Zero Net Carbon Building Zoning - Public Meeting 1 - Q&A Report 2020-09-30

The following questions were posted by participants during the September 30th public meeting. Questions have been organized by focus area and similar questions have been grouped together to allow for a single response. Questions are as submitted. Answers provided during the meeting have been edited for completeness, to reduce length, and to respond to similar questions.

Question - Low Carbon Buildings	Answer(s) - including post webinar revisions and responses
When will you bring all groups together to form district wide green building and living standards (per Travis' question) ? The lower income neighborhoods are being developed now. We need consideration NOW. i.e., Melnea's trees, etc... What role will outside scaping play ? We see institutional building plans in the works which focus on the inside of the inside efficieny of the buildings with little to know consideration being shown to the outside of the building and the surroundng area. As an example, Wenworth wants to build a 13 story building on Huntington Ave. with no plan (so far that I am aware of) for solar or other renewable capture - among other issues.	Good suggestion for further discussion. Several recent BPDA and City planning initiatives have included district wide strategies reflecting both local and City wide priorities. For example density and height bonuses for the provision of additional affordable also require additional green building and renewable energy measures.
When you say net-zero buildings enjoy short paybacks, this assumes the owner benefits from reduced utility costs. For the majority of developer projects, tenants and not the developer will enjoy reduced utility costs. In these cases, the added cost of net-zero never pays back. Can you please address this?	The tenant/landlord split incentive is a real concern. We're very interested in exploring solutions like green leases, that allow cost and benefit-sharing between owners and tenants - if you've had experiences with them, we'd love to hear from you!
Thanks Katie and Kat - to this discussion, I would add the split incentive between developers and owners, where development financial and legal entities very often differ from the long term ownership entity for any given building. There's a need to make sure that the value of net-zero buildings translates across that transaction between the two.	
There are secondary issues with HVAC energy savings, primarily build up of indoor source contaminants and infiltration from outside of ambient air pollution, the latter of most concern in places with high traffic volume such as most of downtown Boston. Could you speak to this issue?	Thanks for elaborating. To be clear, high performance HVAC does not suggest reducing the amount of fresh air needed to maintain healthy indoor air quality. We fully agree that indoor combustion risks increasing indoor pollution. A secondary benefit of all electric buildings, including electric / induction stoves, is the significant reduction of indoor particulate matter which is, in most cities, is the number one source of indoor PM. Increased airtightness will also reduce the infiltration of ambient pollution sources. Dedicated Outdoor Air Systems (DOAS) can control the amount of fresh air, include energy recovery and MERV filtration, and ensure healthy indoor air quality throughout a building.
Well, tightening up the building envelope and reducing the amount of outdoor (not necessarily fresh) air supply has the potential to raise levels of indoor generated pollutants such as off gassing from materials and generating from cooking. On the other end, reducing outdoor air supply will tend to reduce the amount of ambient pollution that gets into the living space, but especially for particulate matter, which is our main concern, the quality of in line filtration (MERV rating) is another important factor.	
Electirc cooking is a minor part of cooking related combution products, most of which are from highly heated food. In high traffic areas, outdoor PM is the major source indoors. If you are interested contact me via email to talk more. We have done over a decade of research in the Boston area on traffic PM and health effects for people living near highways...	
Is the heating/cooling the dominant GHG driver in all building typologies? Or does it vary a bit?	In Boston, given our climate, for most building typologies yes. Presently, most heating energy sources are fosil fuels and the dominant source of GHG emissions. Even in an all-electric buildings, heating and cooling loads often make 50% or more of the energy end use.
How will you determine the carbon allowances for existing buildings.	You can learn more about the process to develop carbon targets for existing large buildings at our webpage on the project: https://www.boston.gov/departments/environment/developing-carbon-targets-existing-large-buildings#get-involved. Check out the slides from our most recent Open House for more insight into the methodology being used.
How do you account for emergency power systems using fossil fuels?	Great question for further discussion!
Hoping you are pushing passive house as the way to get to net zero, not LEED.	Passive building enclosure and system strategies, including those featured in the Passive House rating system, are the top priority for the Low Carbon Building focus of the ZNC Building Zoning.

At the moment affordable housing developers can't afford electric DHW due to the cost of gas versus electricity.	Great comment and an import consideration for further analysis and case studies! The Department of Neighborhood Development found that electric Domestic Hot Water (DHW) systems can be cost competitive. We would welcome any system and cost analysis and look forward to discussing this more!
Can you elaborate on electrification strategies Boston is pursuing & whether city will seek to eliminate onsite combustion?	Electrication strategies and related policy are a focus of this initive. We look forward to discussing this more!
Will gas-fired boilers be forbidden under the zoning plan, including for large buildings? Future retrofits will be expensive even with net-zero ready systems.	
Sorry if I missed this, but can someone explain what she meant by “the envelope performs on its own”?	Upcoming building energy code changes will require an "envelope backstop" calculation to ensure building exteriors are designed to minimum performance levels. Presently, buildings demonstrate energy code compliance as a "whole building" reflecting the performace of both the building enclosure and heating / cooling systems. This can allow for poor envelope performance to be "offset" by better system strategies, like high performance HVAC. The upcoming code changes will require that the "envelope performs on its own" without offsets from other strategies.
BE+, the local US Green Building Council chapter, recently completed a study of the cost of zero energy buildings; the report, Zero Energy Buildings in Massachusetts: Saving Money from the Start" can be found online.	https://builtenvironmentplus.org/zero-energy-buildings/
Can you describe 'impact' again?	In the context of ZNC buildings, "impacts" are primarily the emission of greenhouse gases (GHG) but there are severals "impacts" that we also discuss. Going forward we will work to be more specific and clear.
Questions - On-site Renewable Energy	
If a project generates renewable energy on site or off site, but uses renewable energy credits (e.g. under the SMART program) to help finance the renewable energy system, would that still count as a carbon emissions reduction for the project, since the environmental attributes of that system would be sold to a REC buyer?	Good question! This is one of the issues we’ll be discussing throughout the process. What is your opinion?
Thanks! My take is that if an on-site solar PV system, e.g., includes the sale of RECs in the financing structure, and those RECs then mostly likely go to offset another building’s emissions (maybe even within Boston), that the on-site generation from the system would be double counted if also applied to the host building. That takeaway, though, could upset the incentive to build on-site solar PV enough that it might not happen. To combat that, efforts at aggregated solar PV installation procurement, community-scale and small scale investment into larger local development, low or no cost financing for solar PV projects with local ownership, could all reduce the need for RECs for any given project to pencil out.	
It seems that the utilities can be a hurdle to incorporate certain amounts of renewable systems on their grids. How might this factor into the challenge/implementation?	Good comment and question! We will be disucssing this further in the work ahaed.
Since this is about zoning, is there any thought to having to protect one property owner's solar access from others?	Protecting sun access for buildings and especailly solar systems is growning concern. While zoning does not directly provide for solar access, building dimensional setbacks requirments and height limits generally protect one property owner from another. There is greater risk for conflict in growth areas and highrise building districts. Good item to discuss further!
Has the impact of the urban heat island effect been considered relative to the potential increase in solar panel use within the city (on buildings)?	Good question to disucss in the work ahaed.
Can you discuss support/possile incentives for integration of BIPVs in the building envelope as a way to generate onsite energy? When it is a large building, this will be significant, even if discounted as being on a vertical surface. Thank you	Great suggestion; yes we will be looking a BIPV and other new solutions that can best enable carbon emission reduction!

Questions - Renewable Energy Procurement	
What is the timing of the electrification of the grid?	In the Carbon Free Boston analysis, it was based on the state's Clean Energy Standard, which "minimum percentage of electricity sales that utilities and competitive retail suppliers must procure from clean energy sources. The minimum percentage begins at 16% in 2018, and increases 2% annually to 80% in 2050." For more information: https://www.mass.gov/service-details/program-summaries The Governor has since committed to carbon neutrality in 2050, but the Clean Energy Standard has not been updated as of yet.
Can you comment on Clean Peak Certificates?	We will discuss daily, seasonal (including Clean Peak Certificates) and annual metrics for the Renewable Procurement requirement in this process, but it is anticipated that the metrics will be annual and not consider daily or seasonal peak considerations.
Questions - Embodied Carbon	
Will there be any consideration of buildings' embodied carbon, as this will become as, or more, important than buidling energy use as they become more efficient?	Reducing the embodied carbon of building construction material will be part of the City's approach to carbon neutrality. BPDA staff are actively involved in discussions on the use of structural mass timber / Cross Laminated Timber as an alternative to carbon intensive materials such as concrete or steel. LEED Rating Systems value the use of reduced embodied carbon materials and Article 37 updates offer opportunities to amplify those values. The ZNC Building Zoning initiative is focused on building operational performance.
I encourage you to look at embodied carbon in some way. We need to think about the "time value of carbon". Embodied carbon emissions happen today, while energy savings reduces carbon over time. But considering the tight keyhole the planet must pass through the, its important we create savings today.	
John, does the City's plan include a calculation of the embodied carbon in new buildings and/or retrofitting? Seems like part of the goal should be emphasizing carbon sequestering materials to drawdown carbon. Thanks.	
Are you looking at carbon content of building materials as well? Embodied carbon?	
Questions - Policy	
Is there a legal hurdle to requiring zero carbon buildings or specifying building energy performance? Does this conflict with the State Building Code? If so, how is hurdle navigated?	The Boston Zoning Code already includes measures reducing the adverse impacts of buildings including carbon emissions. We continue to work with State officials and do not anticpate any conflicts with the State Building Code.
For projects following an off-site renewable pathway, how will you enforce that buildings continue to purchase renewables after they have their COO?	Great question and a key discussion area for the work ahead. The current Building Energy Reporting and Disclosure Ordinance provides a model for post occupancy reporting.
What size of buildings will be required to meet these standards?	(Live Answered) Article 37 currently applies all new proposed buildings over 50,000 SF in area. As recommended in the 2019 Climate Action Plan, we will be discussing the Article 37 SF threshold, including lowing it to 20,000 SF. Similarly we will be discussing ZNC Building Zoning thresholds and alignment with BERDO thresholds and updates.
Should project size under Article 37 be adjusted to align wiht BERDO at 35,000 sf?	
This question is very basic, but I want to make sure I understand the anticipated end product of this effort. I assume it will be a regulation about the emissions of new buildings to be built in Boston. What buildings will be covered? And what does it have to do with zoning? I realize that a Massachusetts city can't write its own building code. But will we have any zones where it is still OK to build higher emission buildings?	
Have you decided what size buildings this initiative will address? Are we talking about all buildings or just those greater than 50,000 sq feet? Sorry if I missed this.	
Glad to be here! A few questions: 1) Will you be sharing how the city is defining ZNC? e.g. EUI requirements by building type, mandates for on-site renewables, guidance on where offsite renewables could be sited? 2) Has the city considered any incentives (FAR bonus, tax reductions) for developers wishing to pursue ZNC before it is required? 3) Are you also considering embodied carbon? Skanska is using the EC3 tool on all of our projects going forward. We developed this tool in partnership with University of Washington Carbon Leadership Forum and many other external partners. It is open source and free for anyone to use. https://www.buildingtransparency.org/en/	These are all great questions - see similar questions and related answers. These are items for discussion in the work ahead.
Please offer some thoughts on when new standards would be effective and how quickly the walk to Net Zero would occur.	Great question and a key discussion area for the work ahead. We look forward to hear from folks on this topic - what do you think the phasing in and timeline should look like?

Questions - State Building Code	
Hi what codes will be effective next January? Thanks.	The state has scheduled and rescheduled several building and energy code updates. The energy code update to International Energy Conservation Code / IECC 2018 standard with MA Amendments is
I believe energy code change is effective 11/7/20. IECC 2018 with MA Amendments.	
Questions - Utilities	
With more buildings moving toward electrification, there will no doubt be more load and stress on the grid. Have conversations began with utility providers on whether their infrastructure is updated and prepared to accepted this addtional load? What safety factor or reliability can we expect? For buildings without generator power and electricity as the only form of heat, there is a risk of no heating source if there are power outtages during winter storms. Please comment - thank you.	(Live Answered) This is a critical discussion area for the work ahead and points to the importance of reducing the demand for energy in both new and existing buildings.
Has the City of Boston been reaching out to Utilities that are serving the City? Have the utilities made a committment to support the City's goals? Has the City of Boston studied the idea to create their own municipal electrical utility? Towns and municipalities in the Commonwealth who have their own municipal light plant have more control over their energy portfolio and achieve their goals more effectively.	
How does the city plan to manage generation source considering the lack of jurisdictional oversight on utilities (see, the AG's recent decision about the regulatory schemes that oversee gas infrastructure regulation)?	(Live Answered) This is a critical discussion area and part of the work ahead.
Is there any way to incentivize a small MA municipal energy company? We are working with one and they are not incentivizing anyone to do solar - they care most about producing during peak hours (4-8pm) which solar doesnt help. They said - hey, if you want to do a gas generator, we'll pay for it! I wish they would be on board.	
Thank you to the presenters. Given the lack of natural gas pipeline capacity into boston; and the fact that most of the area's electricity is from gas; how will we electrify boston when we don't even have the capacity to support existing needs?	
Questions - Engagement	
This does not feel like a public meeting with no ability for attendees to see each other, or speak, or use the chat box. I am continuously disappointed by the BPDA's facilitation of "public meetings"	(Live answered) We are using the Zoom Q&A and Raise Hand features for participant questions, comments and discussion. Following the presentations the meeting will be open for participant comments and discussion.
Would you please address this?	
Hi John, with respect, I have attended many meetings on Zoom with well over 200 people that still use the video and mic features for attendees. If there are concerns around background noise, the host of the meeting has the control to individually mute people. I think most people are familar with muting themselves when not speaking by now. I see this as the BPDA holding control over community participation. I will continue to raise this issue until it is remedied.	
Will these slides be made available post-meeting?	The presentation, recording of the meeting, and related materials have been posted at: bostonplans.org/ZNCBuildingZoning
Will we be able to see a full list of participants?	Out of respect for individual privacy we do not post the names of participants.
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