

Zero Net Carbon Building Zoning

A Better City - Stakeholder Meeting: Review of Comments & Responses

AGENDA

- Welcome & Introductions - Yve Torrie (3 minutes)
- ZNC Update - John Dalzell, BPDA (20 minutes)
 - Zoning & Policy Framework
 - Summary of Comments
 - Additional ABC Comments
 - Timeline & Process Next Steps
- Discussion - Yve Torrie (35 minutes)
- Wrap up and Next Steps - Yve Torrie

ZNC Zoning & Policy Framework

Hierarchy

- Zoning - high level standards that set fixed requirements. Requires BPDA Board, Zoning Commission approvals and signed by Mayor.
- Regulations - specific and detailed standards that are formally adopted but evolutionary in nature. Requires BPDA Board approval.
- Procedures - very specific and detailed standards that support but do not change Zoning and Regulations. Requires BPDA Director and leadership approval.

All involve stakeholder, public and community engagement.

ZNC Zoning & Policy Framework

Zoning - Article 37

- Increases minimum level to LEED Gold.
- Lowers the compliance threshold to 20k Sq. Ft.
- Can sets adoption schedule(s) if phasing is included.
- Establish an Advisory Committee(s)
- Updates to Interagency Green Building Committee
- Removes “Boston Credits” (TOD, Historic Preservation, etc.)

ZNC Zoning & Policy Framework

Zoning - ZNC

- Establishes a Zero Net Carbon requirement for new construction projects from zoning adoption date.
- “Net” includes annual building emissions less on-site renewable energy generation and renewable energy procurement.
- Compliance is reported annually via BERDO. In short, ZNC buildings meet the 2050 standard on day one of occupancy.
- Prioritizes Low Carbon Building performance including creation of Building Carbon Emission Targets (e.g. CEIs and Percentiles)
- Prioritizes On-site Renewable Energy including standards, exceptions and procedures.

ZNC Zoning & Policy Framework

Regulations

- Specifics and updates Building Performance Targets including Carbon Emission Intensity (CEIs) and Percentile Reduction.
- Defines and refines specific and detailed standards including building use typologies.
- Establishes integrated review procedures (e.g. Article 80, Article 25, etc.)

ZNC Zoning & Policy Framework

Procedures

- Defines and refines very specific and detailed standards including submission, review, and reporting.
 - Performance modeling
 - Checklists
 - LEED Credits
 - Establishes supporting standards

ZNC Buildings

Landmark Center

Modeled performance:

630,000 sf

- EUI = 101 kBtu/sf/yr
- CEI = 7.0 kg CO₂e/sf/yr
- Solar PV 45 kWh
- 100% Renewable Energy Procure

CO₂e Emissions (tons/yr)

Building	3,868.
On-site RE	156. (less)
RE Procure	3,712. (less)
<hr/> Zero Net	<hr/> 0.



Net Zero Office / Life Science Building

Hybrid Electric Design

- 93% Reduction in Fossil Fuels
- 53% Energy Savings

LEED Gold / 60 Points

ZNC Buildings

BU Center for Computing & Data Sciences

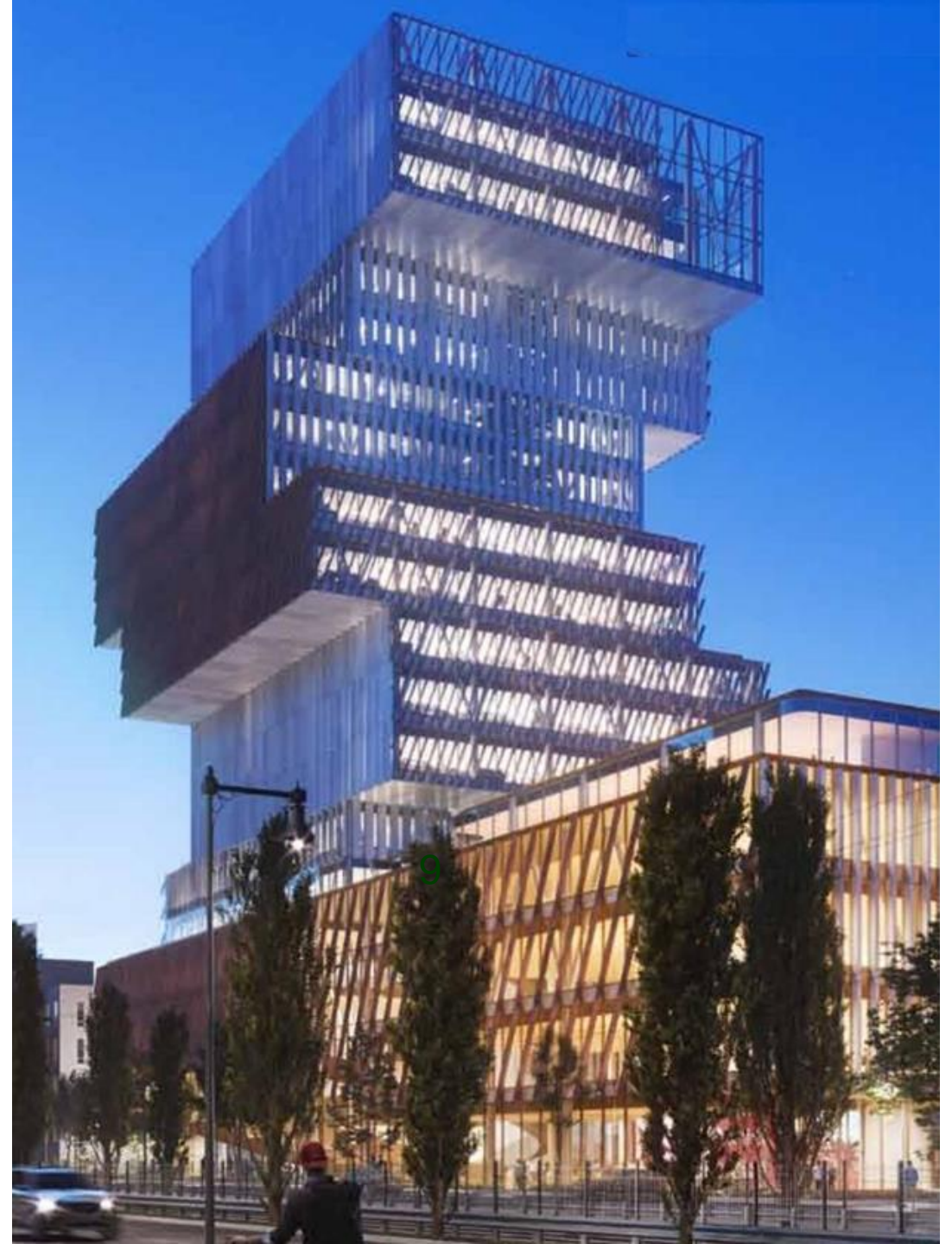
Modeled performance:

316,000 sf

- EUI = 39 kBtu/sf/yr
- CEI = 2.9 kg CO₂e/sf/yr
- Solar PV 964 kWh (campus)
- 100% Renewable Energy Purchase

CO₂e Emissions (tons/yr)

Building	1,090.
On-site RE	278. (less)
RE Procure	812. (less)
<hr/>	
Zero Net	0.



ZNC Buildings (ready - Low Carbon & Installed PV)

Bunker Hill Housing Building F

Modeled performance:

271,844 sf

- EUI 19.1 kBtu/sf/yr
- CEI 1.48 kg CO₂e/sf/yr
- Solar PV 81.9 kW

CO₂e Emissions (tons/yr)

Building	445.
On-site RE	36. (less)
RE Procure	409. (less)
<hr/> Zero Net	<hr/> 0.



DRAFT TAG Report - Comment Summary

Zoning Policy & Regulations

Low Carbon Buildings

On-Site Renewable Energy

Renewable Energy Procurement

Embodied Carbon

5 organization letters, 24 individual comments, plus ongoing stakeholder engagement meetings and discussions.

Comment Summary

- Most are very supportive of ZNC policy and action.
- Most support LEED Gold and some support LEED Platinum.
- Several have specifics that are concerning or very concerning.
- Improve alignment of ZNC and BERDO building typologies include expanding & refining uses.
- Clarify performance standards including Zero Net, Building CEIs, and BERDO Emission Standards
- Explain compliance from planning to post occupancy and BERDO reporting,
- Explain how differences between modeled performance and actual performance will be resolved.
- Clarify how performance standards are calculated, including reference standards.
- Clarify how ZNC Zoning will fit with other state policy including (DOER opt in stretch, Clean Heat Commission CAPS, current stretch energy code).
- Define methodology for calculating emission factors and review local distributed generation.
- Exempt emergency backup generation.
- Expand Embodied Carbon strategies.
- Establish the ZNC Advisory Group to refine standards and guide steps ahead.

ABC Comments

Summary Statements

- I think there should be clarity provided about how this fits in with other state policy currently underway: opt in stretch energy code for municipalities that DOER said should be released within 2 weeks; The Clean Heat Commission setting CAPS (work to be completed by November 2022); Update to the current stretch energy code.
- Ensuring data reporting requirements include a defined methodology for calculating emissions that allow for the most up-to-date and accurate emissions factors customized to generation sources serving the local grid in Boston.
- Allowing an exemption from emissions requirements for emergency backup generation/backup power to at least 2030.
- Professionals employed by building owners are considered as data verifiers with appropriate precautions.

ABC Comments

General Comments

A. Proof of Concept in Large Buildings - Our members have serious concerns about the feasibility of the Carbon Emissions Intensity targets and the requirement of forty percent emissions reductions compared to ASHRAE 90.1-2013. Risk of compromising other industry best practices. Consider other approaches such as electrification. City should share building-specific case studies and associated costs that demonstrate proof of concept in buildings of these types before drafting standards.

B. Consistency With Other De-carbonization Efforts - municipal opt-in stretch energy code, updates to the current stretch and base building codes, the Clean Heat Commission.

ABC Comments

General Comments - continued

C. Integration into Article 80 Process - the BPDA should clearly outline the thresholds for the ZNC standard and how any final recommendations will come together into a process that developers will be expected to follow, and what support the BPDA will offer them.

D. Workforce Development - the City should prioritize workforce development and training opportunities, paying particular attention to providing access to career ladders in underrepresented communities.

ABC Comments

TAG Specific Comments

Low Carbon Building TAG

- convening a facilitated working session where information can be exchanged between members and BPDA, specific to the feasibility of the recommended targets.
- recommend LEED Gold as more appropriate.
- Use the same data reporting requirements to ensure ZNC alignment with BERDO and more accurate localized eGrid factors.
- Align ZNC updates with BERDO update timelines of every five years.
- The BPDA should establish a ZNC Standard Advisory Group to solicit industry input on the BPDA process for updating the thresholds, targets, and standards in future years.

ABC Comments

TAG Specific Comments - continued

On-Site Renewable Energy TAG

- We recommend the 12-month grace period be extended and/or linked to Eversource being at the table and approving projects. We also recommend clarity be provided about how compliance with the on-site renewable energy standard will be incorporated into the certificate of occupancy process.
- We further recommend that the BPDA share details on how it plans to manage and staff this new caseload to ensure developers have adequate support in meeting any final requirements.
- We recommend the BPDA provide clarity about the conditions under which exemptions can be pursued and what the process for doing so will be.
- Clarify if the 50% capacity is for solar infrastructure or solar panels.

ABC Comments

TAG Specific Comments - continued

Renewable Procurement TAG

- Pursue a Community Choice Aggregation offering a 100% renewable option that has a more reasonable cost premium than the current offering.
- Clarify multiple references to a Cooperative Agreement and use.
- Clarify and make available exemption for wind or solar generators located outside the ISO New England territory through VPPAs located in regions with electric grid emissions higher than New England's ISO.
- clarify what, if any, relationship the Renewable Energy Investment Fund and BERDO's Equitable Emissions Investment Fund will have, and how funding from the Renewable Energy Investment Fund will be allocated.

ABC Comments

TAG Specific Comments - continued

Embodied Carbon TAG

- Further engage developers on the feasibility of the TAG recommendations and what intermediate steps are necessary to test proof of concept, increase awareness, and develop markets to support the inclusion of embodied carbon in Boston's ZNC Zoning Initiative.

NEXT STEPS

Technical Advisory Group Reports & Recommendations will be finalized and posted.

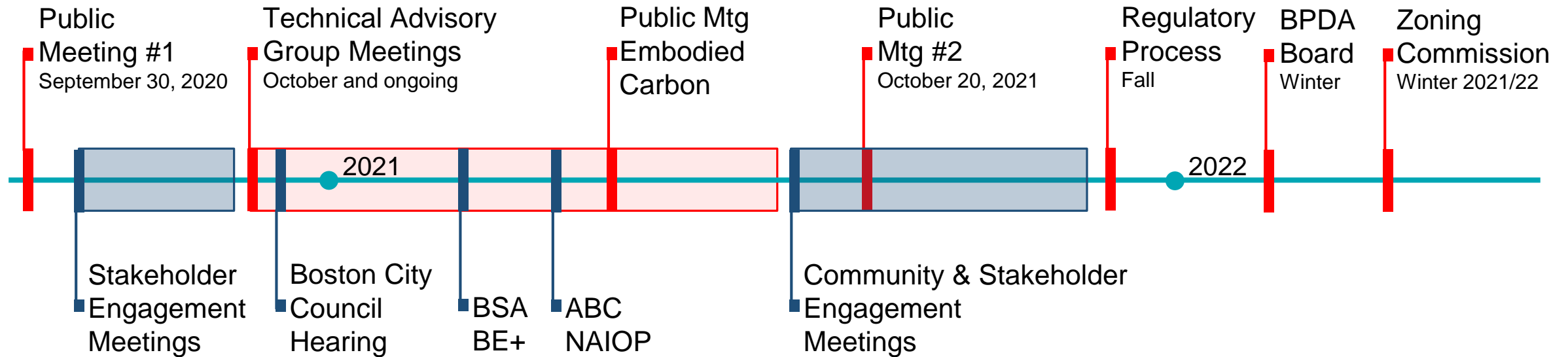
DRAFT Zoning & Policy Regulations will be developed & posted with opportunities for stakeholder, public & community feedback.

Visit “Zero Net Carbon Building Zoning Initiative” webpage:

bostonplans.org/ZNCBuildingZoning

ZNC Building Zoning

PUBLIC PROCESS TIMELINE



- Community & Stakeholder Meetings – *ongoing through December*
- Open House and Office Hours events - *to be scheduled November and ongoing*

ZNC Building Zoning Materials and Contacts

For information, materials, updates and submitting comments, please visit the “Zero Net Carbon Building Zoning Initiative” webpage:

bostonplans.org/ZNCBuildingZoning

- Comments may be submitted directly from project webpage or emailed to John.Dalzell@Boston.gov
- Meeting presentations and recording will be uploaded to the project webpage in the next two days.