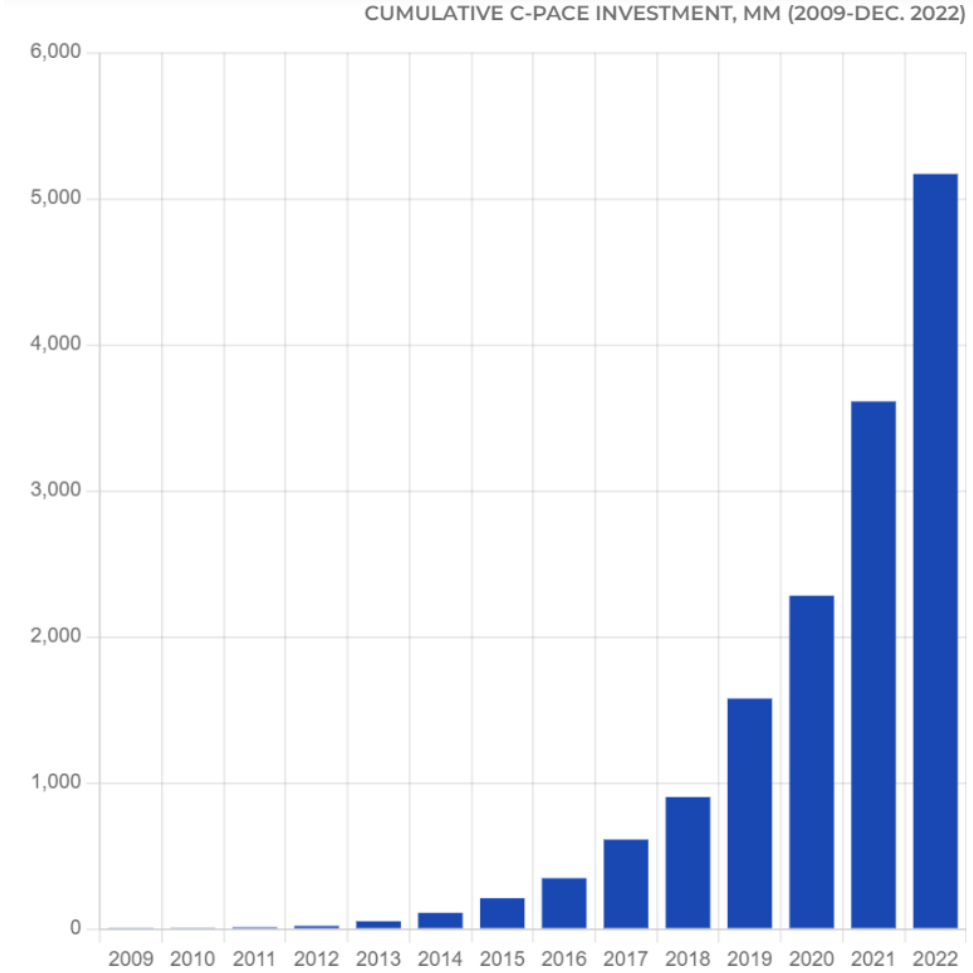
No Funding Available

source: PACE Equity



# C-PACE Reported Stats

- The US construction market was valued at \$1.9 trillion in 2021
  - The market is expected to grow at an average of more than 3% during 2023-2026.
- C-PACE
  - 39 states and the District of Columbia, passed enabling legislation
    - Represents 80% of the U.S. Population
    - 28 states have active C-PACE programs.
    - C-pace dollar usage has more than doubled since 2016
- By 2050, commercial building floor space is expected to reach 124.3 billion square feet
  - a 33% increase from 2020.
- Seeing an increase in Jobs in states that have adopted PACE



source: PACE Nation

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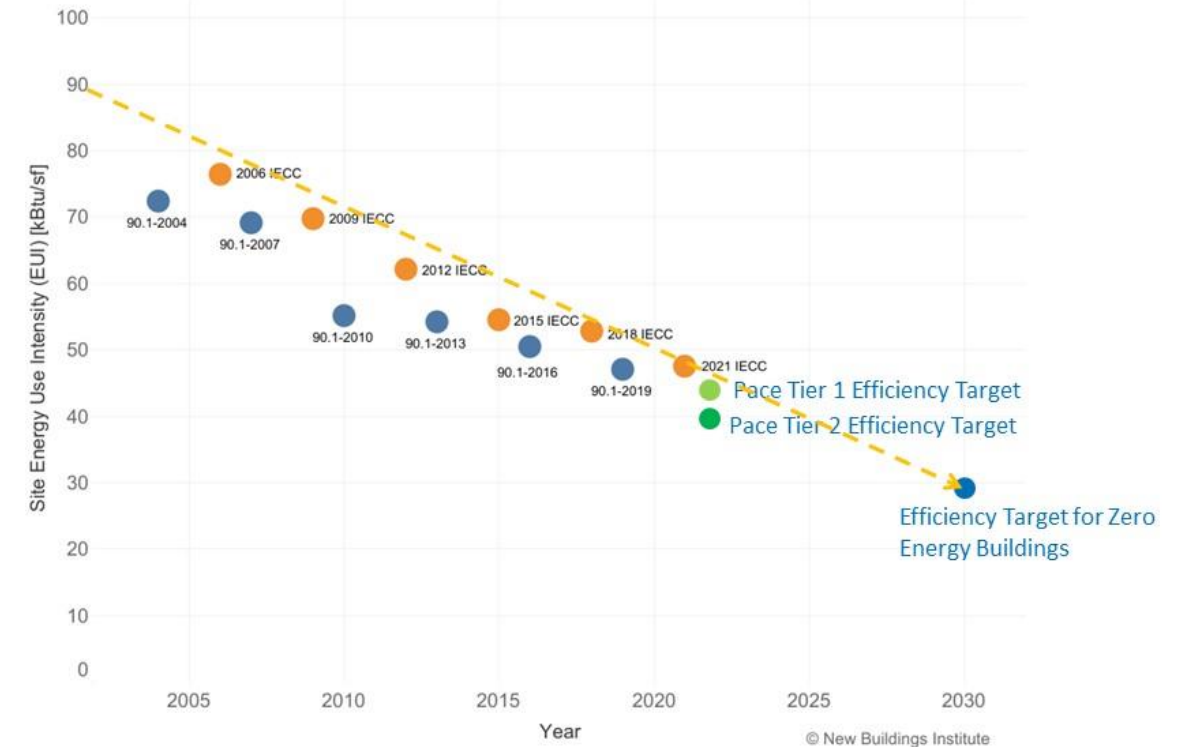
# Building Specification Development

# Guiding Principles for Specification

1. Maximize energy efficiency through mandatory requirements
2. Provide an efficiency-based pathway to higher tiers of performance
3. Include options for utilizing renewable energy sources

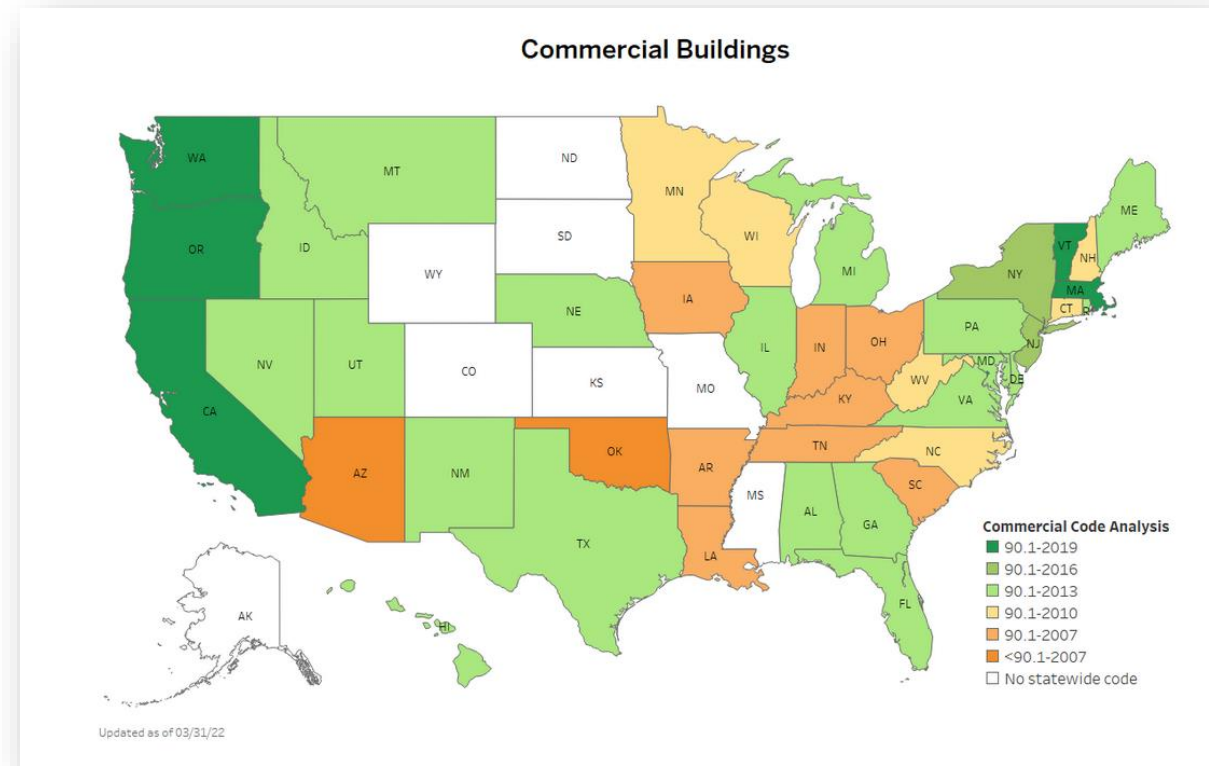
## Codes on the Path to Zero

Modeled Energy Code Performance



# Key Variables

- Different code baselines means different starting points
- Different building types means different opportunities to improve performance
- Keep simple/prescriptive approach by referencing a common starting point (backstop)



source: US DOE

# Prescriptive Path

<b>MANDATORY MEASURES:</b> Required for all projects	<b>ADDITIONAL EFFICIENCY OPTIONS</b> Tier 1: Select any two from 2.1 and 2.2 Tier 2: Select 3 – one of which must be an envelope option (2.1)
1.1 Mandatory Minimum: 90.1-2016 backstop	<b>2.1 High Performance Envelope Options</b>
1.2 Building Envelope Improvement	2.1.1 High Performance Envelope 2.1.2 High Performance Fenestration 2.1.3 Reduced Window-to-Wall Ratio (expect conditioned warehouses which must use high speed doors) 2.1.4 Reduced Thermal Bridging 2.1.5 Air Barrier Continuity
1.3 HVAC Improvement	
1.4 Efficient Water Heating Equipment and Plumbing Fixtures	
1.5 Efficient Interior Lighting and Controls	
1.6 Efficient Exterior Lighting and Controls	
1.7 Efficient Appliances	<b>2.2 All Other Additional Options</b>
1.8 Solar Readiness	2.2.1 High Performance HVAC 2.2.2 High Performance Hot Water Heating 2.2.3 Enhanced Interior Lighting Controls 2.2.4 Advanced Metering and Energy Monitoring 2.2.5 Electric Vehicle Charging Infrastructure 2.2.6 Low Embodied Carbon Concrete

# Building Types

- Requirements vary slightly by 3 groupings that represent the primary C-PACE market:
  - Office/Retail
  - Hotel/multifamily/senior housing
  - Conditioned warehouses/distribution centers



source: PACE Equity

# Mandatory Requirements

Better Building Envelope	Summary
<b>1.1 Mandatory Minimum: 90.1-2016 backstop</b>	All portions of the building meet 90.1-2016 or local code if its more stringent than 90.1-2016
<b>1.2 Building Envelope Improvement</b> 1.2.1: Improved assemblies 1.2.2: Improved fenestration	Two UA values using 30% WWR as a threshold with set roof U-factors Windows based on 20% Stretch Code and exceed 90.1-2022 in call cases
Exception to 1.2.1 (proposed)	Warehouses and conditioned storage facilities with WWR shall exceed 90.1-2016 by three percent

# Mandatory Requirements

Better HVAC Systems	Summary
<p><b>1.3 HVAC Improvement</b></p> <ul style="list-style-type: none"> <li>1.3.1 HVAC Equipment improvement</li> <li>1.3.2 Fan power limits</li> </ul>	<p>Heating and cooling equipment shall exceed 90.1-2019 by 5% and residential equipment shall comply with CEE's advanced tier requirements</p> <p>Reduced fan power limits for variable volume and constant volume systems</p>
<p>Exception to 1.3.1 (proposed)</p>	<p>Projects with gas packaged RTU's in warmer climates (0-3) cooling equipment shall exceed 90.1-2019 by 10% and colder climates (4-8) shall utilize a DOAS per Section 2.2.1</p>
<p><b>Additional requirements for hotel, multifamily and senior housing projects</b></p>	
<ul style="list-style-type: none"> <li>1. Thermostats</li> <li>2. Better fans</li> <li>3. Better ventilation</li> </ul>	<p>Remotely accessible via wireless interface and include seven-day schedule functionality</p>
	<p>Cfm/w requirements for hood fans and bathroom and utility fans. Fans &lt;1 hp shall have an FEI not less than 1.</p>
	<p>Meet the requirements of ASHRAE 62.2 and include an H/ERV or provide balanced ventilation (supply airflow rate is within 15% of exhaust airflow rate). No pressurized corridors</p>



# Mandatory Requirements

Better Hot Water heating, lighting and controls	Summary
<p><b>1.4 Efficient Water Heating Equipment and Plumbing Fixtures</b></p> <ul style="list-style-type: none"> <li>1.4.1 Efficient water heating equipment</li> <li>1.4.2 Efficient plumbing fixtures</li> <li>1.4.3 Heated pool insulation</li> </ul>	<p>Weighted average rating of all fossil fuel water-heating equipment shall be 95% Et, OR all water heating requirements shall be met with HPWHs</p> <p>All installed plumbing fixtures shall be WaterSense labeled</p> <p>Heated pools to be insulated to R-12 with cover</p>
<p>Exception to 1.4.1 (proposed)</p>	<p>“low boy” electric water heaters with a UEF of 0.92 located within a conditioned space</p>
<p><b>1.5 Efficient Interior Lighting and Controls</b></p> <p><b>1.5.1 Efficient interior lighting</b></p>	<p>Reduced LPDs for common areas, offices and warehouses</p> <p>Line-voltage track lighting shall include an integral current limiter</p>
<p><b>Additional requirements for hotel, multifamily and senior housing projects</b></p>	
<ul style="list-style-type: none"> <li>1. High efficacy lamps and luminaires</li> <li>2. Occupancy controls for common areas</li> <li>3. Vacancy controls for common areas larger than 50 sf</li> </ul>	<p>LEDs for all permanently installed fixtures in dwelling units and guest rooms</p> <p>Occupancy controls for common areas capable of reducing lighting power within 20 minutes of non-occupancy</p> <p>Vacancy controls in all common areas larger than 50 sf</p>

# Mandatory Requirements

<b>Efficient Exterior Lighting and Controls and Energy Star Rated Appliances and Equipment</b>	<b>Summary</b>
<b>1.6 Efficient Exterior Lighting and Controls</b>	LED through total luminaire efficacy requirements
<b>1.7 Energy Star Rated Appliances and Equipment</b>	Energy Star required for all applicable electronics, office equipment, commercial food service equipment, heating and cooling equipment, lighting, water heating equipment, residential dishwashers and residential clothes washers

# Additional Options

2.1 High Performance Envelope Options	Summary
<b>2.1.1 High Performance Envelope</b>	Two UA values using 30% WWR as a threshold with set roof U-factors based on NBI's Multifamily Guide
<b>2.1.2 High Performance Fenestration</b>	Windows based on NBI's Multifamily Guide
<b>2.1.3 Reduced Window-to-Wall Ratio (expect conditioned warehouses which must use high speed doors)</b>	Low window-to-wall ratio design (20%) or high-speed doors for warehouses. Update (proposed): If design WWR exceeds 20% project must select high performance fenestration (2.1.2)
<b>2.1.4 Reduced Thermal Bridging</b>	Minimum R-3 thermal break at critical locations (balconies, parapets and window-wall connections)
<b>2.1.5 Air Barrier Continuity</b>	Work with a 3rd party commissioning entity to ensure continuity of air barrier in design and construction

# Additional Options

2.2 All Other Additional Options	Summary
<b>2.2.1 High Performance HVAC (pick one):</b> <ol style="list-style-type: none"><li>1. Efficient HVAC Equipment</li><li>2. Primary heating and cooling loads met with heat pump equipment</li><li>3. Energy recovery and DOAS</li></ol>	Heating and cooling equipment shall exceed 90.1-2019 by 10% Electric heat pump only – no fossil fuel combustion heating DOAS unit that delivers 100% outdoor air to each occupied space and include energy recovery
<b>2.2.2 High Performance Hot Water Heating (pick one):</b> <ol style="list-style-type: none"><li>1. Waste heat recovery or solar thermal</li><li>2. Heat pump water heater</li></ol>	Provide not less 30% of the buildings annual hot water requirements Input-capacity weighted average of 3.0
<b>2.2.3 Enhanced Interior Lighting Controls</b>	Networked lighting control system from DLC QLP or LLLC
<b>2.2.4 Advanced Metering and Energy Monitoring</b>	Subsystem metering and reporting requirement
<b>2.2.5 Electric Vehicle Charging Infrastructure (proposed)</b>	20% EVSE and 30% EV ready parking spaces
<b>2.2.6 Low Embodied Carbon Concrete (proposed)</b>	GWP limits and EPD reporting requirements

# Major Renovations

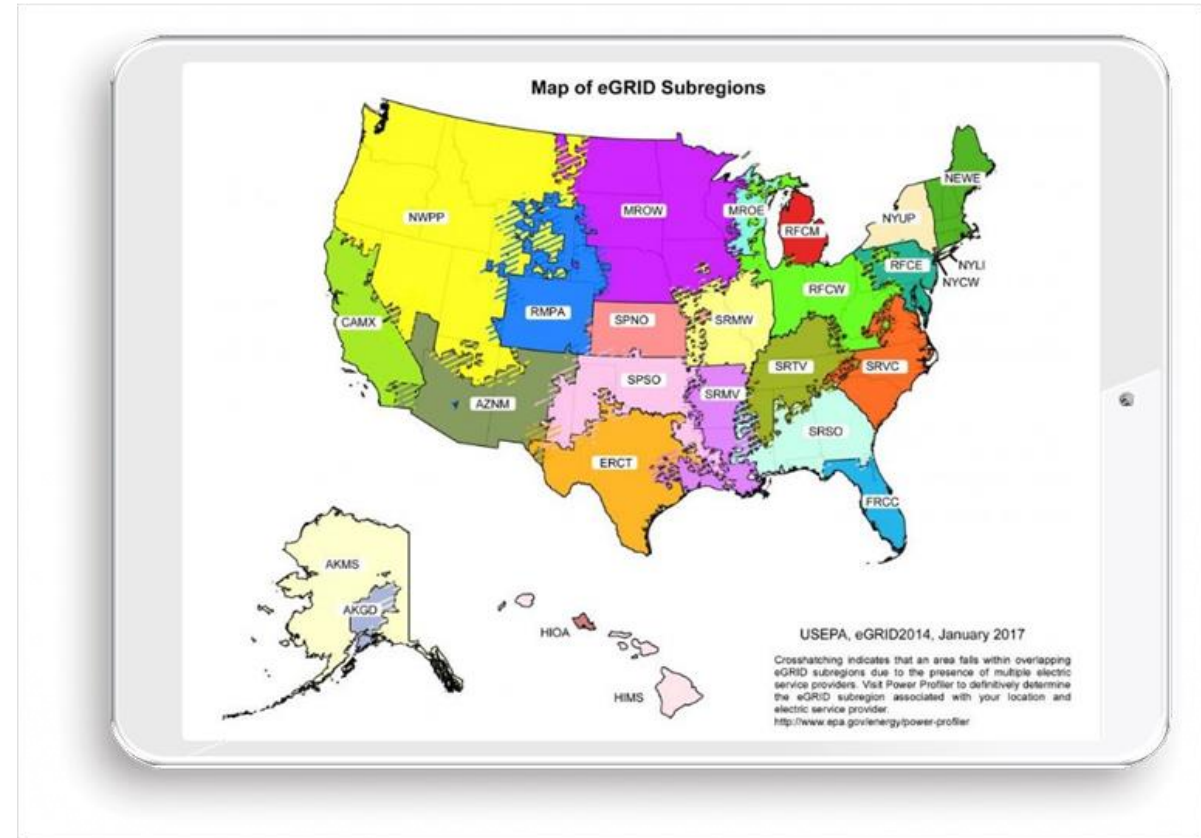
- All individual measures that are updated must meet mandatory requirements
- A minimum of two mandatory measures must be met and one additional measure



source: PACE Equity

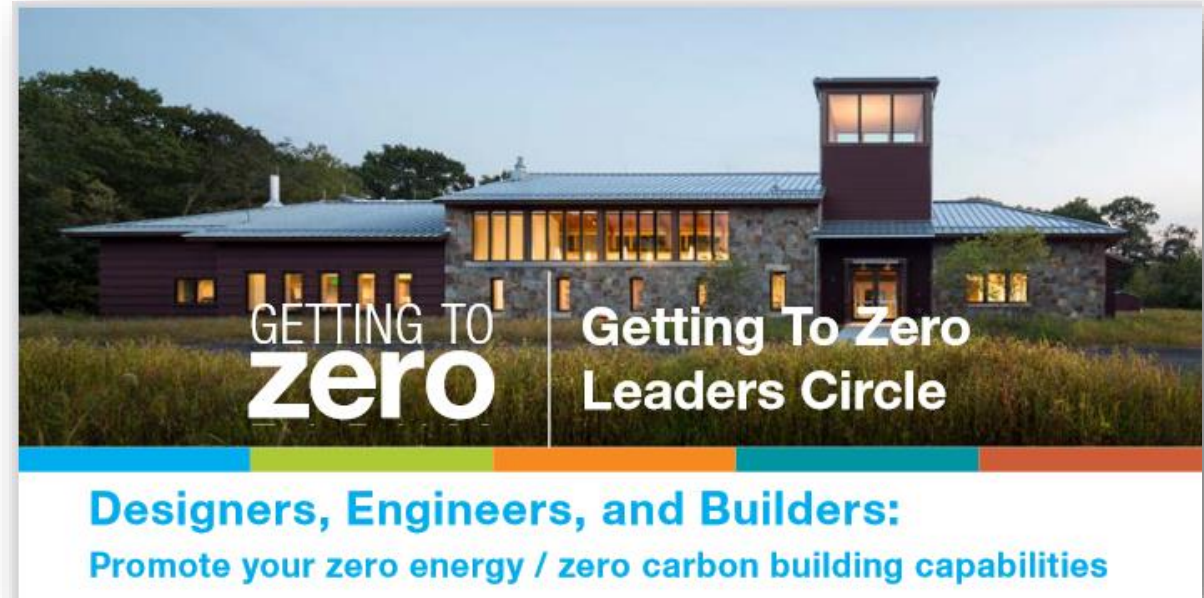
# Performance Path

- Aligned with ASHRAE Appendix G
- Projects demonstrate compliance by calculating a performance target
- Uses carbon emissions as the basis of performance
- Tier 1 projects meet an 8% reduction and Tier 2 projects meet a 10% reduction






# Project Verification and Recognition

- Verification process includes:
  - Preliminary review and “as-designed” verification if measures are met
  - Upon project completion, NBI conduct final review and provides final verification if measures are met
- Verified projects will be recognized through NBI’s leaders cohort



# Cross Walk – Comparison to Above Code Programs

Renewables				PV Ready
WaterSense	WaterSense		WaterSense	WaterSense
Lighting & Controls		MF 0.60 (90.1-2010)	Off 0.79, MF 0.68 (90.1-2016)	Off 0.60, MF 0.43
Service Hot Water	ES Certified	ES Certified & Electric Ready	Federal Minimum	More efficient equipment
HVAC				10% better than code, DOAS
Window U-Factors	1.2-0.30 (CZ)	1.2-0.30 (CZ)	1.1-0.25	0.59-0.25 (CZ)
Whole building Metering		Monitoring for some Building Types	Whole Building	90.1-2016
Appliances	ES Appliances	ES Appliances		ES Appliances
Mandatory Minimum	ASHRAE 90.1 - 2007 or state minimum	ES MFHR/ASHRAE 2207 or state minimum	ASHRAE 90.1-2016	ASHRAE 90.1-2016
			<b>LEED 4.1 BD&amp;C</b>	



# Beta testing

## CIRRUS Low Carbon Analysis

### Data Set

Projects analyzed: 7

Projects pass with original design: 0

New construction - 60%

Existing building - 40%

70% were Multifamily projects; most significant challenge related to getting outside air for each dwelling unit

Total mandatory requirements: 11

Total mandatory requirements for residential: 13

Avg number of requirements met with original design: 50%

Average number of mandatory measures passed: 2.5

Average number of mandatory measures passed or need additional data for confirmation: 4



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# Emerging Trends/Targeting Zero

# Help Lagging States

- Work with jurisdictions to get C-PACE approved
- Use C-PACE as an incentive to build to latest model codes and better
- Advance building decarbonization efforts by requiring all-electric designs
- Include a wider range of measures and resilient building features that have been historically difficult to advance through energy codes



## North Carolina kills effort to make its building code energy-efficient

State Republicans have banned residential building-code updates until 2031, a move that will increase energy costs and make it harder to decarbonize buildings.

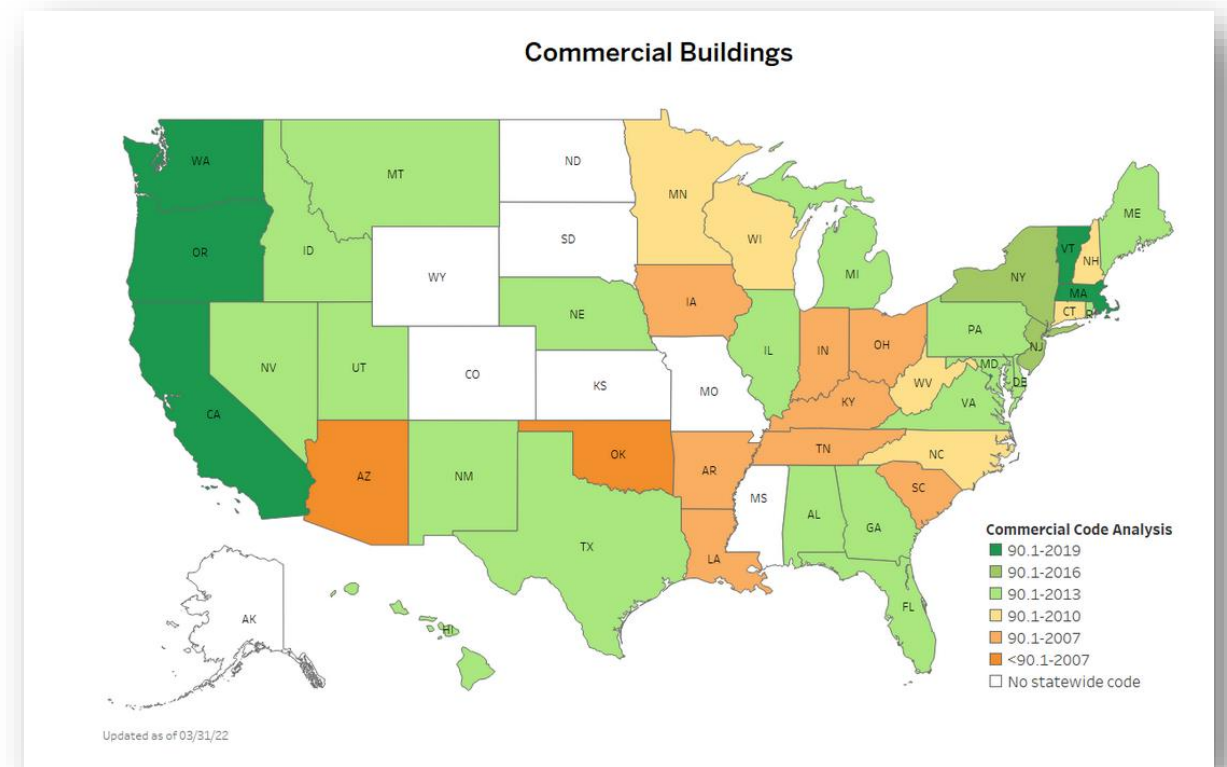
18 August 2023



Workers build a home in Wilmington, North Carolina. (John Greim/Loop Images/Universal Images Group/Getty Images)

# States with more recently adopted codes

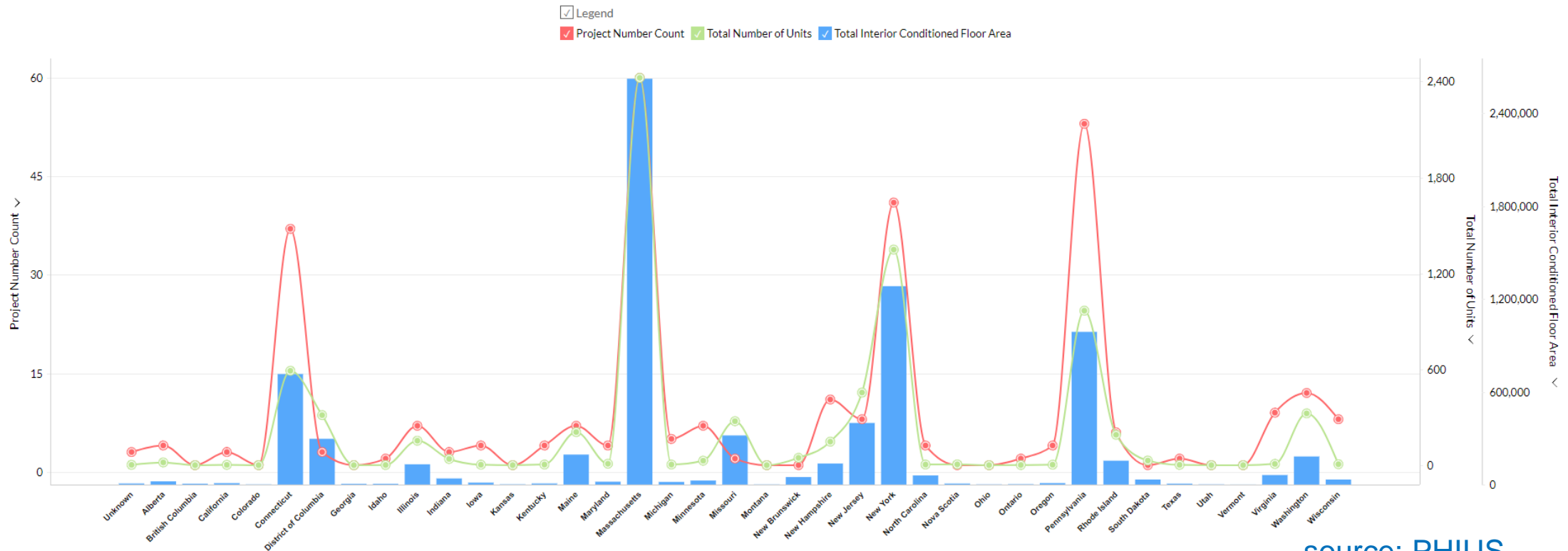
- Sunset previous version in 2024 and update to align with more recent model codes
- IECC 2021/90.1-2019 as backstop with mandatory requirement to get to IECC 2024/90.1-2022 levels of performance
- Expand mandatory requirements to include all-electric requirements and embodied carbon measures
- Provide additional options to include measures targeting improved IAQ, resiliency and grid connectivity



# Moving Forward

- Create aspirational tier of performance with Passive House certification
- Align with more advanced codes and policies
- Tap into community passionate about building performance

Design Certified by State



source: PHIUS




IDEAS Z2 Design Facility, San Jose (Credit: David Wakely)

# Questions?

Ben Rabe, Project Manager, [ben@newbuildings.org](mailto:ben@newbuildings.org)

**State of Wisconsin  
Department of Safety & Professional Services**

**AGENDA REQUEST FORM**

<b>1) Name and title of person submitting the request:</b> Brad Wojciechowski		<b>2) Date when request submitted:</b> 10/18/2023 Items will be considered late if submitted after 12:00 p.m. on the deadline date which is 8 business days before the meeting	
<b>3) Name of Board, Committee, Council, Sections:</b> Choose an item.      Wisconsin Advisory Council on Building Sustainability			
<b>4) Meeting Date:</b> 10/27/2023	<b>5) Attachments:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>6) How should the item be titled on the agenda page?</b> Presentation: Tim O'Brien, Spec Building Desing to Reflect Energy Costs and Savings – Discussion and Consideration	
<b>7) Place Item in:</b> <input checked="" type="checkbox"/> Open Session <input type="checkbox"/> Closed Session	<b>8) Is an appearance before the Board being scheduled?</b> <i>(If yes, please complete <a href="#">Appearance Request</a> for Non-DSPS Staff)</i>  <input type="checkbox"/> Yes <Appearance Name(s)> <input type="checkbox"/> No	<b>9) Name of Case Advisor(s), if applicable:</b> <Click Here to Add Case Advisor Name or N/A>	
<b>10) Describe the issue and action that should be addressed:</b> <Click Here to Add Description>			
<b>11) Authorization</b>			
		<b>10/18/2023</b>	
Signature of person making this request		Date	
Supervisor (Only required for post agenda deadline items)		Date	
Executive Director signature (Indicates approval for post agenda deadline items)		Date	
<b>Directions for including supporting documents:</b> <ol style="list-style-type: none"> <li>1. This form should be saved with any other documents submitted to the <a href="#">Agenda Items</a> folders.</li> <li>2. Post Agenda Deadline items must be authorized by a Supervisor and the Policy Development Executive Director.</li> <li>3. If necessary, provide original documents needing Board Chairperson signature to the Bureau Assistant prior to the start of a meeting.</li> </ol>			