



# ORDINANCE COMMITTEE

## COMMITTEE MEETING

~ MINUTES ~

Wednesday, April 26, 2023

3:00 PM

Sullivan Chamber  
795 Massachusetts Avenue  
Cambridge, MA 02139

The Ordinance Committee will hold a public hearing to continue the discussion from the April 12, 2023 Ordinance Committee meeting on the proposed amendments to the Building Energy Use Disclosure Ordinance, #2021-26

Attendee Name	Present	Absent	Late	Arrived
Burhan Azeem	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dennis J. Carlone	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Alanna Mallon	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Marc C. McGovern	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3:04 PM
Patricia Nolan	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3:04 PM
E. Denise Simmons	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3:20 PM
Paul F. Toner	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3:04 PM
Quinton Zondervan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Sumbul Siddiqui	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

A public meeting of the Cambridge City Council's Ordinance Committee was held on Wednesday, April 12, 2023. The meeting was Called to Order at 5:30 p.m. by the Chair, Councillor Zondervan. Pursuant to Chapter 2 of the Acts of 2023 adopted by Massachusetts General Court and approved by the Governor, the City is authorized to use remote participation. This public meeting was hybrid, allowing participation in person, in the Sullivan Chamber, 2<sup>nd</sup> Floor, City Hall, 795 Massachusetts Avenue, Cambridge, MA and by remote participation via zoom.

**At the request of the Chair, City Clerk LeBlanc called the roll.**

Councillor Azeem – Present/Remote

Councillor Carlone – Present/Remote

Vice Mayor Mallon – Present/In Sullivan Chamber

Councillor McGovern – Present/Remote

Councillor Nolan – Absent\*

Councillor Simmons – Absent

Councillor Toner – Present/In Sullivan Chamber

Councillor Zondervan – Present/In Sullivan Chamber

Mayor Siddiqui – Present/In Sullivan Chamber

**Present – 7, Absent – 2. Quorum established.**

**\*Councillor Nolan was marked present in the Sullivan Chamber at 5:34p.m.**

The Chair, Councillor Zondervan gave opening remarks and shared that the call of the meeting was to continue the discussion on the proposed amendments to the Building Energy Use

Minutes Acceptance: Minutes of Apr 26, 2023 3:00 PM (Committee Reports)

Disclosure Ordinance (BEUDO), Ordinance #2021-26. Councillor Zondervan noted that the City Manager, Yi-An Huang was present at the meeting, as well as Iram Farooq, Assistant City Manager for the Community Development Department (CDD). Joining Iram Farooq was Susanne Rasmussen, Director of Environmental and Transportation for CDD, Seth Federspiel, Energy Planner for CDD, Nikhil Nadkarni, Energy Planner for CDD, and Nick Stoutt, Assistant Commissioner for Architectural Services for the Department of Public Works (DPW).

The Chair, Councillor Zondervan recognized the City Manager, Yi-An Huang who offered opening remarks and shared that climate change is the fight of our generation. He noted that everyone is present at the meeting today because the City recognizes that it has not acted quickly enough with climate change goals, and globally everyone is seeing more of the impacts of extreme weather events, changes to the planet, and the impact on communities around the world. The City Manager recognized and thanked the team from CDD and their aggressive response to create a forward path for the City to follow that also provides realistic goals for property owners.

**The Chair, Councillor Zondervan recognized Iram Farooq who, along with her team, gave a presentation titled “Regulating Building Emissions via BEUDO: A Critical Step Towards Net Zero Cambridge,” copy attached.** Iram Farooq reviewed the executive summary, noting that the City is committed to supporting Cambridge property owners with strong assistance and connections to incentives to be able to move forward together with this challenging, but critical work. Susanne Rasmussen noted that CDD plans to share an amended proposal that is materially different from the original in four areas, which included, trajectory, carbon offsets, exemptions, and policy review. Seth Federspiel reviewed the carbon offsets proposal and shared the criteria to ensure quality when using carbon offsets. Nick Stoutt gave an overview of the forty municipal buildings that would fall under the BEUDO category, and the plans of making them more energy efficient moving forward. Nikhil Nadkarni shared and described some of the state and federal investment climate actions that were available, as well as the City’s commitment to support building decarbonization. Nikhil Nadkarni noted that on Monday, April 10, 2023, the City announced a one-year pilot partnership with BlocPower which provides building retrofits in a no upfront cost structure. Iram Farooq concluded the presentation by providing provisions and recommendations regarding the proposed amendments. Iram Farooq noted that in terms of the target trajectory, CDD is recommending staying with the 2035 target date, but property owners who have the most difficulty to meet that date would go on a 2050 trajectory timeline.

**The Chair, Councillor Zondervan recognized Councillor Toner who suggested that members of the Council submit questions to CDD regarding their presentation and BEUDO to help with follow up discussions at the next BEUDO meeting.**

**The Chair, Councillor Zondervan opened Public Comment. Each member of the public was allowed two minutes.**

Margery Davies, 35 William Street, Cambridge, MA, shared that it is important to act, but to also be careful about global offsets that do not meet the criteria.

Virginia Greene, 14 Vandine Street, Cambridge, MA, shared that they were in favor of passing the Green New Deal for Cambridge exactly how it was written.

Sharon Britton, 950 Massachusetts Avenue, Cambridge, MA, thanked the Councillors who listened to concerns from condominium owners and offered suggestions on how to help condominium owners help with achieving net zero goals.

John Patrick, 950 Massachusetts Avenue, Cambridge, MA, thanked Councillors who listened to concerns from condominium owners and thanked CDD for recognizing the special circumstances condominium owners are facing.

Logan Patrick, 950 Massachusetts Avenue, Cambridge, MA, thanked the Council for recognizing the needs and ownership structures for large condominium buildings and shared that they support finding ways to reduce emissions.

Kathy Dalton, 6 Arlington Street, Cambridge, MA, shared they would like to see the City go forward in an inclusive participatory planning process so condominium owners can help get to net zero together.

Joyce Levine, 2353 Massachusetts Avenue, Cambridge, MA, shared they were happy that the City is looking at condominiums more as residential units and noted that it is important to meet the requirements in a way that is affordable for the people who live in the City.

Bridget Hanna, 12 Haskell Street, Cambridge, MA, shared that the world can look to Cambridge to see what can be built by strengthening BEUDO and taking on the challenges.

David Lawrence, 1 Aberdeen Way, Cambridge, MA, shared their strong support for the proposal to regulate condominiums together with non BEUDO properties, rather than with large institutional properties.

Phil Rinehart, 17 Otis Street, Cambridge, MA, thanked CDD for their updates and shared that they support the proposal and offered suggestions.

Anne Sa'adah, 221 Mt. Auburn Street, Cambridge, MA, thanked Councillors and CDD for listening to condominium owner concerns and hopes that going forward the process is smarter and faster.

Helen Walker, 43 Linnaean Street, Cambridge, MA, thanked Councillors who helped make the proposed amendments for condominium owners and offered suggestions on costs.

Cynthia Hibbard, 23 Ellsworth Avenue, Cambridge, MA, shared they support Cambridge achieving net zero greenhouse gas emissions from existing large building by 2035.

Nancy Kilburn, 44 Garden Street, Cambridge, MA, shared it is important to get large institutions and biotech industries to true net zero by 2035.

Arthur Berger, 1600 Massachusetts Avenue, Cambridge, MA, was in favor of the proposed amendments and thanked all those who help contribute to them.

Marilee Meyer, 10 Dana Street, Cambridge, MA, thanked the Council for understanding that compliance must be realistic and practical for fixed income and elderly residents.

Anirudh Wodeyar, 15 Seagrave Road, Cambridge, MA, shared they were in favor of the strong version of BEUDO without the new amendments or something as close to that as possible.

Drew Pendergrass, 20 Oxford Street, Cambridge, MA, shared they were in support of the strong version of BEUDO.

Eric Grunebaum, 98 Montgomery Street, Cambridge, MA, offered comments on the technology and economics that is available to produce high-efficiency fully electrified buildings.

Beth O'Neill Maloney, 510 Kendall Street, Cambridge, MA, shared that the City, the business and residential community, and Eversource should all be working collectively to reduce greenhouse gas emissions.

Lee Farris, 269 Norfolk Street, Cambridge, MA, shared they were in support of passing the strongest version of BEUDO.

Yve Torrie, 14 Beacon Street, Boston, MA, shared that they support the 2035 approach that was presented by the City Manager and CDD that includes flexibility including offset exemptions and baseline options.

Heather Henriksen, 14 Story Street, Cambridge, MA, from Harvard University shared concerns that should be taken into consideration.

Sahithi Madireddy, 320 Memorial Drive, Cambridge, MA, shared they were in support of the strong BEUDO version.

Michael Nguyen-Mason, 17 Prospect Street, Cambridge, MA, shared they were in support of the strong BEUDO version and noted they were inspired by all the people who have made a commitment to bettering the world.

Kendyl Maher-Trumble, 348 Walden Street, Cambridge, MA, shared they were offering comments on behalf of Harvard University and noted that Harvard has established a climate goal including fossil fuel neutral by 2026 and fossil fuel free by 2050 and offered suggestions for the Council to consider moving forward.

Emily Crawford, 3 Crawford Street, Cambridge, MA, echoed comments made for a green Cambridge urging that as many buildings as possible meet the deadline of true net zero by 2035.

Owen Leddy, 260 Harvard Street, Cambridge, MA, urged the City Council to stick with the version of this policy that they had originally proposed.

Mary Caulfield, 6 Crawford Street, Cambridge, MA, stressed the importance of having a strategy for retrofitting old buildings that are both transparent and actionable.

John McDowell, 10 Dana Street, Cambridge, MA, shared that condominium owners look forward to being a part of the process going forward.

Finley Foster, 5 Porter Park, Cambridge, MA, shared they were in support of the strongest version of BEUDO.

Gleb Bahmutov, 19 Winslow Street, Cambridge, MA, urged the Council to pass the strong BEUDO version.

David Mazumder, 500 Memorial Drive, Cambridge, MA, asked the Council to adopt the strongest version of BEUDO with net zero emissions for covered buildings by 2035.

Melanie Abrams, 1539 Cambridge Street, Cambridge, MA, offered comments on keeping the strong version of BEUDO.

**The Chair, Councillor Zondervan recognized Councillor Toner who made a motion to extend the meeting by thirty minutes.**

**City Clerk LeBlanc called the roll.**

Councillor Azeem – Yes

Councillor Carlone – Yes

Vice Mayor Mallon – Yes

Councillor McGovern – Yes

Councillor Nolan – Yes

Councillor Simmons – Absent

Councillor Toner – Yes

Councillor Zondervan – Yes

Mayor Siddiqui – Yes

**Yes – 8, No – 0, Absent – 1. Meeting extended to 8:00p.m.**

**Public Comment resumed.**

Carolyn Magid, 71 Reed Street, Cambridge, MA, shared they were in favor of the strong version of BEUDO.

Aaron Shakow, 4 Newton Street, Cambridge, MA, urged the Council to reject the City Manager's attempt to create loopholes like extending the compliance window for large commercial buildings to 2050.

Patrick Barrett, 41 Pleasant Street, Cambridge, MA, asked the Council to look at the impact of BEUDO on small property owners and noted it is not about money, but about practical implications about how to implement these regulations without property owners going bankrupt.

Steve Miller, 92 Henry Street, Cambridge, MA, thanked City staff for putting together information and raised the point for the need for flexibility.

Peter Kirby, 128 Oxford Street, Cambridge, MA, shared that it is important to put these policies in place so that new and old buildings are being adjusted to the state they need to be in in the timeline that needs to happen.

Susan Murcott, 149 Atlantic Avenue, shared that they support the strong version of BEUDO.

Gail Charpentier, 19 Murdock Street, Cambridge, MA, urged the Council to pass the strongest version of BEUDO and reject the City Manager's rewrite for commercial development.

Yugi Wang, 510 Kendall Street, Cambridge, MA, asked the Council to pass a BEUDO that is practical and one that does not penalize people who are actively trying to work towards the City and State goals.

Diane Martin, 34 Madison Avenue, Cambridge, MA, asked the Council to vote in favor of the amendments to BEUDO that require buildings to reduce the greenhouse gas emissions and achieve building net zero by 2035.

Asako Severn, 395 Broadway, Cambridge, MA, shared that they supported the proposed amendments for condominium owners and thanked the Council for listening to their concerns.

Marc Truant, 32 Warren Street, Cambridge, MA, stressed that the key to getting to net zero is changing the approach to utilities in the State.

Nancy Donohue, 1 Kendall Square, Cambridge, MA, Director of Government Affairs for the Cambridge Chamber of Commerce, shared their ongoing concern that the City Council needs to ensure that there are achievable, attainable, and science-based solutions.

Sarah Gallop, 77 Massachusetts Avenue, Cambridge, MA, Director of Government and Community Relations at MIT, stressed the importance of everyone working together to achieve climate goals.

**The Chair, Councillor Zondervan recognized Councillor Nolan who made a motion to extend the meeting by an additional thirty minutes.**

**City Clerk LeBlanc called the roll.**

Councillor Azeem – Yes

Councillor Carlone – Yes

Vice Mayor Mallon – Yes

Councillor McGovern – Yes

Councillor Nolan – Yes

Councillor Simmons – Absent

Councillor Toner – Yes

Councillor Zondervan – Yes

Mayor Siddiqui – Yes

**Yes – 8, No – 0, Absent – 1. Meeting extended to 8:30p.m.**

### **Public Comment resumed.**

Stephen Helfer, 3 Crawford Street, Cambridge, MA, thanked the Council for listening to the concerns of condominium owners.

Reva Stein, 2 Seagrave Road, Cambridge, MA, shared they support amendments for large buildings to reach zero emissions by 2035.

Aaliya Hussain, 515 Beacon Street, Cambridge, MA, urged the Council to pass the strong version of BEUDO that will hold institutions and large buildings to the 2035 deadline.

Rick Clemenz offered comments on BEUDO, engineers, and the costs associated with going energy efficient.

Joe Higgins, 77 Massachusetts Avenue, Cambridge, MA, Vice President of Campus Services for MIT, thanked the Council and CDD for the proposed amendments and noted there is more work that needs to be done together.

Michael Grill, 1035 Cambridge Street, Cambridge, MA, requested that commercial condominiums be excluded from the 2035 deadline and technical assistance be expanded to include commercial condominium buildings.

Amber Houghstow, 18 Montrose Street, Cambridge, MA, shared that they are in support of the strong version of BEUDO.

Mary Baine Campbell, 36 Linnaean Street, Cambridge, MA, shared that according to the UN it is necessary to accomplish green goals by 2030 because climate change will continue to endanger the fate of world.

Clifford Snider, 191 Commonwealth Avenue, Boston, MA, shared that they oppose the proposed amendments.

Jen urged the City Council to fight those who stand in the way of net zero and to have necessary offsetting as low as possible.

Daniel Dominges shared that they feel some of the pushback is not motivated by science, but by something else.

**The Chair, Councillor Zondervan recognized Councillor Toner who made a motion to recess the meeting to 3:00 p.m. on Wednesday, April 26, 2023.**

**City Clerk LeBlanc called the roll.**

Councillor Azeem – Yes

Councillor Carlone – Yes

Vice Mayor Mallon – Yes

Councillor McGovern – Yes



Councillor Nolan – Yes  
 Councillor Simmons – Absent  
 Councillor Toner – Yes  
 Councillor Zondervan – Yes  
 Mayor Siddiqui – Yes  
**Yes – 8, No – 0, Absent – 1. Motion passed.**

**The Ordinance Committee recessed at approximately 8:20 p.m.**

**On Wednesday, April 26, 2023, the Cambridge City Council’s Ordinance Committee that recessed on April 12, 2023 was Called Back to Order at 3:00 p.m. by the Chair, Councillor Zondervan.** Pursuant to Chapter 2 of the Acts of 2023 adopted by Massachusetts General Court and approved by the Governor, the City is authorized to use remote participation. This public meeting was hybrid, allowing participation in person, in the Sullivan Chamber, 2<sup>nd</sup> Floor, City Hall, 795 Massachusetts Avenue, Cambridge, MA and by remote participation via zoom.

**At the request of the Chair, City Clerk LeBlanc called the roll.**

Councillor Azeem – Present/In Sullivan Chamber  
 Councillor Carlone – Present/In Sullivan Chamber  
 Vice Mayor Mallon – Present/In Sullivan Chamber  
 Councillor McGovern – Absent\*  
 Councillor Nolan – Absent\*  
 Councillor Simmons – Absent\*  
 Councillor Toner – Absent\*  
 Councillor Zondervan – Present/In Sullivan Chamber  
 Mayor Siddiqui – Present/In Sullivan Chamber

**Present – 5, Absent – 4. Quorum established.**

**\*Councillor McGovern, Councillor Nolan, and Councillor Toner were marked present in the Sullivan Chamber at 3:04 p.m.**

**\*Councillor Simmons was marked present and remote at 3:20 p.m.**

**The Chair, Councillor Zondervan offered opening remarks and noted that the call of the meeting was to continue the discussion on proposed amendments to the Building Energy Use Disclosure (BEUDO), Ordinance #2021-26.** Present at the meeting was City Manager, Yi-An Huang, Deputy City Manager, Owen O’Riordan, and Iram Farooq, Assistant City Manager for the Community Development Department (CDD). Joining Iram Farooq was Susanne Rasmussen, Director of Environmental and Transportation for CDD, Seth Federspiel, Energy Planner for CDD, and Nick Stoutt, Assistant Commissioner for Architectural Services for the Department of Public Works (DPW).

The Chair, Councillor Zondervan recognized Mayor Siddiqui who offered opening remarks. Mayor Siddiqui acknowledged that there has been a lot of work and time put into BEUDO.

**Mayor Siddiqui’s Remarks:** I want to recognize that there has been a lot of work and time put into BEUDO since 2021. We are lucky to have so many climate advocates and stakeholders in Cambridge who helped get these amendments to where they are today. Work on these specific amendments has been ongoing since spring of 2022 when I convened stakeholders impacted by this ordinance, which Councillors had asked that I do. The stakeholders included Harvard, MIT,

the Cambridge Chamber, Kendall Square Association, a few others, along with Councillor Nolan and Councillor Zondervan. I want to take a minute to recognize Harvard and MIT and specifically Tom and Sarah, for all their work on this and for being partners throughout this process. They are committed to this work and have listened. As the process unfolded, I will be honest, we had a challenging time reaching consensus and there was oversight in the initial conversations that did not include condominium owners and some of the smaller/mid-sized building owners. I apologize for that oversight. In late 2022, we asked CDD to come back to us with an updated framework, and we saw that table and presentation a few weeks ago. This version includes input from several key stakeholders, and the amendments offered today build on that and make the ordinance slightly stronger, while retaining the feedback that has been offered. **Councillor Zondervan and Councilor Nolan and I worked on amendments shown on the chart presented today (copy attached) and I am grateful for the work they have done to get this compromise to where it is, and even they have had to compromise on this.** Before we get to the amendments, we have a few presenters specifically on offsets and the current CDD proposal. I recognize there are questions that CDD spent time on that, and I thank the Councillors who sent questions beforehand, we will also have time to discuss. First, we will hear from presenters, then Councillor Nolan, and then we will do a Q&A.

**The Chair, Councillor Zondervan recognized panelist Susan Murcott, who was joined remotely, and gave a presentation titled “Comment on Community Development Department (CDD) Amendment,” copy attached.**

**The Chair, Councillor Zondervan recognized panelists Sahithi Madireddy and Allesandre Santos who gave a presentation titled “Emissions Analysis,” copy attached,** which reviewed building emissions permitted by 2050 and showed examples with and without offsets. Allesandre Santos shared thoughts on climate justice from an international perspective and noted that not all carbon credits are good and that a lot of injustice is done with money sent overseas, especially impacting indigenous people negatively.

**The Chair, Councillor Zondervan recognized Councillor Nolan who offered remarks and reviewed amendments being offered by Mayor Siddiqui, Councillor Zondervan, and herself.**

**Councillor Nolan’s Remarks:** First, thank you to everyone in this room - it is an exciting moment worthy of celebration. I want to state it is exciting to be considering this - assuming we pass something along the lines of the proposal before us, we can be proud that we are climate leaders. It will take the whole community to make this work. We know that. We also recognize as the Mayor said, it has taken a long time to get here. Yet the world is demanding of us to be bold, to try, to aspire, to require the reductions we have been hoping/planning/studying for a decade. We also recognize two important points: we may try things that do not work - we will learn a lot. That is expected, and it will contribute to the field when we succeed. AND when we fail. We embrace the role of innovators and experimenters. Second, we do not have all the answers. That does not mean we cannot and should not pass something. The classic example is the Kennedy moonshot. We had no idea how to do it. We did it, and the covid vaccine - we had no idea, and it was crazy to think we could develop the vaccine and administer millions, then billions of doses.

**Changes Proposed** - Mayor Siddiqui, Councillor Zondervan and I are proposing four changes to the framework of amendments before us from CDD:

Changing the Threshold to 50k sq ft. Threshold of 50K is used in several other city building related ordinances, including the Green Building and embodied emissions - so it makes sense to



use from that perspective. Note that while it is “only” 160 buildings, we need every possible addition to our emissions reduction possible. We are supposed to lower our emissions by 50% by 2030. State law requires that. BEUDO commercial buildings represent only 52% of all citywide emissions. So if only 100K buildings and above are subject to the 2035 timeline, that translates into a reduction of about 23% in citywide emissions by 2030 - only half of goal of 50% citywide. By including the 160 50K SF buildings, that percentage goes up by about 5%, and we need every bit we can get.

**Exemptions** – Charge the Review Board with approving all decarbonization plans and carbon offsets. Codify that there shall be no less than 50% representation from climate advocates and climate scientists on the Review Board, including all 5 technical experts. Local Offsets Required if available - PAVERE /AVID+ requirement / Creating local offsets. Within BEUDO, to ensure that we are having true emissions reductions, we must prioritize offsets within Cambridge, and locally, too, could be useful in helping both our property owners subject to BEUDO and those facing new demands from a yet-to-be-designed transaction-point upgrade policy. The first group will need offsets on an interim basis and the second will need financial support, both of which can be made possible through a well-designed system of offsets. By incentivizing local projects, we are creating economic incentives for larger building owners to fund retrofit projects for smaller buildings in the future.

Policy Review - Change completion date of initial review from 2032 to 2028. A five year review is appropriate for several reasons. The existing BEUDO included a review after 5 years, so five years is consistent with our city’s practices. In addition, the world of climate adaptation will have changed by then. We will know a lot from our own BlocPower pilot, we will have two years of data from the ordinance for large owners. And know more about offsets, about developments with technical possibilities for emissions reductions. A review would be to understand the effectiveness of the ordinance and reassess the technological and environmental landscape at the time. Further, these amendments only cover a small segment of our building stock, so we will need to come back to the table with a proposal to reduce emissions in all our buildings, including multifamily units and condominiums - and combine that with technical and financial assistance, which I think is appropriate before the proposed first review not until 2032. We can also build in a review in 2032. I hope we will all vote for these four amendments since it will make the ordinance even stronger.

**The Chair, Councillor Zondervan recognized Iram Farooq and the team from CDD and DPW to give a review of the questions they received from Councillors, copy attached.**

Representatives from CDD and DPW responded to questions and concerns raised by Councillors.

**The Chair, Councillor Zondervan recognized Councillor Toner** who had follow up questions from the Q&A, one being on residential properties and if they were still following the 2050 timeline criteria. Seth Federspiel confirmed that the only distinction in residential properties in the CDD proposal is condominium residential buildings being excluded from the emission reduction requirements and all the remaining residential building with fifty or more units would be subject to the 2050 trajectory. Councillor Toner’s second question was on carbon offsets being used to reach net zero in the forty municipal buildings. Nick Stouff shared that there are currently two parallel master plans in place which will look at phased improvements. Nick Stouff noted that logistically and with costs it would be hard to reach the goal of having municipal

buildings fall into the 2035 trajectory without using carbon offsets. Councillor Zondervan shared that he was deeply opposed to that (using carbon offsets for municipal buildings).

**The Chair, Councillor Zondervan recognized Councillor Carlone** who asked CDD if the City is not currently going to be including condominiums in the 2035 trajectory, when is the plan to start approaching condominiums. Iram Farooq responded by noting that based on the net zero action plan, CDD is looking at how to eliminate greenhouse gas emissions from all buildings, and by eliminating condominiums from the BEUDO emissions reductions, CDD plans on thinking about condominiums at the same time they are thinking about one, two, and three family type smaller buildings. Iram Farooq noted that CDD will be looking to create strategies that would help benefit those sites during the transition.

**The Chair, Councillor Zondervan recognized Councillor McGovern** who asked for clarity on if condominium buildings with 50 units will be on the 2050 schedule. Seth Federspiel noted that only rental multi-family buildings over 50 units would be covered by the BEUDO amendments, and condominium buildings would be exempt from the current proposal, as well as single family homes. Councillor McGovern asked if there was a difference in emissions between 50,000 square foot buildings versus 100,000 square foot buildings, to which Seth Federspiel noted that CDD had looked to see if there were any inflection points and found that there was not one clear point where over a certain square footage there was a big jump in emissions (for individual buildings) but that of course the larger the building, the greater the emissions, generally speaking, and that the majority of total building emissions were produced by the largest (commercial) buildings. City Manager Huang shared that when moving the timeline from 2050 to 2035, a lot of what the team has been focusing on is the larger buildings because they have more resources and ability to meet the aggressive timeline. Councillor McGovern stressed the importance of conducting reviews every few years so everyone stays up to date as BEUDO continues to move forward.

**The Chair, Councillor Zondervan recognized Vice Mayor Mallon** who offered comments on commercial condominium buildings and their owners and emphasized the importance of unintentionally providing consequences for smaller commercial condominium buildings and putting them together in the same category. Vice Mayor Mallon suggested if there was a way to think about commercial condominium buildings who have three or more owners versus just one owner and putting them in a different category when looking at the 2035 and 2050 trajectory. Vice Mayor Mallon asked for clarity on commercial buildings having access to the City's Community Aggregation Program and what the plan is for the next contract and when that would begin. Susanne Rasmussen shared that CDD is looking to develop a new approach that would allow large commercial owners to enroll in the Aggregation Program. Susanne Rasmussen noted that there is an upcoming Aggregation renewal which will start in January. Iram Farooq noted that the Aggregation Program was originally developed for small property owners and CDD understands that this is something that many people will be relying on and are planning to build the system so in the future they are able to provide a better service for everyone to access.

**The Chair, Councillor Zondervan recognized the City Manager and Iram Farooq who reviewed the proposed amendments with Committee members and were available for discussion regarding any concerns or comments.** The City Manager noted that the more clarity the City Staff have the closer they will be able to get to the Committee's vision when the final amendments are brought forward.

**The Chair, Councillor Zondervan recognized Seth Federspiel who gave a review of CDD's Carbon Offset Memo, copy attached.** Seth Federspiel shared that the memo outlines the

rational for including carbon offsets for the accelerated timeline for large buildings and the need for certain mechanisms that come with the accelerated timeline. City Manager Huang offered comments on carbon offsets and shared it would be helpful for Committee members to be clear from their legislative standpoint about the distance in carbon offsets and decarbonization efforts they will be looking for. Councillor Zondervan noted that the closer to Cambridge the offset was being implemented, the better it would be both from a verifiability aspect, and in terms of local economic impact.

The Chair, Councillor Zondervan recognized Mayor Siddiqui who shared the chart that was presented by themselves, Councillor Zondervan and Councillor Nolan was to bring opportunity to have CDD and other City Staff work from their ideas and language to help guide CDD with the correct language that should be proposed at a future date to the City Council. Mayor Siddiqui noted that there will be challenges, but it is important to figure out a way to be creative with partners moving forward.

**The Chair, Councillor Zondervan, made a motion to extend the meeting by thirty minutes. City Clerk LeBlanc called the roll.**

Councillor Azeem – Yes

Councillor Carlone – Yes

Vice Mayor Mallon -Yes

Councillor McGovern – Yes

Councillor Nolan – Yes

Councillor Simmons – Absent

Councillor Toner – Yes

Councillor Zondervan – Yes

Mayor Siddiqui – Yes

**Yes – 8, No – 0, Absent – 1. Motion passed.**

**The Chair, Councillor Zondervan opened discussion to the proposed amendments that were brought forward in the chart.** Committee members shared that it has been a challenging conversation, and offered comments and concerns on the amendments, with many of them noting that what Cambridge is trying to accomplish by 2035 will be groundbreaking.

**The Chair, Councillor Zondervan recognized Councillor Azeem who shared that he had an amendment to the amendments that were brought forward by Councillor Nolan, Councillor Zondervan, and Mayor Siddiqui, copy attached.**

**The Chair, Councillor Zondervan made a motion to adopt amendment #1 on the table of proposed amendments regarding changing the threshold for commercial buildings.**

**City Clerk LeBlanc called the roll.**

Councillor Azeem – No

Councillor Carlone – Yes

Vice Mayor Mallon – No

Councillor McGovern – No

Councilor Nolan – Yes

Councillor Simmons – Absent

Councillor Toner – No

Councillor Zondervan – Yes

Mayor Siddiqui – Yes

**Yes – 4, No – 4, Absent – 1. Motion failed.**

**The Chair, Councillor Zondervan recognized Councillor Azeem who made a motion to amend the proposed language for amendment #2 on the chart, copy attached.**

**City Clerk LeBlanc called the roll.**

Councillor Azeem – Yes

Councillor Carlone – Yes

Vice Mayor Mallon – Yes

Councillor McGovern – Yes

Councillor Nolan – Yes

Councillor Simmons – Absent

Councillor Toner – Yes

Councillor Zondervan – Yes

Mayor Siddiqui – Yes

**Yes – 8, No – 0, Absent – 1. Motion passed.**

**The Chair, Councillor Zondervan made a motion to adopt amendment #2 on the chart as amended.**

**City Clerk LeBlanc called the roll.**

Councillor Azeem – Yes

Councillor Carlone – Yes

Vice Mayor Mallon – Yes

Councillor McGovern – Yes

Councillor Nolan – Yes

Councillor Simmons – Absent

Councillor Toner – Yes

Councillor Zondervan – Yes

Mayor Siddiqui – Yes

**Yes – 8, No – 0, Absent – 1. Motion passed.**

**The Chair, Councillor Zondervan made a motion to adopt amendments #3A, #3B, and #4 on the chart.**

**City Clerk LeBlanc called the roll.**

Councillor Azeem – Yes

Councillor Carlone – Yes

Vice Mayor Mallon – Yes

Councillor McGovern – Yes

Councillor Nolan – Yes

Councillor Simmons – Absent

Councillor Toner – Yes

Councillor Zondervan – Yes

Mayor Siddiqui – Yes

**Yes – 8, No – 0, Absent – 1. Motion passed.**

**The Chair, Councillor Zondervan recognized Vice Mayor Mallon who made a motion to amend the CDD recommendation with language for amendment #1 regarding threshold, copy attached.**

**City Clerk LeBlanc called the roll.**

Councillor Azeem – Yes

Councillor Carlone – Present

Vice Mayor Mallon – Yes

Councillor McGovern – Yes

Councillor Nolan – Present

Councillor Simmons – Absent

Councillor Toner – Yes

Councillor Zondervan – Yes

Mayor Siddiqui – Yes

**Yes – 6, No – 0, Present – 2, Absent – 1. Motion passed.**

**The Chair, Councillor Zondervan made a motion That the City Manager is requested to work with CDD, Law Department, the Assessor's Office, and any other relevant departments to produce final draft ordinance language for the BEUDO amendments based on the CDD proposal as amended by the Ordinance Committee at its April 26, 2023 hearing; and that the City Manager report back on this matter, including presenting final draft language to the City Council no later than May 31, 2023.**

**City Clerk LeBlanc called the roll.**

Councillor Azeem – Yes

Councillor Carlone – Yes

Vice Mayor Mallon – Yes

Councillor McGovern – Yes

Councillor Nolan – Yes

Councillor Simmons – Absent

Councillor Toner – Yes

Councillor Zondervan – Yes

Mayor Siddiqui – Yes

**Yes – 8, No – 0, Absent – 1. Motion passed.**

**ORDERED: That the City Manager is requested to work with CDD, Law Department, The Assessors Office, and any other relevant departments to produce final draft ordinance language for the BEUDO amendments based on the CDD proposal as amended by the Ordinance Committee at its April 26, 2023 hearing; and**

**ORDERED: That the City Manager report back on this matter, including presenting final draft language to the City Council no later than May 31, 2023.**

**The Chair, Councillor Zondervan made a motion to adjourn the meeting.**

**City Clerk LeBlanc called the roll.**

Councillor Azeem – Yes

Councillor Carlone – Yes

Vice Mayor Mallon – Yes

Councillor McGovern – Yes

Councillor Nolan – Yes

Councillor Simmons – Absent

Councillor Toner – Yes

Councillor Zondervan – Yes

Mayor Siddiqui – Yes

**Yes – 8, No – 0, Absent – 1. Motion passed.**

**Attachments:**

Presentation titled “Regulating Building Emissions via BEUDO: A Critical Step Towards Net Zero Cambridge.”

Proposed Amendments from Mayor Siddiqui, Councillor Zondervan, and Councillor Nolan.

Presentation titled “Comment on Community Development Department (CDD) Amendment.”

Presentation titled “Emissions Analysis.”

Q&A from CDD following April 12, 2023 Ordinance Committee Hearing

Memorandum from CDD on Carbon Offsets

Amendment to proposed Amendment #2, Councillor Azeem, Adopted

Amendment to proposed Amendment #1, Vice Mayor Mallon, Adopted

Amendments/Chart, Adopted as Amended

The City Clerk’s Office received one hundred and twelve written communications for the meeting on April 12, 2023 and an additional sixty two communications for the continuation on April 26, 2023.

**Clerk’s Note:** The City of Cambridge/22 City View records every City Council meeting and every City Council Committee meeting. This is a permanent record.

The meeting held and recessed on April 12, 2023 can be viewed at:

[https://cambridgema.granicus.com/player/clip/482?view\\_id=1&redirect=true&h=cdb092347a4b11ac7f47d1cbd146345f](https://cambridgema.granicus.com/player/clip/482?view_id=1&redirect=true&h=cdb092347a4b11ac7f47d1cbd146345f)

The meeting continuation held on April 26, 2023 can be viewed at:

[https://cambridgema.granicus.com/player/clip/490?view\\_id=1&redirect=true&h=30fc90777cafb81cee5c5275d01f3c50](https://cambridgema.granicus.com/player/clip/490?view_id=1&redirect=true&h=30fc90777cafb81cee5c5275d01f3c50)

**Ordinance #2021-26** A communication transmitted from Louis A. DePasquale, City Manager, relative to Awaiting Report Item Number 21-84 regarding BEUDO (Building Energy Use Disclosure Ordinance) proposed amendments.

A communication was received from Assistant City Manager for Community Development, Iram Farooq transmitting 1. Responses to questions that we received from councillors after the last hearing, 2. A brief write-up explaining the role of offsets in BEUDO and getting to net-zero greenhouse gas emissions by 2035 and 3. A write-up outlining three options for use of offsets.

A communication was received from Mayor Sumbul Siddiqui, transmitting Amendments for BEUDO Ordinance Committee.

A communication was received from Councillor Zondervan, transmitting Comment on CDD amendments and Council presentation.



	Residential	Commercial		Residential	Commercial
Threshold	50+ unit rental properties	25,000 - 100,000sf	over 100,000sf	>50 units	>25,000sf
Reduction Trajectory (% below baseline)	2026: <u>0%</u> 2030: <u>20%</u> 2035: <u>40%</u> 2040: <u>60%</u> 2045: <u>80%</u> 2050: 100%	2026: <u>0%</u> 2030: 40% 2035: 60% 2040: 80% 2045: 90% 2050: 100%	2026: 20% 2030: <u>60%</u> 2035: <u>100%</u>	2025: 20% 2030: 40% 2035: 60% 2040: 80% 2045: 90% 2050: 100%	
Offsets	Not offered		<u>Allowed for use against on-site fossil fuel emissions to achieve emission reductions from the baseline up to the following amounts:</u> <u>2026: 0%</u> <u>2030: 20%</u> <u>2035: 40%</u> <u>2040: 20%</u> <u>2045: 10%</u> <u>2050: 0%</u> <u>•Establish quality criteria through regs</u>	Not offered	
Baseline	<ul style="list-style-type: none"> <li>• 2018-2019 ave, with option to choose earlier to 2010, assuming 1%/year additional savings</li> <li>• <u>buildings built after 2019: baseline is average emissions of first two full years follow C.O.</u></li> <li>- &gt;100,000sf: 20% reduction after 4 years/2026, then linear reduction every 3 years to 0 in 2035</li> <li>- &lt;100,000sf: GHG reductions of 20% in 2030, 40% in 2035, 60% in 2040, 80% in 2045, 100% in 2050</li> </ul>			<ul style="list-style-type: none"> <li>• 2018-2019 ave, with option to choose earlier to 2010, assuming 1%/year additional savings</li> <li>• separate trajectory for buildings built after 2019</li> </ul>	
Campus Pathway	<ul style="list-style-type: none"> <li>• Applies to Affordable Housing or a minimum of 5 properties owned by the same organization</li> <li>• Allows compliance in aggregate across the "campus," <u>taking account the emissions trajectory required of each covered property</u></li> </ul>			<ul style="list-style-type: none"> <li>• Applies to Affordable Housing or a minimum of 5 properties owned by the same organization</li> <li>• Allows compliance in aggregate across the "campus"</li> </ul>	
Alternative Compliance Credits	ACCs are available at \$234/ton <ul style="list-style-type: none"> <li>• <u>Can be deferred for up to 5 years with Department-approved plan as long as cumulative emission reductions are equivalent</u></li> <li>• <u>No deferrals or trading</u></li> </ul>			ACCs are available at \$234/ton <ul style="list-style-type: none"> <li>• No deferrals or trading</li> </ul>	
Exemptions	<ul style="list-style-type: none"> <li>• <u>Create a Review Board including 5 technical experts, 2 business representatives, and 2 advocates to approve case-by-case hardship compliance plans, which would account for:</u></li> <li>- <u>Financial distress</u></li> <li>- <u>Grid capacity</u></li> <li>- <u>Properties with unique challenges, such as: historical, religious, healthcare, affordable housing</u></li> <li>• <u>Backup generation exempt through 2030, then re-considered as part of Policy Review</u></li> </ul>			<ul style="list-style-type: none"> <li>• Financial distress</li> <li>• Net zero buildings</li> </ul>	
Policy Review	Policy Review <u>completed by May 1, 2032, following receipt of 2030 reports by May 1, 2031, to consider compliance with ordinance requirements, economics, technology, and policy context of emission reductions targets for 2035 and beyond</u>			Policy Review after first compliance period	
Off-site Renewable Electricity	<ul style="list-style-type: none"> <li>• Must come from new, purchaser-caused projects</li> <li>• Must retain RECs</li> <li>• Aggregation will count, but timing/volume TBD</li> </ul>			<ul style="list-style-type: none"> <li>• Must come from new, purchaser-caused projects</li> <li>• Must retain RECs</li> <li>• Aggregation will count, but timing/volume TBD</li> </ul>	
Grid-supplied Renewable Electricity	<ul style="list-style-type: none"> <li>• Grid emissions factor will be automatically applied to electricity consumption</li> <li>• Additional regulatory process needed to establish emission factors, including for district energy</li> </ul>			<ul style="list-style-type: none"> <li>• Grid emissions factor will be automatically applied to electricity consumption</li> <li>• Additional regulatory process needed to establish emission factors, including for district energy</li> </ul>	



# City of Cambridge

## Executive Department

**YI-AN HUANG**  
City Manager

April 26, 2023

To the Honorable, the City Council:

Please find attached a letter received from Assistant City Manager for Community Development Iram Farooq, along with proposed amendments (clean and redlined versions) to the Building Energy Use Disclosure Ordinance (BEUDO).

Also attached is a response to Awaiting Report Item Number 21-84, (Policy Order adopted from Committee Report Item #2 of 11/1/21), received from City Solicitor Nancy E. Glowa.

Very truly yours,

Yi-An Huang  
City Manager

Attachment(s)





# CITY OF CAMBRIDGE

Community Development Department

**IRAM FAROOQ**

Assistant City Manager for  
Community Development

**SANDRA CLARKE**

Deputy Director  
Chief of Administration

**KHALIL MOGASSABI**

Deputy Director  
Chief Planner

## MEMORANDUM

TO: Louis A. DePasquale, City Manager

FROM: Iram Farooq, Assistant City Manager for Community Development

Date: November 4, 2021

RE: Building Energy Use Disclosure Ordinance – Proposed Amendments

Please find attached proposed amendments to the Building Energy Use Disclosure Ordinance. The Building Energy Use Disclosure Ordinance (BEUDO) was adopted in 2014 and requires energy and water reporting from commercial properties over 25,000 square feet and residential properties over 50 units. This regulates approximately 1,100 buildings in Cambridge which are responsible for approximately 75% of the building sector greenhouse gas (GHG) emissions.

The ordinance has successfully increased transparency and awareness of energy and water consumption by the regulated buildings. BEUDO includes a provision requiring that the Community Development Department review the impact of the ordinance on energy performance of covered properties, and recommend amendments to improve building energy performance if it has not improved significantly. Analysis performed in 2018 concluded that energy performance of covered properties had not improved significantly and therefore CDD initiated a performance requirement policy development process with participation of over 35 unique entities, representing private commercial and residential building owners, universities, affordable housing providers, and green building professionals. The attached proposal is the result of this collaborative process.

These proposed BEUDO amendments are intended to introduce GHG performance requirements for BEUDO properties and achieve science-based GHG reductions consistent with other leading cities including Boston, New York, and Washington D.C. The performance requirements:

- Eliminate GHG emissions from regulated properties by 2050, with the following intermediate targets compared to an individual 2018-2019 baseline for most buildings:
  - 20% by 2025
  - 40% by 2030

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Cambridge, MA 02139  
Voice: 617 349-4600  
Fax: 617 349-4669  
TTY: 617 349-4621  
www.cambridgema.gov

- 60% by 2035
  - 80% by 2040
  - 90% by 2045
- Provide multiple compliance pathways including energy efficiency improvements, electrification, on-site renewable energy, off-site renewable energy, electricity grid improvements, and alternative compliance payments.
- Provide flexibility including an optional early baseline to account for early action, alternative compliance timeframes for laboratories and affordable housing, and portfolio level compliance for campus owners and affordable housing.
- Leverage technical support and access to state and federal financial incentives through the existing Building Energy Retrofit Program.

The attached proposal for amendments to BEUDO represents an essential step in Cambridge's commitment to achieve carbon neutrality. The Net Zero Action Plan adopted in 2015 and updated in 2021 identifies BEUDO performance requirements as an integral part of a comprehensive suite of actions which together will phase out GHG emissions from new buildings, many existing buildings, and much of the energy supply system in Cambridge. This Plan has been created and updated by a Net Zero Task Force representing stakeholders throughout the community and is being overseen by the Climate Protection Advisory Committee. Both stakeholder groups have urged the prompt advancement of strong BEUDO performance requirements.

We are pleased to present these amendments to move forward the discussion of emission reductions from the largest buildings in Cambridge based on a comprehensive and collaborative stakeholder engagement process.

ORDINANCE NUMBER 1360

Final Publication Number ~~3341-XXXX~~. First Publication in the Chronicle on ~~July 10, 2014XXXX~~.

City of Cambridge

In the Year Two Thousand and ~~Fourteen~~

Twenty-One AN ORDINANCE

In amendment to the Ordinance entitled "Building Energy Use," Chapter 8.67 of the Municipal Code of the City of Cambridge

Be it ordained by the City Council of the City of Cambridge that the Municipal Ordinances of the City of Cambridge in be amended as follows:

~~City of Cambridge in be amended as follows:~~

Building Energy Use Disclosure and Emission Reductions

8.67.10 ~~Section A-~~ DEFINITIONS-

- (1) ~~(1)~~—"Affordable Housing" shall mean Residential Covered Property in which all units are made permanently affordable to households earning up to 100% of area median income.
- (2) "Alternative Compliance Credit" shall mean a credit obtained by a Covered Property Owner to offset greenhouse gas emissions from the Covered Property. One Alternative Compliance Credit shall be equivalent to one metric ton of Greenhouse Gas Emissions. In the first Compliance Period, each Alternative Compliance Credit shall cost \$234. The Department shall promulgate regulations pursuant to 8.67.130 prior to each Compliance Period to establish the price of the Alternative Compliance Credit for that Compliance Period, based on review of the average cost of reducing one metric ton of greenhouse gas emissions in Covered Properties. Monies from Alternative Compliance Credits shall be used by the City for City programs and projects to support greenhouse gas reduction, including but not limited to, greenhouse gas reduction projects in Affordable Housing properties, if approved by the Cambridge Affordable Housing Trust.
- (3) "Approved Verification Body" shall mean a firm accredited by the American National Standards Institute to conduct greenhouse gas inventory verification services.

(4) “Baseline” shall mean the average of Greenhouse Gas Emissions of Covered Properties for two consecutive calendar years comprising the default baseline, alternative baseline, or new construction baseline as set forth in section 8.67.100 for purposes of calculating emissions reductions in order to meet the requirements of this ordinance set forth in section 8.67.100.

~~(4)~~(5) “Benchmarking ~~information~~ Information” shall mean information generated by the Benchmarking Tool, as ——— herein defined including descriptive information about the physical property and its ——— operational characteristics. The information shall include, but need not be limited to:-

- (a) ~~(a)~~ ——— Property address;-
- (b) ~~(b)~~ ——— Primary use type;
- (c) ~~(c)~~ ——— Gross floor area-
- (d) ~~(d)~~ ——— Site Energy Use Intensity (EUI) as defined in this section;
- (e) ~~(e)~~ ——— Weather normalized ~~source~~Source EUI;-
- (f) ~~(f)~~ ——— Annual greenhouse gas emissions;-
- (g) ~~(g)~~ ——— Water use;-
- (h) ~~(h)~~ ——— The energy performance score that compares the energy use of the building to that of ——— similar buildings, where available; and
- (i) ~~(i)~~ ——— Compliance or noncompliance with this Ordinance.

~~(2)~~(6) ~~(2)~~ ——— “Benchmarking Tool” shall mean the ENERGY STAR Portfolio Manager~~Internet-based~~ tool developed and maintained by the ——— U.S. Environmental Protection Agency to track and assess the relative energy performance of ——— buildings nationwide-, or other tools identified by the Department to collect and track Benchmarking Information necessary for compliance with this ordinance

~~(3)~~ ———  
(7) “Campus” shall mean a minimum of 5 (five) Covered Properties owned by the same organization that are owner-occupied properties or Affordable Housing.

~~(3)~~(8) “Covered Property” shall mean a parcel, as described in public records or as determined by the ——— Department, containing any of the following:

- (a) ~~(a)~~ ——— One or more non-residential building(s) where such building(s) singly or together ——— contain 25,000 to 49,999.99 square feet (“Small Non-Residential Covered ——— Property”);
- (b) ~~(b)~~ ——— One or more non-residential building(s), where such building(s) singly or together ——— contain 50,000 or more square feet (“Large Non-Residential Covered Property”); ——— and——
- (c) ~~(c)~~ ——— One or more residential building(s) that singly or together contain 50 or more ——— residential Dwelling Units whether they are rental Dwelling Units or Dwelling Units ——— owned as condominiums, cooperatives or otherwise (“Residential Covered ——— Property”).



~~(4)(9)~~ (4) —“Department” ~~means~~shall mean the City of Cambridge Community Development Department.

~~(5)(10)~~ (5) —“Dwelling Unit” shall mean a single residential unit consisting of one or more habitable rooms, ~~occupied or arranged to be occupied as a residential unit separate from all other residential~~ ~~units within a building, and used primarily for residential purposes and not primarily for~~ ~~professional or commercial purposes.-~~

~~(6)~~ —“

(11) “Emission Factors” shall mean the multipliers used to determine the annual Greenhouse Gas Emissions produced by the production or consumption of Energy. The Department shall promulgate regulations pursuant to 8.67.130 no later than two years prior to each Compliance Period to establish the annual Emission Factors for that Compliance Period, and no later than two years prior to the first Compliance Period to establish the annual Emission Factors for 2010-2024.

(a) For the combustion of fuels, such as oil and gas, the Emission Factors will be based on standard scientific values published by federal agencies.

(b) For the use of all electricity other than Renewable Electricity, the annual Emission Factor will be based on the Commonwealth of Massachusetts’s calculations and projections of emissions from electricity consumed in Massachusetts.

(c) For the generation or consumption of steam, hot water, and chilled water, the Emission Factors will be calculated based on the Emission Factor published by the Commonwealth of Massachusetts for that product, unless the Commonwealth has not published such a multiplier, in which case the Emission Factor will be calculated using the methodology of the Greenhouse Gas Protocol developed by the World Resources Institute and World Business Council for Sustainable Development.

~~(6)(12)~~ “Energy” shall mean purchased electricity, natural gas, steam, hot or chilled water, heating oil, or other ~~product~~ or electricity generated on site, for use in a building, ~~or renewable on-site electricity generation,~~ for purposes of ~~providing heating, cooling, lighting, water heating, or for powering or fueling other end-uses in~~ ~~the building and related facilities.-~~

~~(7)~~ —

(13) “Energy Audit” shall mean an energy assessment of a covered property that meets the standards of the ASHRAE Level 2 Audit as specified by the Procedures for Commercial Building Energy Audits published by the American Society of Heating, Refrigeration, and Air-Conditioning Engineers.

~~(7)(14)~~ “Energy Performance Score” shall mean the numeric rating generated by the ENERGY STAR -Portfolio Manager tool or equivalent tool adopted by the department that compares the -energy usage of the building to that of similar buildings.-

~~(8)~~ —

~~(8)(15)~~ “ENERGY STAR” shall mean the U.S. Environmental Protection Agency program related to ~~improving energy efficiency in buildings and products.~~

~~(9)~~ —

~~(9)(16)~~ “ENERGY STAR Portfolio Manager” shall mean the tool developed and maintained by the U.S. Environmental Protection Agency to track and assess the relative energy performance of buildings nationwide.-

~~(10) —~~

~~(10)(17)~~ “Energy Use Intensity (EUI)” shall mean ~~the building’s annual energy~~ consumption measured in kBTUs (1,000 British Thermal Units) used per ~~—~~square foot of gross floor area.

~~(11) —~~

~~(18)~~ “Greenhouse Gas Emissions” (GHG) shall mean the carbon dioxide equivalent emissions produced from the operations of the Covered Property calculated by the Department according to the following calculation:

Greenhouse Gas Emissions are the sum of annual Energy use by fuel type multiplied by the Emission Factor for that type of Energy, minus Alternative Compliance Credits; provided that Renewable Electricity shall be subtracted from the electricity consumption, up to a limit of the total electricity consumption.

~~(19)~~ “Greenhouse Gas Emissions Reduction Plan” shall mean a detailed strategy based on an Energy Audit or similar assessment which lists plans to invest in measures such as energy efficiency improvements, fuel switching, and Renewable Electricity purchases which will lead to reductions in annual Greenhouse Gas Emissions. The Plan should detail what measures are planned, when they are scheduled to occur, and how much Greenhouse Gas Emissions are projected to be reduced by each measure.

~~(11)(20)~~ “Gross Square Feet” shall mean the gross floor area of the property as per the City of ~~—~~Cambridge Assessors’ records.

~~(12) —~~

~~(21)~~ “Laboratory” shall mean a Covered Property with 15% or more of occupied building square footage with an air exchange rate of 0.5 cubic feet per minute per square foot (CFM/ft<sup>2</sup>) or greater.

~~(12)(22)~~ “Municipal Property” shall mean a property with one or more buildings that is 10,000 gross ~~-~~square feet or more that is owned by the City of Cambridge.

~~(13)(23)(13)~~ “Owner” shall mean an owner of a Covered Property, including but not limited to:

- (a) ~~—(a)—~~ An individual or entity having title to a Covered Property;
- (b) ~~—(b)—~~ An agent authorized to act on behalf of the owner of a Covered Property;
- (c) ~~(c)—~~ The net lessee in the case of a ~~property~~Covered Property subject to a net lease with a term of at least ~~forty-nine~~ years, inclusive of all renewal options;
- (d) ~~—(d)—~~ The board of managers or trustees in the case of a condominium at the Covered Property; and/or
- (e) ~~—(e)—~~ The board of directors or trustees in the case of a cooperative apartment corporation at the Covered Property.

(24) ~~(14)~~ —“Net Zero Emission Building” shall mean a Covered Property that has an annual balance of zero greenhouse gas emissions from building operations as defined by standards qualified by the Department.

~~(14)~~(25) —“Qualified Benchmarker” is an entity that meets the Department’s qualifications for inputting —Benchmarking Information into the Benchmarking Tool.

(26) ~~(15)~~ —“Renewable Electricity” shall mean purchases from specific offsite renewable electricity programs approved by the Department, or the renewable energy attributes, measured in megawatt-hours, retired from renewable on-site electricity generation or from off-site zero greenhouse gas emission electricity sources qualified by the Department based on the following Cambridge Off-Site Renewable Electricity Standards:

- (a) The off-site renewable energy procurement shall support a renewable energy project that is new, meaning that the Covered Property Owner enters into a contract to purchase Renewable Electricity from a newly-built renewable energy generating source that is not operational at the time of contract execution. This includes contracts that lead to construction of a new project, as well as contracts that lead to expansion of existing projects with new renewable capacity.
- (b) Renewable Energy Certificates (RECs) and other environmental attributes associated with the procured off-site renewable energy shall be assigned to the building or aggregated portfolio of buildings in Cambridge for the duration of the contract and made available for inspection by the City of Cambridge upon request. The building owner shall maintain transparent accounting that clearly assigns renewable energy production in the form of RECs in megawatt-hours to the building or aggregated portfolio of buildings in Cambridge for the duration of the procured off-site renewable energy contract.
- (c) The renewable energy generating source shall be photovoltaic systems, solar thermal power plants, wind turbines, geothermal power plants, small hydropower, or other renewable energy generating sources that may be submitted to and certified by the Department.

~~(15)~~(27) —“Residential Property” shall mean a property containing one or more Dwelling Units.

~~(16)~~(28) ~~(16)~~ —“Site Energy” shall mean the amount of ~~heat and electricity~~ energy consumed by a Covered Property —or Municipal Property as reflected in utility bills or other documentation of actual energy use.

~~(17)~~(29) ~~(17)~~ —“Source Energy” shall mean ~~-all the energy used in delivering energy to a Covered Property, —including power generation and transmission and distribution losses, to perform a specific function, such as but not limited to space conditioning, lighting, or water heating.~~

~~(18)~~(30) ~~(18)~~ —“Tenant” shall mean a person or entity leasing, occupying or holding possession of all or a portion of a Covered ~~-Property or Municipal Property.-~~

~~(19)(31)~~ ~~(19)~~ “Utility” shall mean an entity that distributes and sells Energy for Covered Properties or ~~\_\_\_\_\_~~ Municipal Properties.-

#### ~~Section B-~~**8.67.020** Purpose

To encourage efficient use of energy and to reduce the emission of greenhouse gases, this Ordinance requires owners of Covered Properties and Municipal Properties to annually measure and disclose energy usage to the Department- and to achieve Greenhouse Gas Emissions reduction targets consistent with the commitments of the 2015 Cambridge Net Zero Action Plan as it may be amended from time to time. Furthermore, this Ordinance will authorize the Department to collect energy usage data to enable more effective energy and climate protection planning by the City and others and to provide information to the real estate marketplace to enable its members to make decisions that foster better energy performance.

#### ~~Section C-~~**8.67.030** APPLICABILITY-

- (1) ~~(1)~~ This Ordinance is applicable to the following:
  - (a) ~~(a)~~ All Municipal Properties as defined in Section A-8.67.010(12) of this Ordinance; and
  - (b) All Covered Properties as defined in Section A-8.67.010(3) of this Ordinance.

#### ~~Section D-~~**8.67.040** BENCHMARKING REQUIRED FOR MUNICIPAL PROPERTIES-

No later than December 31, 2014, and no later than May 1 every year thereafter, the total Energy consumed by each Municipal Property, along with all other descriptive information required by the Benchmarking Tool, shall be entered into the Benchmarking Tool for the previous calendar year. Renewable Electricity purchases shall be annually reported to the Department on the same schedule.

#### ~~Section E-~~**8.67.050** BENCHMARKING REQUIRED FOR COVERED PROPERTIES

- (1) ~~(1)~~ Owners shall annually input the total Energy consumed by each Covered Property, along with ~~\_\_\_\_\_~~ all other descriptive information required by the Benchmarking Tool, into the Benchmarking ~~\_\_\_\_\_~~ Tool for the previous calendar year. Renewable Electricity purchases shall be annually reported to the Department. The Owner shall input this information according to the ~~\_\_\_\_\_~~ following schedule:-
  - (a) ~~(a)~~ A Large Non-residential Covered Property by May 1, 2015 and by every May 1 ~~\_\_\_\_\_~~ thereafter;
  - (b) ~~(b)~~ A Residential Covered Property by May 1, 2015 and by every May 1 thereafter;
  - (c) ~~(c)~~ A Small Non-residential Covered Property by May 1, 2016 and by every May 1 ~~\_\_\_\_\_~~ thereafter; and
  - (d) ~~(d)~~ A new Covered Property ~~that has not accumulated 12 months of energy use-~~

data by ~~\_\_\_\_\_ May 1 of the first applicable date year~~ following ~~occupancy for inputting the first full calendar year following the issuance of the Certificate of Occupancy.~~

- (2) ~~Provided that the necessary mechanisms exist, Owners may authorize an Energy use into the \_\_\_\_\_ Benchmarking Tool shall or water utility or other third party to report Covered Property-specific data on their behalf to the Department. Such authorization shall not create an obligation on the part of Energy or water utilities or remove the obligation of Owners to comply with this Ordinance in the following year reporting requirements.~~

#### **Section F-8.67.060 NOTIFICATION OF COVERED PROPERTIES**

- (1) ~~Between September 1 and~~ By December ~~131~~ of each year, the City shall notify Owners of Covered Properties of their obligation to input Energy use into the Benchmarking Tool. By ~~January-February~~ 15 of each year, the City shall post the list of the addresses of Covered Properties on a public website. Greenhouse Gas Emissions shall be calculated by the Department and reported annually to Owners along with the performance requirements of Section 8.67.100.

#### **Section G-**

#### **8.67.070 QUALIFICATIONS OF BENCHMARKERS**

The Department may establish certification and/or licensing requirements for the users of Benchmarking Tools. ~~—~~

#### **Section H-**

#### **8.67.080 DISCLOSURE AND PUBLICATION OF BENCHMARKING INFORMATION**

-

(1) ~~\_\_\_\_\_~~

- (1) Owners shall annually provide Benchmarking ~~information~~ Information to the Department, in such form as ~~established by the Department, by the date provided by the schedule in Section (E)-8.67.050(1).~~ ~~—~~

(2) ~~\_\_\_\_\_~~

- (2) The Department shall make available to the public on the internet Benchmarking Information ~~for the previous calendar year: -a) no later than December 31, 2014 and by September-1December 31~~ of ~~—~~each year thereafter for Municipal Properties; and b) no later than September 1, 2015 and by ~~—September-1December 31~~ of each year thereafter for Covered Properties. ~~-Benchmarking Information —received by the Department for the first year a Covered Property is required to input the total —Energy consumed, and other descriptive information as required by the Benchmarking Tool-~~ into the Benchmarking Tool pursuant to Section ~~(E)-8.67.050~~ will be not be published except to disclose ~~—whether or not the Covered Property is in compliance with this Ordinance.-~~

(3) ~~\_\_\_\_\_~~

- (3) The Department shall make available to the public and update at least annually, the following ~~-information:-~~

- (a) ~~(a)~~ Summary statistics on energy consumption and greenhouse gas emissions for Municipal Properties and Covered ~~Properties~~ Properties derived from aggregation of Benchmarking information for both;-
- (b) ~~(b)~~ Summary statistics on overall compliance with this Ordinance ~~including an assessment of accuracy;~~
- (c) ~~(c)~~ For each Municipal Property and Covered Property:-
  - (i) ~~(i)~~ The status of compliance with the requirements of this Ordinance;-
  - (ii) ~~(ii)~~ Annual summary statistics for the Municipal Property or Covered Property, ~~including~~ EUI, annual ~~greenhouse gas emissions~~ Greenhouse Gas Emissions, water use per square foot, ~~and~~ an energy performance score where available; and-
  - (iii) ~~(iii)~~ A comparison of Benchmarking Information and Greenhouse Gas Emissions across calendar years for any years ~~such~~ such Municipal Property or Covered Property has input the total Energy ~~consumed~~ and other descriptive information for such Properties as required by the Benchmarking Tool into the Benchmarking Tool.-

#### ~~Section I.~~ 8.67.090 PROVISION OF BENCHMARKING INFORMATION BY TENANTS TO THE OWNER-

- (1) ~~(1)~~ Each Tenant located in a Covered Property shall, within 30 days of a request by the Owner and ~~in~~ in a form to be determined by the Department, provide all information that cannot otherwise ~~be~~ be acquired by the Owner and that is needed to comply with the requirements of this Ordinance. ~~Failure to provide information to an Owner may result in penalties as provided under Section (M)-8.67.130.~~
- ~~(2)~~ (2) Where the Owner is unable to input the total ~~energy~~ Energy consumed by the Covered Property, ~~as well as all other descriptive information for such Covered Property as required by the Benchmarking Tool, into the Benchmarking Tool due to the failure of any or all Tenants to report the information required by Section (H) 8.67.090(1), the Owner shall input alternate values as established by the Department prior to the implementation of this Ordinance, into the Benchmarking Tool.-~~

#### ~~Section J. ASSESSING RESULTS~~

##### 8.67.100 EMISSION REDUCTION REQUIREMENTS

Default Baseline: The default Baseline years

- (1) ~~By December 31, 2018, the Department shall review the effect of this Ordinance on improving energy performance for Covered Buildings. If energy performance for Properties shall be calendar years 2018 and 2019.~~
- (2) Performance requirement: Each Covered Buildings has not improved significantly, the Department Property shall make recommendations comply on an annual basis with Greenhouse Gas Emissions requirements according to the City Manager as following schedule:
  - (a) Compliance Period 1: 2025 to whether amendments 2029; annual Greenhouse Gas Emissions will not exceed 80% of the default Baseline



- (b) Compliance Period 2: 2030 to this Ordinance or other measures 2034; annual Greenhouse Gas Emissions will not exceed 60% of the default Baseline
- (c) Compliance Period 3: 2035 to 2039; annual Greenhouse Gas Emissions will not exceed 40% of the default Baseline
- (d) Compliance Period 4: 2040 to 2044; annual Greenhouse Gas Emissions will not exceed 20% of the default Baseline
- (e) Compliance Period 5: 2045 to 2049; annual Greenhouse Gas Emissions will not exceed 10% of the default Baseline
- (f) Compliance Period 6: 2050 onwards; annual Greenhouse Gas Emissions are necessary to improve net zero.

(3) Alternative Baseline: An Owner may request an alternative Baseline for a Covered Property that is prior to the default Baseline years of 2018-2019. The alternative Baseline must be the average Greenhouse Gas Emissions of two consecutive years, from 2010-2011 through 2018-2019. The request for an alternative Baseline must be submitted to the Department prior to the first compliance period and, if approved, shall remain the Baseline for all future compliance periods.

- (a) Owners shall ensure that the Energy use for the alternative Baseline years has been inputted into the Benchmarking Tool and that Benchmarking Information and any Renewable Electricity for the alternative Baseline years has been provided to the Department.
- (b) A Covered Property with an alternative Baseline shall comply on an annual basis with adjusted performance requirements according to the table below; annual Greenhouse Gas Emissions will not exceed the indicated percentage of the alternative Baseline:

	Alternative Baseline Performance Requirements							
	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
<u>Compliance Period 1: 2025 to 2029</u>	<u>66.7%</u>	<u>68.1%</u>	<u>69.6%</u>	<u>71.1%</u>	<u>72.7%</u>	<u>74.4%</u>	<u>76.2%</u>	<u>78.0%</u>
<u>Compliance Period 2: 2030 to 2034</u>	<u>50.0%</u>	<u>51.1%</u>	<u>52.2%</u>	<u>53.3%</u>	<u>54.5%</u>	<u>55.8%</u>	<u>57.1%</u>	<u>58.5%</u>
<u>Compliance Period 3: 2035 to 2039</u>	<u>33.3%</u>	<u>34.0%</u>	<u>34.8%</u>	<u>35.6%</u>	<u>36.4%</u>	<u>37.2%</u>	<u>38.1%</u>	<u>39.0%</u>
<u>Compliance Period 4: 2040 to 2044</u>	<u>16.7%</u>	<u>17.0%</u>	<u>17.4%</u>	<u>17.8%</u>	<u>18.2%</u>	<u>18.6%</u>	<u>19.0%</u>	<u>19.5%</u>
<u>Compliance Period 5: 2045 to 2049</u>	<u>8.3%</u>	<u>8.5%</u>	<u>8.7%</u>	<u>8.9%</u>	<u>9.1%</u>	<u>9.3%</u>	<u>9.5%</u>	<u>9.8%</u>
<u>Compliance Period 6: 2050 onwards</u>	<u>0%</u>	<u>0%</u>	<u>0%</u>	<u>0%</u>	<u>0%</u>	<u>0%</u>	<u>0%</u>	<u>0%</u>

(4) Exemptions: A Covered Property will be exempted by the Department from the requirements of 8.67.100 if it qualifies as one of the following:

- (a) New construction: For Covered Properties that receive an initial Certificate of

Occupancy after the start of the default Baseline years, the Baseline shall be the average Greenhouse Gas Emissions of the first two full calendar years following the issuance of the Certificate of Occupancy. Such Covered Properties shall be exempt from the requirements of 8.67.100 for the five years following the conclusion of this Baseline period. The performance requirements for each subsequent five-year period shall be determined by a linear reduction to net zero emissions by 2050.

(b) A Net Zero Emissions Building;

(c) Vacancy: The Covered Property is fully vacant for the full year;

(d) The Covered Property is to be fully demolished within the forthcoming calendar year;

(e) Financial Distress: Owners of a financially distressed Covered Property may apply for an extension until the end of the current compliance period. Owners must provide a form of third-party verification to substantiate an exemption request due to financial distress. A building energy is considered in financial distress if it meets one of the following criteria:

(i) The Covered Property is qualified for sale at a public auction due to arrears of public taxes within two years of the start of the compliance period.

(ii) The Covered Property is controlled by a court-appointed receiver due to financial distress.

(iii) The Covered Property is owned by a financial institution through default by the borrower.

(iv) The Covered Property has been acquired by deed in lieu of foreclosure.

(v) The Covered Property has a senior mortgage which is subject to a notice of default.

(5) The following building type-specific compliance pathways shall be permitted:

(a) Campus:

(i) A Campus may choose to comply with the requirements of Section 8.67.100 at the level of each Covered Property or at the level of the aggregate Campus greenhouse gas emissions. Campus Owners must determine their Baseline according to the method by which they intend to comply with the requirements. Owners may request to adjust their Baseline to include in the aggregate Campus any new buildings that receive their Certificate of Occupancy after the start of the Baseline years.

(ii) If the Covered Property that is part of a Campus is included in an institutional comprehensive plan and a corresponding energy management plan, and these plans have reduced Greenhouse Gas Emissions from buildings at the institutional level by the required amount for that compliance period, then the Covered Property shall be considered to be in compliance. To show compliance with this pathway, the Owner must provide copies of the institutional comprehensive plan, institutional energy management plan, and the completed institution-wide greenhouse gas inventory for buildings for the compliance period.

(b) Laboratories and Affordable Housing:

(i) Laboratories and Affordable Housing shall have the option to comply with the following alternative compliance schedule:

1. Compliance Period 1: 2027 to 2033; annual Greenhouse Gas Emissions will not exceed 66.7% of the default Baseline
  2. Compliance Period 2: 2034 to 2040; annual Greenhouse Gas Emissions will not exceed 33.3% of the default Baseline
  3. Compliance Period 3: 2041 to 2049; annual Greenhouse Gas Emissions will not exceed 16.6% of the default Baseline
  4. Compliance Period 4: 2050 onwards; annual Greenhouse Gas Emissions are net zero.
- (ii) Laboratory and Affordable Housing owners choosing to follow the alternative compliance schedule shall submit documentation to the Department showing that the Covered Property qualifies as a Laboratory or Affordable Housing at the start of each 5-year compliance period.
- (iii) Laboratories and Affordable Housing choosing to follow the alternative compliance schedule shall submit a Greenhouse Gas Emissions Reduction Plan to the Department four years prior to the start of each alternative compliance period detailing how the greenhouse gas emissions reduction requirement for that compliance cycle will be met.
- ~~(i)~~(iv) For newly constructed Laboratories and Affordable Housing that choose to follow the alternative compliance schedule and receive an initial Certificate of Occupancy after the start of the default Baseline years, the Baseline shall be the average Greenhouse Gas Emissions of the first two full calendar years following the issuance of the Certificate of Occupancy. Such Laboratories and Affordable Housing shall be exempt from the requirements of 8.67.100 for the seven years following the conclusion of this Baseline period. The performance for Covered Buildings requirements for each subsequent seven-year period shall be determined by a linear reduction to net zero emissions by 2050.
- (v) ~~Section K.~~ For Laboratories and Affordable Housing that request an alternative Baseline pursuant to 8.67.100 (2), the adjusted performance requirements shall be as follows; annual Greenhouse Gas Emissions will not exceed the indicated percentage of the alternative Baseline:

	<u>Alternative Baseline Performance Requirements</u>							
	<u>2010-2011</u>	<u>2011-2012</u>	<u>2012-2013</u>	<u>2013-2014</u>	<u>2014-2015</u>	<u>2015-2016</u>	<u>2016-2017</u>	<u>2017-2018</u>
<u>Compliance Period 1: 2027 to 2033</u>	<u>55.6%</u>	<u>56.8%</u>	<u>58.0%</u>	<u>59.3%</u>	<u>60.6%</u>	<u>62.0%</u>	<u>63.5%</u>	<u>65.1%</u>
<u>Compliance Period 2: 2034 to 2040</u>	<u>27.8%</u>	<u>28.3%</u>	<u>29.0%</u>	<u>29.6%</u>	<u>30.3%</u>	<u>31.0%</u>	<u>31.7%</u>	<u>32.5%</u>
<u>Compliance Period 3: 2041 to 2049</u>	<u>13.9%</u>	<u>14.2%</u>	<u>14.5%</u>	<u>14.8%</u>	<u>15.2%</u>	<u>15.5%</u>	<u>15.9%</u>	<u>16.3%</u>
<u>Compliance Period 4: 2050 onwards</u>	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>

### **8.67.110 MAINTENANCE OF RECORDS AND DATA VERIFICATION**

- (1) ~~(1)~~ Owners shall maintain records as the Department determines is necessary for carrying out the \_\_\_\_\_ purposes of this Ordinance, including but not limited to energy and water bills and ~~other~~ \_\_\_\_\_ documents received from Tenants and/or Utilities. ~~Such records shall be preserved by Owners \_\_\_\_\_ for a period of three (3) seven (7) years.~~ At the request of the Department, such records shall be made \_\_\_\_\_ available for inspection and audit by the Department.
- (2) ~~(2)~~ Owners shall self-certify their reporting data every year.
- (3) For the two Baseline years, Owners shall provide a third-party verification of their reporting data, submitted by the benchmarking deadline for the first year of the first compliance period. Verifications must be performed by an Approved Verification Body.
- (4) For the first year of each compliance period, Owners shall provide a third-party verification of their reporting data, submitted by the benchmarking deadline for that year per 8.67.050(1). Verifications must be performed by an Approved Verification Body.
- (5) In the event that there is a discrepancy between third-party verified data and an Owner's self-certified reporting data, any resulting lack of compliance with the emissions reduction requirements in Section 8.67.100 shall be a violation.
- ~~(2)(6)~~ At the time any occupied Covered Building is transferred, the buyer and seller shall arrange for \_\_\_\_\_ the seller to provide to the buyer all information necessary for the buyer to report \_\_\_\_\_ Benchmarking ~~information~~ information for the entire year in a timely manner. ~~It shall be a violation of this Ordinance for any seller to fail to so provide any such information.~~

### **Section L-8.67.120 VIOLATIONS-**

It shall be unlawful for any entity or person to fail to comply with the requirements of this Ordinance or misrepresent any material fact in a document required to be prepared or disclosed by this Ordinance.-

### **Section M-8.67.130 ENFORCEMENT AND ADMINISTRATION**

- (1) The Assistant City Manager for Community Development ~~and/or~~ his or her designee shall be the \_\_\_\_\_ Chief Enforcement Officer of this Ordinance.
- (2) The Assistant City Manager for Community Development may promulgate regulations relative \_\_\_\_\_ to the administration of the requirements of this Ordinance as necessary.
- (3) By December 31, \_\_\_\_\_ 2026, in consultation with Covered Property Owners, the Department shall review compliance with Section 8.67.100 of this Ordinance and report to the City

Council.

- ~~(3)~~(4) If any person or entity ~~violates any provision of this Ordinance, the~~ fails to report the Benchmarking Information, such failure to report shall be deemed a violation and the following enforcement — measures may be taken:
- (a) For the first violation, a written warning may be issued; and
  - (b) For any subsequent violation, the Department may issue a fine of up to \$300.00 per —violation, per day, pursuant to the provisions of Chapter 1.24 herein. Each day of violation shall constitute a separate offence.
- (5) ~~Section N.~~In the event that third-party verification of Benchmarking Information reported by an Owner identifies a discrepancy with an Owner's self-certified reporting, such discrepancy shall be deemed a violation and the following enforcement measures may be taken:
- (a) For the first violation, a written warning may be issued; and
  - (b) For any subsequent violation, the Department may issue a fine of up to \$300.00 per violation, per day, pursuant to the provisions of Chapter 1.24 herein. Each day of violation shall constitute a separate offence.
- (6) If any person or entity fails to meet the emission reduction requirements, such failure shall be deemed a violation and the following enforcement measures may be taken:
- (a) For the first violation, a written warning may be issued; and
  - (b) For any subsequent violation, the Department may issue a fine of up to \$300.00 per violation, per day, pursuant to the provisions of Chapter 1.24 herein. Each day of violation shall constitute a separate offence.

**8.67.140 SEVERABILITY**

If any provision of this Ordinance shall be held to be invalid by a court of competent jurisdiction, then such provision shall be considered separately and apart from the remaining provisions, which shall remain in full force and effect.

~~Section O.~~**8.67.150 EFFECTIVE DATE**

The provisions of this Ordinance shall be effective immediately upon passage.

**ORDINANCE NUMBER 1360**

**Final Publication Number XXXX. First Publication in the Chronicle on XXXX.**

**City of Cambridge**

**In the Year Two Thousand and Twenty-**

**One AN ORDINANCE**

**In amendment to the Ordinance entitled “Building Energy Use,” Chapter 8.67 of the Municipal Code of the City of Cambridge**

**Be it ordained by the City Council of the City of Cambridge that the Municipal Ordinances of the City of Cambridge in be amended as follows:**

**Building Energy Use Disclosure and Emission Reductions**

**8.67.10 DEFINITIONS**

- (1) “Affordable Housing” shall mean Residential Covered Property in which all units are made permanently affordable to households earning up to 100% of area median income.
- (2) “Alternative Compliance Credit” shall mean a credit obtained by a Covered Property Owner to offset greenhouse gas emissions from the Covered Property. One Alternative Compliance Credit shall be equivalent to one metric ton of Greenhouse Gas Emissions. In the first Compliance Period, each Alternative Compliance Credit shall cost \$234. The Department shall promulgate regulations pursuant to 8.67.130 prior to each Compliance Period to establish the price of the Alternative Compliance Credit for that Compliance Period, based on review of the average cost of reducing one metric ton of greenhouse gas emissions in Covered Properties. Monies from Alternative Compliance Credits shall be used by the City for City programs and projects to support greenhouse gas reduction, including but not limited to, greenhouse gas reduction projects in Affordable Housing properties, if approved by the Cambridge Affordable Housing Trust.
- (3) “Approved Verification Body” shall mean a firm accredited by the American National Standards Institute to conduct greenhouse gas inventory verification services.
- (4) “Baseline” shall mean the average of Greenhouse Gas Emissions of Covered Properties for two consecutive calendar years comprising the default baseline, alternative baseline, or new construction baseline as set forth in section 8.67.100 for purposes of calculating emissions reductions in order to meet the requirements of this ordinance set forth in section 8.67.100.
- (5) “Benchmarking Information” shall mean information generated by the Benchmarking Tool,



as herein defined including descriptive information about the physical property and its operational characteristics. The information shall include, but need not be limited to:

- (a) Property address;
  - (b) Primary use type;
  - (c) Gross floor area
  - (d) Site Energy Use Intensity (EUI) as defined in this section;
  - (e) Weather normalized Source EUI;
  - (f) Annual greenhouse gas emissions;
  - (g) Water use;
  - (h) The energy performance score that compares the energy use of the building to that of similar buildings, where available; and
  - (i) Compliance or noncompliance with this Ordinance.
- (6) “Benchmarking Tool” shall mean the ENERGY STAR Portfolio Manager tool developed and maintained by the U.S. Environmental Protection Agency to track and assess the relative energy performance of buildings nationwide, or other tools identified by the Department to collect and track Benchmarking Information necessary for compliance with this ordinance
- (7) “Campus” shall mean a minimum of 5 (five) Covered Properties owned by the same organization that are owner-occupied properties or Affordable Housing.
- (8) “Covered Property” shall mean a parcel, as described in public records or as determined by the Department, containing any of the following:
- (a) One or more non-residential building(s) where such building(s) singly or together contain 25,000 to 49,999.99 square feet (“Small Non-Residential Covered Property”);
  - (b) One or more non-residential building(s), where such building(s) singly or together contain 50,000 or more square feet (“Large Non-Residential Covered Property”); and
  - (c) One or more residential building(s) that singly or together contain 50 or more residential Dwelling Units whether they are rental Dwelling Units or Dwelling Units owned as condominiums, cooperatives or otherwise (“Residential Covered Property”).
- (9) “Department” shall mean the City of Cambridge Community Development Department.
- (10) “Dwelling Unit” shall mean a single residential unit consisting of one or more habitable rooms, occupied or arranged to be occupied as a residential unit separate from all other residential units within a building, and used primarily for residential purposes and not primarily for professional or commercial purposes.
- (11) “Emission Factors” shall mean the multipliers used to determine the annual Greenhouse Gas Emissions produced by the production or consumption of Energy. The Department shall

promulgate regulations pursuant to 8.67.130 no later than two years prior to each Compliance Period to establish the annual Emission Factors for that Compliance Period, and no later than two years prior to the first Compliance Period to establish the annual Emission Factors for 2010-2024.

- (a) For the combustion of fuels, such as oil and gas, the Emission Factors will be based on standard scientific values published by federal agencies.
  - (b) For the use of all electricity other than Renewable Electricity, the annual Emission Factor will be based on the Commonwealth of Massachusetts's calculations and projections of emissions from electricity consumed in Massachusetts.
  - (c) For the generation or consumption of steam, hot water, and chilled water, the Emission Factors will be calculated based on the Emission Factor published by the Commonwealth of Massachusetts for that product, unless the Commonwealth has not published such a multiplier, in which case the Emission Factor will be calculated using the methodology of the Greenhouse Gas Protocol developed by the World Resources Institute and World Business Council for Sustainable Development.
- (12) "Energy" shall mean purchased electricity, natural gas, steam, hot or chilled water, heating oil, or other product or electricity generated on site, for use in a building for purposes of providing heating, cooling, lighting, water heating, or for powering or fueling other end-uses in the building and related facilities.
- (13) "Energy Audit" shall mean an energy assessment of a covered property that meets the standards of the ASHRAE Level 2 Audit as specified by the Procedures for Commercial Building Energy Audits published by the American Society of Heating, Refrigeration, and Air-Conditioning Engineers.
- (14) "Energy Performance Score" shall mean the numeric rating generated by the ENERGY STAR Portfolio Manager tool or equivalent tool adopted by the department that compares the energy usage of the building to that of similar buildings.
- (15) "ENERGY STAR" shall mean the U.S. Environmental Protection Agency program related to improving energy efficiency in buildings and products.
- (16) "ENERGY STAR Portfolio Manager" shall mean the tool developed and maintained by the U.S. Environmental Protection Agency to track and assess the relative energy performance of buildings nationwide.
- (17) "Energy Use Intensity (EUI)" shall mean a building's annual energy consumption measured in kBtUs (1,000 British Thermal Units) used per square foot of gross floor area.
- (18) "Greenhouse Gas Emissions" (GHG) shall mean the carbon dioxide equivalent emissions produced from the operations of the Covered Property calculated by the Department according to the following calculation:

Greenhouse Gas Emissions are the sum of annual Energy use by fuel type multiplied by the Emission Factor for that type of Energy, minus Alternative Compliance Credits; provided that Renewable Electricity shall be subtracted from the electricity consumption, up to a limit of the total electricity consumption.

- (19) “Greenhouse Gas Emissions Reduction Plan” shall mean a detailed strategy based on an Energy Audit or similar assessment which lists plans to invest in measures such as energy efficiency improvements, fuel switching, and Renewable Electricity purchases which will lead to reductions in annual Greenhouse Gas Emissions. The Plan should detail what measures are planned, when they are scheduled to occur, and how much Greenhouse Gas Emissions are projected to be reduced by each measure.
- (20) “Gross Square Feet” shall mean the gross floor area of the property as per the City of Cambridge Assessors’ records.
- (21) “Laboratory” shall mean a Covered Property with 15% or more of occupied building square footage with an air exchange rate of 0.5 cubic feet per minute per square foot (CFM/ft<sup>2</sup>) or greater.
- (22) “Municipal Property” shall mean a property with one or more buildings that is 10,000 gross square feet or more that is owned by the City of Cambridge.
- (23) “Owner” shall mean an owner of a Covered Property, including but not limited to:
  - (a) An individual or entity having title to a Covered Property;
  - (b) An agent authorized to act on behalf of the owner of a Covered Property;
  - (c) The net lessee in the case of a Covered Property subject to a net lease with a term of at least forty-nine years, inclusive of all renewal options;
  - (d) The board of managers or trustees in the case of a condominium at the Covered Property; and/or
  - (e) The board of directors or trustees in the case of a cooperative apartment corporation at the Covered Property.
- (24) “Net Zero Emission Building” shall mean a Covered Property that has an annual balance of zero greenhouse gas emissions from building operations as defined by standards qualified by the Department.
- (25) “Qualified Benchmarker” is an entity that meets the Department’s qualifications for inputting Benchmarking Information into the Benchmarking Tool.
- (26) “Renewable Electricity” shall mean purchases from specific offsite renewable electricity programs approved by the Department, or the renewable energy attributes, measured in megawatt-hours, retired from renewable on-site electricity generation or from off-site zero

greenhouse gas emission electricity sources qualified by the Department based on the following Cambridge Off-Site Renewable Electricity Standards:

- (a) The off-site renewable energy procurement shall support a renewable energy project that is new, meaning that the Covered Property Owner enters into a contract to purchase Renewable Electricity from a newly-built renewable energy generating source that is not operational at the time of contract execution. This includes contracts that lead to construction of a new project, as well as contracts that lead to expansion of existing projects with new renewable capacity.
- (b) Renewable Energy Certificates (RECs) and other environmental attributes associated with the procured off-site renewable energy shall be assigned to the building or aggregated portfolio of buildings in Cambridge for the duration of the contract and made available for inspection by the City of Cambridge upon request. The building owner shall maintain transparent accounting that clearly assigns renewable energy production in the form of RECs in megawatt-hours to the building or aggregated portfolio of buildings in Cambridge for the duration of the procured off-site renewable energy contract.
- (c) The renewable energy generating source shall be photovoltaic systems, solar thermal power plants, wind turbines, geothermal power plants, small hydropower, or other renewable energy generating sources that may be submitted to and certified by the Department.

- (27) “Residential Property” shall mean a property containing one or more Dwelling Units.
- (28) “Site Energy” shall mean the amount of energy consumed by a Covered Property or Municipal Property as reflected in utility bills or other documentation of actual energy use.
- (29) “Source Energy” shall mean all the energy used in delivering energy to a Covered Property, including power generation and transmission and distribution losses.
- (30) “Tenant” shall mean a person or entity leasing, occupying or holding possession of all or a portion of a Covered Property or Municipal Property.
- (31) “Utility” shall mean an entity that distributes and sells Energy for Covered Properties or Municipal Properties.

#### **8.67.020 Purpose**

To encourage efficient use of energy and to reduce the emission of greenhouse gases, this Ordinance requires owners of Covered Properties and Municipal Properties to annually measure and disclose energy usage to the Department and to achieve Greenhouse Gas Emissions reduction targets consistent with the commitments of the 2015 Cambridge Net Zero Action Plan as it may be amended from time to time. Furthermore, this Ordinance will authorize the Department to collect energy usage data to enable more effective energy and climate protection planning by the City and others and to provide information to the real estate marketplace to enable its members to make decisions

that foster better energy performance.

#### **8.67.030 APPLICABILITY**

- (1) This Ordinance is applicable to the following:
  - (a) All Municipal Properties as defined in Section 8.67.010(12) of this Ordinance; and
  - (b) All Covered Properties as defined in Section 8.67.010(3) of this Ordinance.

#### **8.67.040 BENCHMARKING REQUIRED FOR MUNICIPAL PROPERTIES**

No later than December 31, 2014, and no later than May 1 every year thereafter, the total Energy consumed by each Municipal Property, along with all other descriptive information required by the Benchmarking Tool, shall be entered into the Benchmarking Tool for the previous calendar year. Renewable Electricity purchases shall be annually reported to the Department on the same schedule.

#### **8.67.050 BENCHMARKING REQUIRED FOR COVERED PROPERTIES**

- (1) Owners shall annually input the total Energy consumed by each Covered Property, along with all other descriptive information required by the Benchmarking Tool, into the Benchmarking Tool for the previous calendar year. Renewable Electricity purchases shall be annually reported to the Department. The Owner shall input this information according to the following schedule:
  - (a) A Large Non-residential Covered Property by May 1, 2015 and by every May 1 thereafter;
  - (b) A Residential Covered Property by May 1, 2015 and by every May 1 thereafter;
  - (c) A Small Non-residential Covered Property by May 1, 2016 and by every May 1 thereafter; and
  - (d) A new Covered Property by May 1 of the year following the first full calendar year following the issuance of the Certificate of Occupancy.
- (2) Provided that the necessary mechanisms exist, Owners may authorize an Energy or water utility or other third party to report Covered Property-specific data on their behalf to the Department. Such authorization shall not create an obligation on the part of Energy or water utilities or remove the obligation of Owners to comply with reporting requirements.

#### **8.67.060 NOTIFICATION OF COVERED PROPERTIES**

- (1) By December 31 of each year, the City shall notify Owners of Covered Properties of their obligation to input Energy use into the Benchmarking Tool. By February 15 of each year, the City shall post the list of the addresses of Covered Properties on a public website. Greenhouse Gas Emissions shall be calculated by the Department and reported annually to Owners along with the performance requirements of Section 8.67.100.

### **8.67.070 QUALIFICATIONS OF BENCHMARKERS**

The Department may establish certification and/or licensing requirements for the users of Benchmarking Tools.

### **8.67.080 DISCLOSURE AND PUBLICATION OF BENCHMARKING INFORMATION**

- (1) Owners shall annually provide Benchmarking Information to the Department, in such form as established by the Department, by the date provided by the schedule in Section 8.67.050(1).
- (2) The Department shall make available to the public on the internet Benchmarking Information for the previous calendar year: a) no later than December 31, 2014 and by December 31 of each year thereafter for Municipal Properties; and b) no later than September 1, 2015 and by December 31 of each year thereafter for Covered Properties. Benchmarking Information received by the Department for the first year a Covered Property is required to input the total Energy consumed, and other descriptive information required by the Benchmarking Tool, into the Benchmarking Tool pursuant to Section 8.67.050 will be not be published except to disclose whether or not the Covered Property is in compliance with this Ordinance.
- (3) The Department shall make available to the public and update at least annually, the following information:
  - (a) Summary statistics on energy consumption and greenhouse gas emissions for Municipal Properties and Covered Properties derived from aggregation of Benchmarking information for both;
  - (b) Summary statistics on overall compliance with this Ordinance
  - (c) For each Municipal Property and Covered Property:
    - (i) The status of compliance with the requirements of this Ordinance;
    - (ii) Annual summary statistics for the Municipal Property or Covered Property, including EUI, annual Greenhouse Gas Emissions, water use per square foot, an energy performance score where available; and
    - (iii) A comparison of Benchmarking Information and Greenhouse Gas Emissions across calendar years for any years such Municipal Property or Covered Property has input the total Energy consumed and other descriptive information for such Properties as required by the Benchmarking Tool into the Benchmarking Tool.

### **8.67.090 PROVISION OF BENCHMARKING INFORMATION BY TENANTS TO THE OWNER**

- (1) Each Tenant located in a Covered Property shall, within 30 days of a request by the Owner and in a form to be determined by the Department, provide all information that cannot otherwise be acquired by the Owner and that is needed to comply with the requirements of this Ordinance. Failure to provide information to an Owner may result in penalties as



provided under Section 8.67.130.

- (2) Where the Owner is unable to input the total Energy consumed by the Covered Property, as well as all other descriptive information for such Covered Property as required by the Benchmarking Tool, into the Benchmarking Tool due to the failure of any or all Tenants to report the information required by Section 8.67.090(1), the Owner shall input alternate values as established by the Department prior to the implementation of this Ordinance, into the Benchmarking Tool.

### 8.67.100 EMISSION REDUCTION REQUIREMENTS

- (1) Default Baseline: The default Baseline years for Covered Properties shall be calendar years 2018 and 2019.
- (2) Performance requirement: Each Covered Property shall comply on an annual basis with Greenhouse Gas Emissions requirements according to the following schedule:
- Compliance Period 1: 2025 to 2029; annual Greenhouse Gas Emissions will not exceed 80% of the default Baseline
  - Compliance Period 2: 2030 to 2034; annual Greenhouse Gas Emissions will not exceed 60% of the default Baseline
  - Compliance Period 3: 2035 to 2039; annual Greenhouse Gas Emissions will not exceed 40% of the default Baseline
  - Compliance Period 4: 2040 to 2044; annual Greenhouse Gas Emissions will not exceed 20% of the default Baseline
  - Compliance Period 5: 2045 to 2049; annual Greenhouse Gas Emissions will not exceed 10% of the default Baseline
  - Compliance Period 6: 2050 onwards; annual Greenhouse Gas Emissions are net zero.
- (3) Alternative Baseline: An Owner may request an alternative Baseline for a Covered Property that is prior to the default Baseline years of 2018-2019. The alternative Baseline must be the average Greenhouse Gas Emissions of two consecutive years, from 2010-2011 through 2018-2019. The request for an alternative Baseline must be submitted to the Department prior to the first compliance period and, if approved, shall remain the Baseline for all future compliance periods.
- Owners shall ensure that the Energy use for the alternative Baseline years has been inputted into the Benchmarking Tool and that Benchmarking Information and any Renewable Electricity for the alternative Baseline years has been provided to the Department.
  - A Covered Property with an alternative Baseline shall comply on an annual basis with adjusted performance requirements according to the table below; annual Greenhouse Gas Emissions will not exceed the indicated percentage of the alternative Baseline:

	Alternative Baseline Performance Requirements							
	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
Compliance Period 1:	66.7%	68.1%	69.6%	71.1%	72.7%	74.4%	76.2%	78.0%

2025 to 2029								
Compliance Period 2: 2030 to 2034	50.0%	51.1%	52.2%	53.3%	54.5%	55.8%	57.1%	58.5%
Compliance Period 3: 2035 to 2039	33.3%	34.0%	34.8%	35.6%	36.4%	37.2%	38.1%	39.0%
Compliance Period 4: 2040 to 2044	16.7%	17.0%	17.4%	17.8%	18.2%	18.6%	19.0%	19.5%
Compliance Period 5: 2045 to 2049	8.3%	8.5%	8.7%	8.9%	9.1%	9.3%	9.5%	9.8%
Compliance Period 6: 2050 onwards	0%	0%	0%	0%	0%	0%	0%	0%

- (4) Exemptions: A Covered Property will be exempted by the Department from the requirements of 8.67.100 if it qualifies as one of the following:
- (a) New construction: For Covered Properties that receive an initial Certificate of Occupancy after the start of the default Baseline years, the Baseline shall be the average Greenhouse Gas Emissions of the first two full calendar years following the issuance of the Certificate of Occupancy. Such Covered Properties shall be exempt from the requirements of 8.67.100 for the five years following the conclusion of this Baseline period. The performance requirements for each subsequent five-year period shall be determined by a linear reduction to net zero emissions by 2050.
  - (b) A Net Zero Emissions Building;
  - (c) Vacancy: The Covered Property is fully vacant for the full year;
  - (d) The Covered Property is to be fully demolished within the forthcoming calendar year;
  - (e) Financial Distress: Owners of a financially distressed Covered Property may apply for an extension until the end of the current compliance period. Owners must provide a form of third-party verification to substantiate an exemption request due to financial distress. A building is considered in financial distress if it meets one of the following criteria:
    - (i) The Covered Property is qualified for sale at a public auction due to arrears of public taxes within two years of the start of the compliance period.
    - (ii) The Covered Property is controlled by a court-appointed receiver due to financial distress.
    - (iii) The Covered Property is owned by a financial institution through default by the borrower.
    - (iv) The Covered Property has been acquired by deed in lieu of foreclosure.
    - (v) The Covered Property has a senior mortgage which is subject to a notice of default.
- (5) The following building type-specific compliance pathways shall be permitted:
- (a) Campus:
    - (i) A Campus may choose to comply with the requirements of Section 8.67.100 at the level of each Covered Property or at the level of the aggregate Campus

- greenhouse gas emissions. Campus Owners must determine their Baseline according to the method by which they intend to comply with the requirements. Owners may request to adjust their Baseline to include in the aggregate Campus any new buildings that receive their Certificate of Occupancy after the start of the Baseline years.
- (ii) If the Covered Property that is part of a Campus is included in an institutional comprehensive plan and a corresponding energy management plan, and these plans have reduced Greenhouse Gas Emissions from buildings at the institutional level by the required amount for that compliance period, then the Covered Property shall be considered to be in compliance. To show compliance with this pathway, the Owner must provide copies of the institutional comprehensive plan, institutional energy management plan, and the completed institution-wide greenhouse gas inventory for buildings for the compliance period.
- (b) Laboratories and Affordable Housing:
- (i) Laboratories and Affordable Housing shall have the option to comply with the following alternative compliance schedule:
    1. Compliance Period 1: 2027 to 2033; annual Greenhouse Gas Emissions will not exceed 66.7% of the default Baseline
    2. Compliance Period 2: 2034 to 2040; annual Greenhouse Gas Emissions will not exceed 33.3% of the default Baseline
    3. Compliance Period 3: 2041 to 2049; annual Greenhouse Gas Emissions will not exceed 16.6% of the default Baseline
    4. Compliance Period 4: 2050 onwards; annual Greenhouse Gas Emissions are net zero.
  - (ii) Laboratory and Affordable Housing owners choosing to follow the alternative compliance schedule shall submit documentation to the Department showing that the Covered Property qualifies as a Laboratory or Affordable Housing at the start of each 5-year compliance period.
  - (iii) Laboratories and Affordable Housing choosing to follow the alternative compliance schedule shall submit a Greenhouse Gas Emissions Reduction Plan to the Department four years prior to the start of each alternative compliance period detailing how the greenhouse gas emissions reduction requirement for that compliance cycle will be met.
  - (iv) For newly constructed Laboratories and Affordable Housing that choose to follow the alternative compliance schedule and receive an initial Certificate of Occupancy after the start of the default Baseline years, the Baseline shall be the average Greenhouse Gas Emissions of the first two full calendar years following the issuance of the Certificate of Occupancy. Such Laboratories and Affordable Housing shall be exempt from the requirements of 8.67.100 for the seven years following the conclusion of this Baseline period. The performance requirements for each subsequent seven-year period shall be determined by a linear reduction to net zero emissions by 2050.
  - (v) For Laboratories and Affordable Housing that request an alternative Baseline pursuant to 8.67.100 (2), the adjusted performance requirements shall be as follows; annual Greenhouse Gas Emissions will not exceed the indicated

percentage of the alternative Baseline:

	Alternative Baseline Performance Requirements							
	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
Compliance Period 1: 2027 to 2033	55.6%	56.8%	58.0%	59.3%	60.6%	62.0%	63.5%	65.1%
Compliance Period 2: 2034 to 2040	27.8%	28.3%	29.0%	29.6%	30.3%	31.0%	31.7%	32.5%
Compliance Period 3: 2041 to 2049	13.9%	14.2%	14.5%	14.8%	15.2%	15.5%	15.9%	16.3%
Compliance Period 4: 2050 onwards	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

#### 8.67.110 MAINTENANCE OF RECORDS AND DATA VERIFICATION

- (1) Owners shall maintain records as the Department determines is necessary for carrying out the purposes of this Ordinance, including but not limited to energy and water bills and other documents received from Tenants and/or Utilities. Such records shall be preserved by Owners for a period of seven (7) years. At the request of the Department, such records shall be made available for inspection and audit by the Department.
- (2) Owners shall self-certify their reporting data every year.
- (3) For the two Baseline years, Owners shall provide a third-party verification of their reporting data, submitted by the benchmarking deadline for the first year of the first compliance period. Verifications must be performed by an Approved Verification Body.
- (4) For the first year of each compliance period, Owners shall provide a third-party verification of their reporting data, submitted by the benchmarking deadline for that year per 8.67.050(1). Verifications must be performed by an Approved Verification Body.
- (5) In the event that there is a discrepancy between third-party verified data and an Owner's self-certified reporting data, any resulting lack of compliance with the emissions reduction requirements in Section 8.67.100 shall be a violation.
- (6) At the time any occupied Covered Building is transferred, the buyer and seller shall arrange for the seller to provide to the buyer all information necessary for the buyer to report Benchmarking Information for the entire year in a timely manner. It shall be a violation of this Ordinance for any seller to fail to so provide any such information.

#### 8.67.120 VIOLATIONS

It shall be unlawful for any entity or person to fail to comply with the requirements of this Ordinance

or misrepresent any material fact in a document required to be prepared or disclosed by this Ordinance.

#### **8.67.130 ENFORCEMENT AND ADMINISTRATION**

- (1) The Assistant City Manager for Community Development or his or her designee shall be the Chief Enforcement Officer of this Ordinance.
- (2) The Assistant City Manager for Community Development may promulgate regulations relative to the administration of the requirements of this Ordinance as necessary.
- (3) By December 31, 2026, in consultation with Covered Property Owners, the Department shall review compliance with Section 8.67.100 of this Ordinance and report to the City Council.
- (4) If any person or entity fails to report the Benchmarking Information, such failure to report shall be deemed a violation and the following enforcement measures may be taken:
  - (a) For the first violation, a written warning may be issued; and
  - (b) For any subsequent violation, the Department may issue a fine of up to \$300.00 per violation, per day, pursuant to the provisions of Chapter 1.24 herein. Each day of violation shall constitute a separate offence.
- (5) In the event that third-party verification of Benchmarking Information reported by an Owner identifies a discrepancy with an Owner's self-certified reporting, such discrepancy shall be deemed a violation and the following enforcement measures may be taken:
  - (a) For the first violation, a written warning may be issued; and
  - (b) For any subsequent violation, the Department may issue a fine of up to \$300.00 per violation, per day, pursuant to the provisions of Chapter 1.24 herein. Each day of violation shall constitute a separate offence.
- (6) If any person or entity fails to meet the emission reduction requirements, such failure shall be deemed a violation and the following enforcement measures may be taken:
  - (a) For the first violation, a written warning may be issued; and
  - (b) For any subsequent violation, the Department may issue a fine of up to \$300.00 per violation, per day, pursuant to the provisions of Chapter 1.24 herein. Each day of violation shall constitute a separate offence.

#### **8.67.140 SEVERABILITY**

If any provision of this Ordinance shall be held to be invalid by a court of competent jurisdiction, then such provision shall be considered separately and apart from the remaining provisions, which shall remain in full force and effect.

#### **8.67.150 EFFECTIVE DATE**

The provisions of this Ordinance shall be effective immediately upon passage.



Nancy E. Glowa  
City Solicitor

Arthur J. Goldberg  
Deputy City Solicitor

Megan B. Bayer  
First Assistant City Solicitor



Assistant City Solicitors  
Paul S. Kawai  
Brian A. Schwartz  
Diane O. Pires  
Patrick C. Cento  
Kate M. Kleimola  
Sydney M. Wright

Public Records Access Officer  
Seah Levy

**CITY OF CAMBRIDGE**

Office of the City Solicitor  
795 Massachusetts Avenue  
Cambridge, Massachusetts 02139

November 8, 2021

Louis A. DePasquale  
City Manager  
Cambridge City Hall  
795 Massachusetts Avenue  
Cambridge, MA 02139

***Re: Awaiting Report No. Awaiting Report Item #21-84 of 11/1/21***  
***Re: Proposed Amendments to Building Energy Use Disclosure Ordinance***

Dear Mr. DePasquale,

I am submitting this response to the above referenced Awaiting Report in addition to having also participated with the Community Development Department (“CDD”) in reviewing its proposed amendments to the Building Energy Use Disclosure Ordinance; Municipal Code Chapter 8.67 (“BEUDO”).

In reviewing the proposed amendments to BEUDO, we have concerns that some aspects of the proposed amendments may be subject to challenge, which we wanted to bring to the City Council’s attention. This type of measure aimed at reducing greenhouse gas (“GHG”) emissions is novel and has yet to be reviewed by a court. While, as always, we would vigorously defend any challenge to these proposed amendments, we wanted to advise the Council that there are potential legal challenges that could be brought.

The proposed amendments to BEUDO set out GHG performance requirements that would be required for certain properties in the City (primarily large residential and commercial properties) and provide multiple pathways for compliance with the performance requirements. These pathways include alternative compliance payments, which are set out in the definition of the Alternative Compliance Credit that is included in the proposed amendments. It is possible that the option to make a payment in lieu of meeting other performance requirements could be challenged as an impermissible tax. In Massachusetts, municipalities have authority to collect fees but not to tax other than as specifically permitted by the Legislature. *Emerson College v. City of Boston*, 391 Mass. 415, 424-25 (1984). To be upheld as a valid fee, courts have applied a three-prong test: a fee is charged in exchange for a service that benefits the party paying the fee in a manner not shared by other members of society; the party paying has the option of not utilizing the service and avoiding the fee; and the fee is not collected to raise revenue but instead



to compensate the government for the services. *Id.* We would argue that the Alternative Compliance Credit is voluntary because a property owner has other available options for complying with the proposed amendments and does not need to avail itself of the Alternative Compliance Credit. We also have some concerns whether the Alternative Compliance Credit satisfies the other prongs of the tax versus fee test. However, because such a payment has not yet been tested, we do not know exactly what conclusion a court would reach if it were challenged.

Additionally, the proposed amendments require eliminating GHG emissions from regulated properties by 2050, with intermediate targets set at certain intervals, compared to an individual 2018-2019 baseline required for most buildings. For purposes of determining the GHG emissions by a covered property, the proposed amendments assume that nuclear and old or existing wind, solar and hydroelectric generated electricity emit the same amount of GHG as the burning of coal, oil and gas. It is possible that a reviewing court would find that there is not a logical basis for imposing penalties for exceeding maximum permissible GHG emissions if the building did not actually emit the assumed amount of GHG emissions during the relevant compliance period. For an ordinance to withstand a challenge it must be reasonable. There must be some logical connection between the object sought to be accomplished by an ordinance and the means prescribed to accomplish that end. The court will not substitute its judgment of what is reasonable for that of a city council unless it has been shown that the local legislative body has acted in an arbitrary or capricious manner. *Town of Milton v. Donnelly*, 306 Mass. 451, 459 (1940). If challenged, we believe there are arguments that could be advanced that a GHG emissions equivalent is permissible to advance the legitimate policy goals of creating new renewable electric generation facilities and to discourage the use of nuclear fuels.

Finally, because the Commonwealth of Massachusetts has recently enacted legislation that regulates certain aspects of greenhouse gas emissions, including in buildings; see, Chapter 8 of the Acts of 2021, entitled “An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy”, an argument could be made that the state has potentially “occupied the field” with regard to GHG emissions, and that the City has exceeded its authority if it enacts the proposed amendments relating to this issue. Because the state has not yet promulgated regulations pursuant to the new law, however, it is not yet known whether the City’s proposed amendments might be inconsistent with or prohibited by the new law or any new regulations promulgated pursuant thereto. Depending upon what the state’s regulations provide, a court could find that the City’s proposed amendments to BEUDO, if challenged, are inconsistent with the state statutory scheme or that the state statutory scheme has occupied the field; and the court could strike down the amendments as exceeding the City’s authority. However, we will have no way of knowing that in advance of the state’s promulgation of regulations.

In sum, measures aimed at GHG emission reduction present novel issues that have not yet been tested by the courts, and we do not know what a court would decide if there were a challenge. I will be available to answer any questions the Council may have.

Very truly yours,

Nancy E. Glowa  
City Solicitor

# Comment on Community Development Department (CDD) Amendment

Susan Murcott

Lecturer, MIT D-Lab

April 26, 2023

# Outline

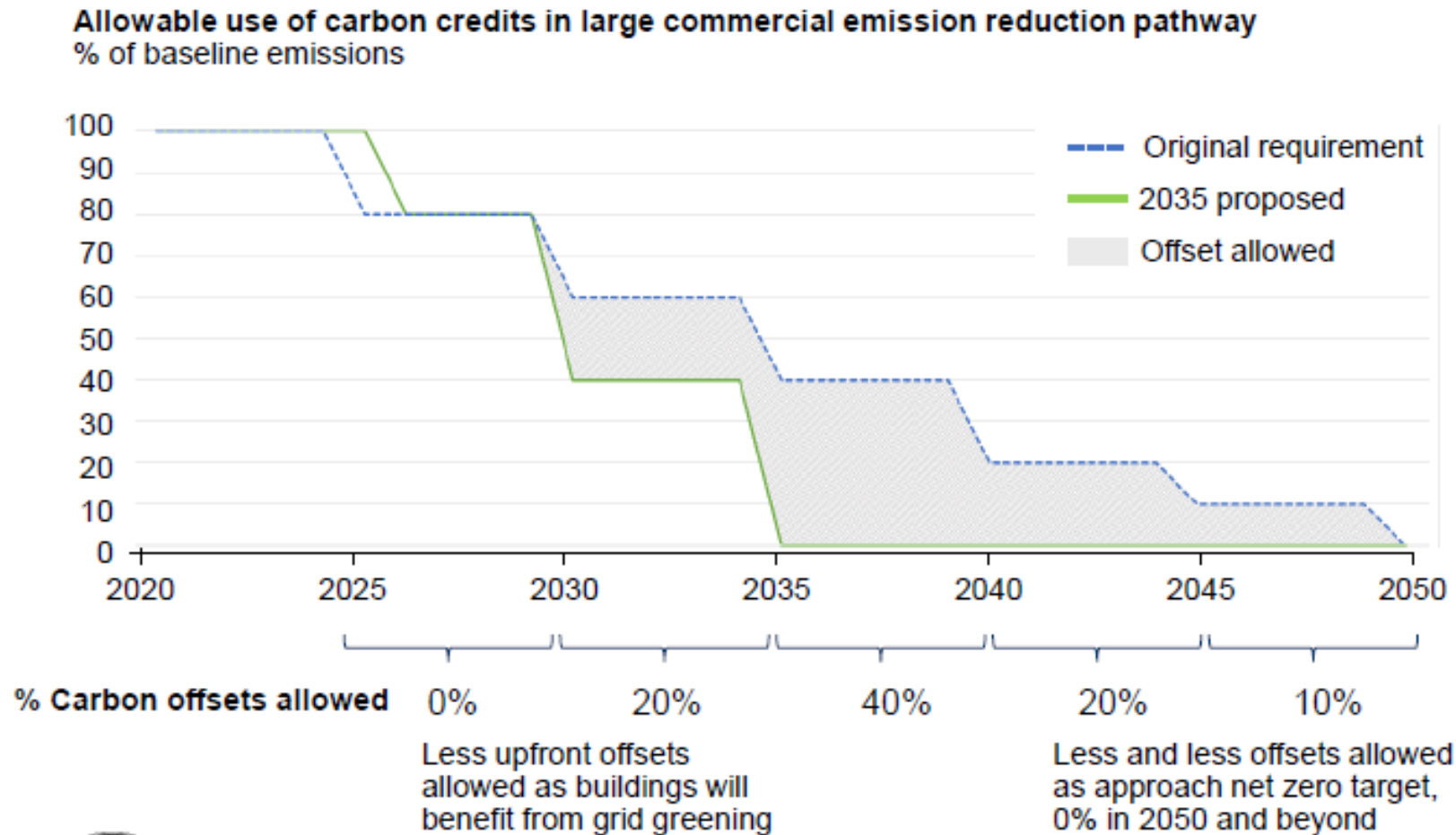
- CDD proposal includes carbon offsets as an essential element
- Carbon offset market failure
- Carbon offset evaluation frameworks
- MIT's demonstration of climate leadership

# Introduction

- I am Susan Murcott, a Lecturer at MIT D-Lab and I attended and gave public comment at the April 12, 2023 session of the Cambridge city Council where the Community Development Department proposed an alternate plan to the BEUDO Amendment

## 2. CARBON OFFSETS

**Based on the feasible pace of retrofits, we added the limited use of carbon offsets in certain years for large commercial buildings**



Attachment: BEUDO Council Presentation 4.12.23\_vFF (COF 2023 #65 : Building



**CITY OF  
CAMBRIDGE**



# MIT D-Lab Research on Carbon Offset Market Failure and Possible Alternatives

- A team of D-Lab students from the MIT D-Lab “Water, Climate Change and Health,” class working with Steve Lanou of MITOS and me is researching voluntary and commercial market carbon offsets to understand both the current market failure and propose possible alternatives.
- One preliminary finding is that the current carbon offsets market do not reliably offset carbon and, in some cases, may even worsen global warming.

# Revealed: more than 90% of rainforest carbon offsets by biggest certifier are worthless, analysis shows

The Guardian, 18 January 2023

## Investigation into Verra carbon standard finds most are 'phantom credits' and may worsen global heating

- Only a handful of Verra's rainforest projects showed evidence of deforestation reductions, according to two studies, with further analysis indicating that 94% of the credits had no benefit to the climate.
- The threat to forests had been overstated by about 400% on average for Verra projects, according to analysis of a 2022 University of Cambridge study.
- Gucci, Salesforce, BHP, Shell, easyJet, Leon and the band Pearl Jam were among dozens of companies and organisations that have bought rainforest offsets approved by Verra for environmental claims.
- Human rights issues are a serious concern in at least one of the offsetting projects. The Guardian visited a flagship project in Peru, and was shown videos that residents said showed their homes being cut down with chainsaws and ropes by park guards and police. They spoke of forced evictions and tensions with park authorities.

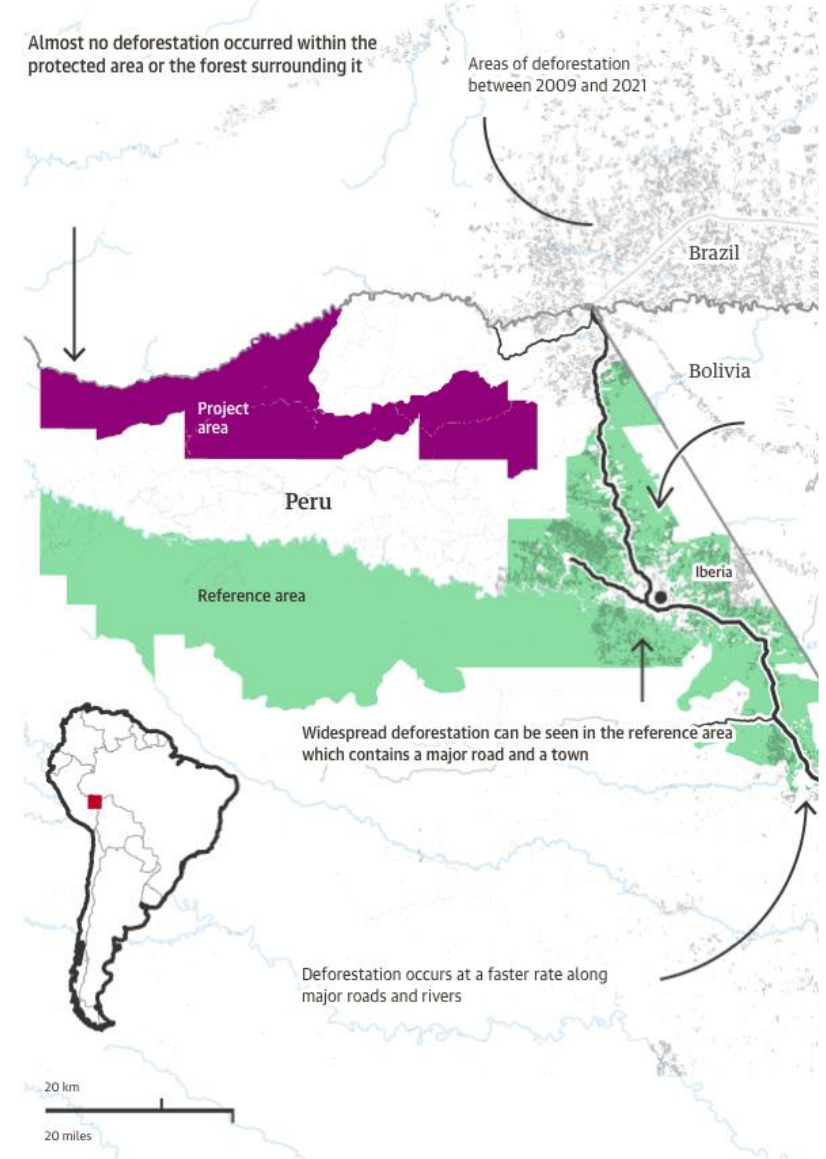
<https://www.theguardian.com/environment/2023/jan/18/revealed-forest-carbon-offsets-biggest-provider-worthless-verra-aoe>

Ref: Slide: John Sterman. "Transition to Net Zero: Carbon Offsets and the AVID+ Framework"

### An example of a Verra project, alongside the reference area used for projecting deforestation rates

Attachment: Comment on CDD Amendment Carbon Offsets\_SMurcott\_4-26-23 (COF 2023

In this particular example - the Madre de Dios Amazon project - the reference area incorporates a road, which will potentially lead to a high rate of deforestation



Guardian graphic. Source: High-Resolution Global Maps of 21st-Century Forest Cover. Potapov, R Moore, M Hancher, SA Turubanova, A Tyukavina, D Thau, SV Stehman, S Komareddy, A Egorov, L Chini, CO Justice, and JRG Townshend. 2013. Referenced documents

# Biggest carbon credit certifier to replace its rainforest offsets scheme

a

Verra's rainforest carbon credit methodologies, which Guardian investigation found were flawed, will be phased out by mid-2025

- **As carbon offsetting faces 'credibility revolution', shoppers should be wary**



📷 The investigation indicated that many claims based on the rainforest credits were largely meaningless Photograph: Angela Ponce/The Guardian

“The investigation indicated that many claims based on the rainforest credits, which are generated by predicting deforestation that would have happened in the absence of the conservation projects, were largely meaningless, putting organisations that buy the offsets at risk of greenwashing. Verra heavily disputed the findings and said it remained committed to rainforest conservation schemes.”

“The US non-profit said it would stand by current methods for producing rainforest offsets in the interim even though authors of Verra’s own rules for the carbon credits say they are flawed and open to exploitation, potentially allowing tens of millions of worthless carbon credits to be issued and sold to companies in the meantime.”

Attachment: Comment on CDD Amendment Carbon Offsets\_SMurcott\_4-26-23 (COF 2023



Green

## California's \$19 Billion Carbon Market Falls Short in Fight to Curb Emissions

The marquee climate initiative has had little direct impact on greenhouse gases.



by Klima DAO price dropped: Klima collapse explained

9K views · Dec 2, 2021

Tube > The Cryptotainer



# Carbon Offset Evaluation Frameworks

- Several carbon offset evaluation frameworks have been put forward to address this market failure:
  - AVID+[1]
  - PAVER+ [2]
  - Net Ecosystem Exchange – a possible gold standard for evaluation of carbon offsets

## References

[1] Sterman, John. "Transition to Net Zero: Carbon Offsets and the AVID+ Framework" Slide Presentation. Sloan School of Mgt. April 2023

[2] Baretto, V et al. "Study of Carbon Offsets and RECS to Meet Boston's Mandate for Carbon Neutrality by 2050." MIT Sloan Sustainability Class + B.U. Institute for Sustainable Energy. 5/17/2018

# AVID+ Framework (Stermann 2022)

Legitimate carbon reductions (offsets, voluntary C market, PPAs, others) must be **AVID**:

- **A** Additional
- **V** Verifiable
- **I** Immediate
- **D** Durable
- **“+”** *If all AVID requirements are met, then choose actions that multisolve: offer additional benefits, e.g.:*
  - ✓ Good Jobs
  - ✓ Better health,
  - ✓ Resilience
  - ✓ Community development,
  - ✓ Social/economic justice
  - ✓ Etc.

MarketWatch Latest Watchlist Markets a

Outside the Box

## Opinion: ‘Net zero’ pledges can amount to greenwashing. This is the better way to reduce deadly carbon emissions

Last Updated: Jan. 22, 2022 at 6:26 p.m. ET  
First Published: Jan. 19, 2022 at 11:30 a.m. ET

By John Sterman

Many offset programs are based on dubious assumptions and can actually worsen the climate problem. MIT Sloan’s John Sterman outlines a more effective strategy.

<https://www.marketwatch.com/story/net-zero-pledges-can-amount-to-greenwashing-this-is-the-better-way-to-reduce-deadly-carbon-emissions-11642609889>

MIT MANAGEMENT SLOAN SCHOOL

IDEAS MADE TO MATTER | CLIMATE CHANGE

## How to choose carbon offsets that actually cut emissions

by Betsy Vereckey | Nov 2, 2022

Why It Matters

MIT Sloan professor John Sterman unpacks the implications of companies’ net zero emissions goals and offers a framework for real impact.

Share <https://mitsloan.mit.edu/ideas-made-to-matter/choose-carbon-offsets-actually-cut-emissions>

Packet Pg. 61

Attachment: Comment on CDD Amendment Carbon Offsets\_SMurcott\_4-26-23 (COF 2023)



# PAVER+ Framework <sup>[1]</sup> Criteria for a “good” Offset or REC

- **P Permanent**
- **A Additional**
- **V Verifiable**
- **E Enforceable**
- **R Real**
- **“+” Co-benefits** - related to sustainable and inclusive socio-economic development

[1] Ref: ] Baretto, V et al. “Study of Carbon Offsets and RECS to Meet Boston’s Mandate for Carbon Neutrality by 2050”  
MIT Sloan Sustainability Class + B.U. Institute for Sustainable Energy. 5/17/2018

# Net EcoSystem Exchange (NEE) Framework

Net Ecosystem Exchange is a universal metric

- Respiration of the ecosystem  $R_{eco}$
- Plus Gross Primary Production (GPP)

$$NEE = R_{eco} + GPP$$

- Positive NEE values indicated emissions of CO<sub>2</sub> from the vegetation to the atmosphere, and negative values indicate CO<sub>2</sub> sequestration. *(The positive NEE values occurs mostly at night and is associated with  $R_{eco}$  when the sun isn't catalyzing the photosynthesis reaction).*
- NEE is measured by Eddy Covariance and includes soil CO<sub>2</sub> respiration of the ecosystem ( $R_{eco}$ ) and photosynthesis (GPP).
- It is a scientifically rigorous “gold standard” for measuring carbon sequestration within natural and urban ecosystems.
- Carbon offsets can be purchased based on NEE measurements through a Cambridge MA based company, Planet Alpha Corporation. This is one among several alternatives that might deliver “real” carbon emissions reductions and co-benefits. This is part of on-going D-Lab student team is investigations. But carbon offsets should not be a substitute for directly reducing on-site buildings and other emissions!

# MIT's Climate Leadership

- Given the uncertainty of the current carbon offsets market failures, carbon offsets are a dubious substitute for reducing carbon emissions on MIT's campus.
- MIT can best demonstrate its climate leadership and its dedication to its students, our "future generations," by supporting the BEUDO Amendment
- This is a matter of acting in THIS DECADE to reduce our own emissions to zero as quickly as it possible, not to expect special accommodations for supposed hardships.
- Leaders at Boston University, Cornell, Columbia and Stanford and other eminent colleges universities have already shown the way. MIT has this responsibility to learn from others and undertake aggressive climate action / emissions reductions now.
- Support for the BEUDO Amendment is in line with MIT's Climate Leadership and is in the best interests of our students at MIT and beyond.
- We can do it!

# MIT Net Zero Carbon Meter (Earth Week, 2023)

a project of: *D-Lab* Development through  
Discovery, Design  
and Dissemination



Current display on the  
top of the Green  
Building – “tallest  
building in Cambridge”

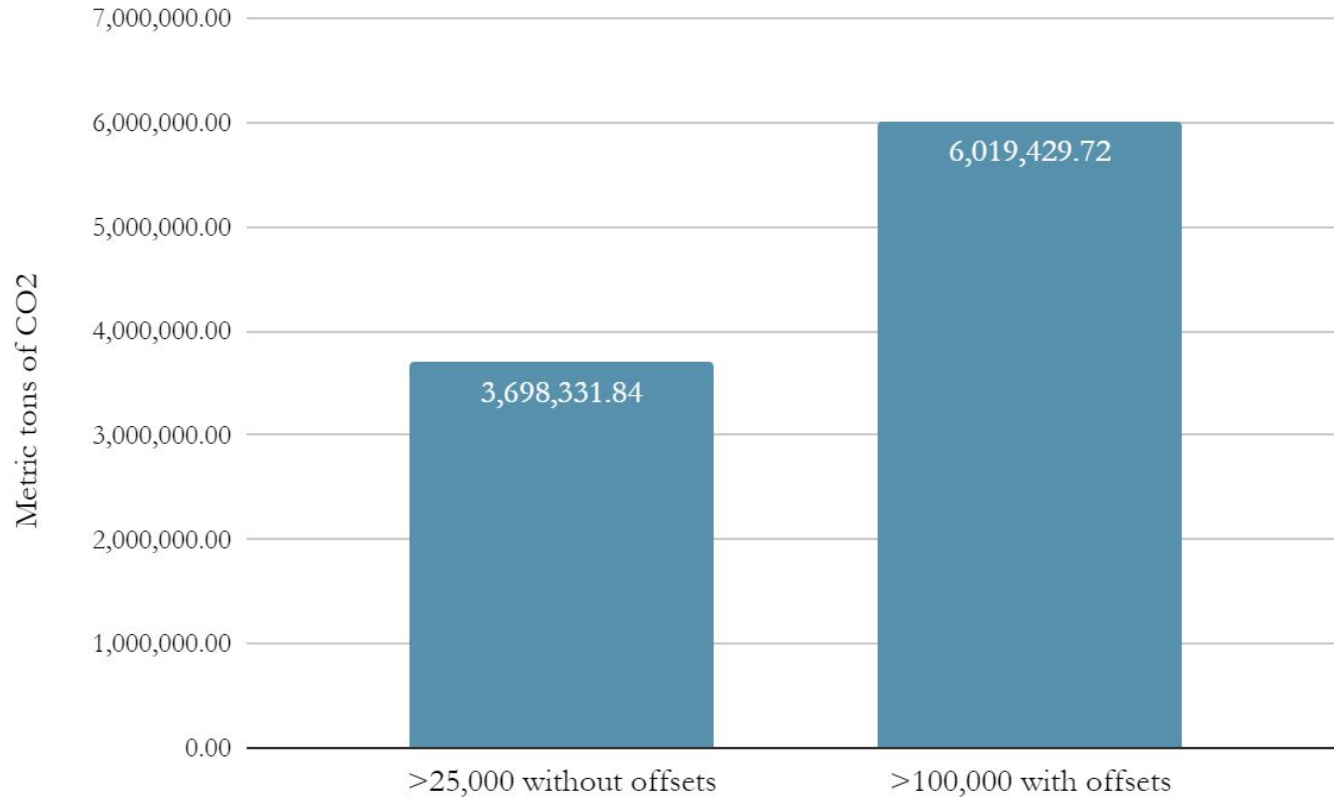
Showing that in 2022,  
the latest year of  
record, MIT has reduced  
its CO<sub>2</sub> emissions by  
15%.

# Emissions Analysis

Sahithi Madireddy

# Building Emissions Permitted by 2050

b



## **City Councilor BEUDO Question and Answer Following April 12, 2023 Ordinance Committee Hearing**

Councilor questions are listed in italics followed by staff responses in regular text

### ***Covered Properties***

#### ***1. Are all nonprofits now exempt (religious, educational institutions, charities, etc.)?***

Nonprofit buildings that meet the BEUDO size thresholds are not exempt, but under the proposal if they are under 100,000sf then they are placed on the 2050 net zero trajectory, and any building may apply to the Review Board for an individual hardship compliance plan that is deemed justified. Given the range of nonprofit BEUDO property owners that include both small community organizations and large institutions, allowing for case-by-case flexibility is important given the diversity of our city.

#### ***2. Residential is still required to meet goals by 2050 except for Condominiums. You mentioned that you will differentiate between large residential property owners who you believe can meet the requirements by 2050 and those who may face challenges in meeting these goals. What criteria will be used? Is there a list of properties that you already have identified? Will this be legally defensible if challenged by those deemed capable of meeting the goals we are setting and are not given an exemption or additional leeway in meeting the goals?***

The only proposed distinction for residential properties is condominiums, which would be exempt. All remaining rental properties that are subject to BEUDO (50+ units) would be covered on a gradual 2050 net zero trajectory. As with all covered properties, an individual residential property can apply for an individual hardship compliance plan from the Review Board if necessary.

#### ***3. How difficult is it to address commercial condo concerns and include commercial condos along with residential condominiums?***

In contrast to residential condominiums, commercial condos are some of the highest-emitting BEUDO buildings (for example, One Hampshire St: 30,000 tons/year; Mt Auburn Hospital: 10,000 tons/year) so it is important that they remain covered under the amendments. It is expected that commercial condos also have greater capacity to meet the BEUDO requirements, and they can petition the Review Board to address building-specific challenges.

#### ***4. I am concerned about unintended consequences, specifically applying these to large apartment buildings and other commercial buildings will most likely lead to tenant/small business displacement while property owners are making the improvements. This will also lead to future increases in rental costs which will be driven by property owners' desire to recoup their costs, making it even more difficult for lower- and middle-income families and small businesses to remain in Cambridge. Could we include all residential buildings in the exemptions allowed for condominiums?***



Most other building performance standards include all residential buildings over a certain size threshold. The City's amendment proposal maintains single-owner rental residential properties under BEUDO for the following reasons:

- a. BEUDO performance requirements for rental properties gives them a predictable pace of emission reductions between 2030 and 2050, facilitating advanced planning and supported by City resources
- b. Single-owner rental properties have centralized decision-making which facilitates capital planning and upgrades
- c. Lower emission buildings can be healthier and more comfortable to live in and come with lower energy costs for tenants unable to make upgrades on their own

*5. I thought it was very interesting that the city has 40 properties that will need to comply with BEUDO. I also appreciate the observation that allowing carbon offsets will allow us to avoid making "bad quick fix investments" rather than allowing for more time to find the right solutions for the longer term. Could we get a bit more detailed workplan for what the BEUDO amendments would mean for the City's buildings? As a city how much will we need to start putting aside annually in our budget to meet these goals for our own buildings? What are the tax implications?*

It will be a significant challenge for the City to meet the 2035 goals, but we are committed to do this. However, it will require the use of vPPAs and carbon offsets.

- Virtual Power Purchase Agreements (vPPAs) will significantly reduce the City's GHG emissions from electricity consumption by providing 100% renewable electricity from new renewable energy projects. The remaining emissions from on-site fossil fuel combustion are more challenging to eliminate quickly.
- For 2035, the reason for using carbon offsets is due to the complexity of large capital projects. It will be very difficult to conduct HVAC retrofits on the City's largest buildings, such as CRLS, War Memorial, Main Library, and the Water Treatment Plant by 2035. The flexibility to apply carbon offsets is important to allow us to reach 2035 goals without having to prioritize quick-fix partial electrification projects that do not actually improve the efficiency or address other significant needs for the buildings.
  - While it may be technically possible on some buildings to perform limited-scope conversion of natural gas boilers to electric, there are a number of significant potential downsides to this approach:
    - Unless accompanied by other improvements, simply changing to an electric boiler will be less efficient than current systems
    - Does not address overall building systems, many of which are past their useful life or failing. Would still require future improvements
    - May trigger an electrical service upgrade, which will be cost and time intensive
    - Even a limited scope project could require relocation of occupants for up to a year, while not noticeably improving user experience or comfort

- Preferable to convert these HVAC systems to electric as part of a comprehensive phased plan of building renovations towards the 2050 target date. This allows full systems improvements which will reduce GHG emissions, make the buildings more efficient, and address user needs and comfort.
- Through two ongoing parallel studies, the Municipal Facilities Improvement Plan (MFIP) and School Assessment & Masterplan, we will continue ongoing phased building renovation projects to achieve net zero emissions for the portfolio by 2050.

### ***Financing and Incentives:***

*1. Have we thought about offering incentives for people who reach their goal faster? I don't know what that would be, but just wondering if it was discussed.*

The CDD team has considered offering additional incentives but ultimately decided that it would be overly complicated to create a secondary set of targets that would reward building owners for moving faster than the existing proposed set of targets. Building owners that meet their goals ahead of schedule will benefit by being in compliance for subsequent years, getting recognition for acting earlier, and contributing to solving our global climate crisis.

*2. The \$10 million fund that will be used to support residents and property owners make the shift – is that \$10million annually or one time allotment? Can you provide some additional details about what it may be used for, eg. consultant fees vs. incentive assistance?*

The \$10M is expected to be spent over a 5 year period from 2025-2029, or about \$2M/year. It will be used to help smaller BEUDO commercial buildings and BEUDO residential buildings make plans and access technical support and financial incentives to achieve their emission reduction trajectories over time. This could include covering the cost of energy audits and reviewing results to then make capital project improvement plans over time, taking into account the emissions profile of each building, capital improvement needs, and alignment with state and federal incentives.

*3. PACE – Can you tell us more about PACE and how it can help us meet the goals?*

Property Assessed Clean Energy (PACE) is an additional financing mechanism that, if Cambridge opts in, would be available to commercial buildings and residential buildings with 5 or more units. PACE loans are administered through MassDevelopment and payments are collected via property tax bills (though the City is not a party to the loan). The main advantage of PACE financing for clean energy projects is that the loan rides with the property for up to 20 years, enabling retrofits with long-term payback periods to pencil out even if the current owner may sell the property before the investment has paid back, since the loan payment and any energy savings will continue to accrue to the new property owner.

*4. Bloc Power – I heard that there are no upfront costs and they provide financing but what is the long term cost to the residents / property owner?*

The BlocPower financing approach is an energy services model where the property owner(s) have no upfront cost and a predictable lease payment over time followed by a buy-out option for the installed measures. The specific cost depends on the scope of work being done and the circumstances of the building; in some cases, the monthly lease payment may be less than existing energy bills thanks to energy efficiency, solar, and/or lower-cost fuels (e.g. improved insulation, buildings transitioning off of oil or electric resistance), but in other cases the monthly payments may be higher. The maintenance and replacement costs of existing systems should also be taken into account in comparing long-term costs.

**Carbon Credits/Offsets:**

*1. Are we able to identify a set of offsets, eg. restricted to a local area, that we can verify and designate as the only options for investment by our property owners and institutions to address the criticism that not all carbon credits are equal?*

See separate memo on carbon offsets

**Enforcement and Review**

*1. How will we be monitoring and enforcing the ordinance? Will it be self-reporting by the property owners, or will we be employing additional city staff to review and enforce? What are the budget implications?*

Reporting of BEUDO data will continue to be done using the Federally-supported Energy Star Portfolio Manager software and the Building Energy Analysis Manager (BEAM) platform which allow for standardization and build-in quality control of reported data. While data is self-reported, owners can opt to have their reports link directly to their utility accounts and third-party verification of the baseline year and first year of each compliance period is included in the proposed amendments. Enforcement will be carried out using these data platforms for input and the Viewpoint system used by Inspectional Services and other departments for tracking. The Community Development Department currently has one full-time employee dedicated to BEUDO administration and will be hiring a second staff person in FY24 to add capacity to these duties as well as the development and provision of informational resources and connections to technical support.

*2. On the issue of emergency fossil fuel backup systems allowed until 2030 - Are we certain that they will not be necessary beyond 2030? Is there harm having them in place if they are not actually used except in an emergency?*

The proposed exemption of emissions from fossil fueled emergency backup systems will be included in the proposed 2031 review. At that time, the impacts of the backup generators along

with the technical and economic feasibility of alternatives will be considered to determine whether the exemption should be extended.

*3. A review schedule of 2031 is too late. Would there be any reason not to review this policy in 2028 which would be in line with the review timeline in the current ordinance - 5 years. At that time, the industry will have evolved, there'd be an experience base, and two years of data on the large buildings would be in hand to inform any adjustments.*

Yes, a 2028 review would allow for planning and adjustments in advance of the 2030 compliance period. However, under the current proposal only the largest buildings will have performance requirements to meet before 2028, so performance data will be limited. Therefore, an additional review is recommended after the 2030 compliance period which includes all covered properties.

### ***Policy Design and Impacts***

*1. Why are we attempting to meet net zero by 2035, 15 years ahead of Boston and the Commonwealth? What makes us so special? I heard testimony that other cities have a 2035 goal - What other cities are committed to 2035 here and nationally?*

Staff are not aware of other cities in the US that have committed to a 2035 net zero target. In line with recent calls from the International Panel on Climate Change for accelerated action, many leading local and national institutions and corporations are committing to near-term targets with flexibility measures built in:

- Harvard aims to be fossil fuel-neutral by 2026 and MIT aims to achieve net zero emissions by 2026—both made possible only with their use of high-quality global carbon offsets.
- Walmart (excluding their supply chain) commits to reaching zero emissions in their operations by 2040, without the use of global carbon offsets, but notes in the fine print that meeting this goal is dependent on many factors, including “innovation and technology that is not available today”.

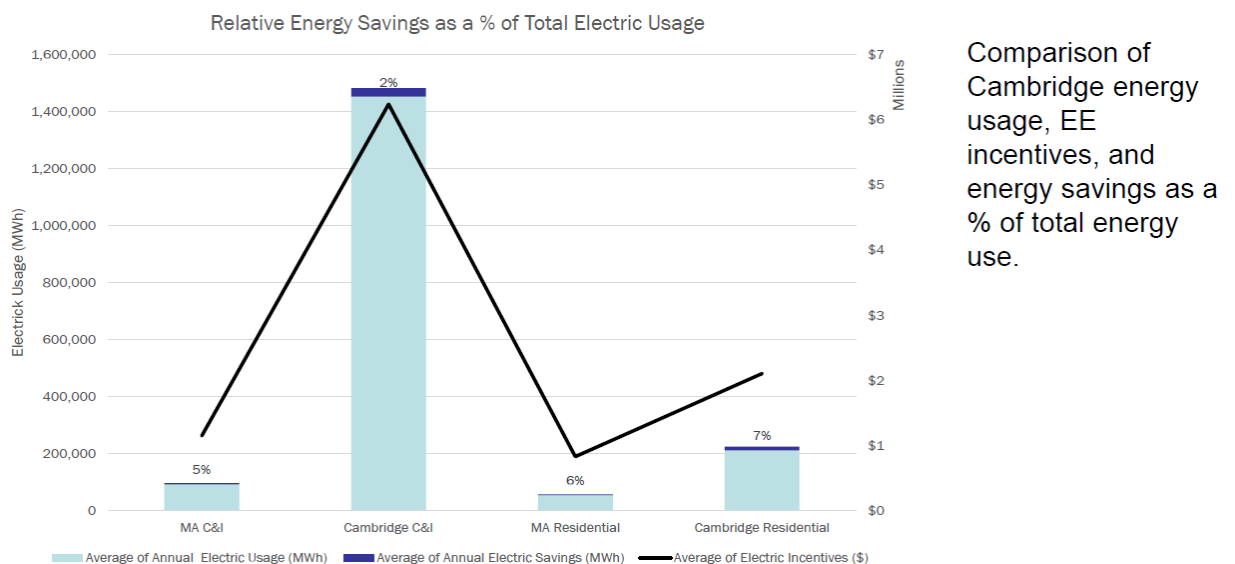
*2. Who was a part of the process in crafting the most recent proposal? Can you clarify whether any climate science leaders and residents who are not BEUDO building owners were included?*

There was significant engagement across all stakeholders, including climate science leaders, residents, and the Cambridge Climate Committee (then CPAC) at different stages in the process leading up to the original 2021 amendment proposal. The change from a 2050 to a 2035 net zero target further represented the climate activist perspective, going beyond where the state, Boston, and other cities around the country have gone. Work has been done since to determine how to feasibly achieve this target, with an emphasis on the building owners and operators who will have to meet them. In sum, the proposed approach is based on science-based targets backed by significant research and engagement.

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3. Eversource and state resources – Cambridge is already well ahead of the curve compared to other municipalities in Massachusetts. By pushing ahead for 2035 on our own, aren't we essentially asking Eversource to put our needs over other communities first? Are we essentially hoarding energy resources at the detriment of our neighboring communities?

In its presentation to the Economic Development and University Relation Committee, Eversource showed data indicating that Cambridge commercial and industrial electricity use is much higher than the state averages. So while Eversource's electricity incentives have been higher in Cambridge, they are so in proportion to the amount of electricity consumed (see table from Eversource below). Furthermore, it is important to remember that the electrical grid is a connected system that is not limited by municipal boundaries; investments in the grid in Cambridge have impacts on neighboring communities and vice-versa. Eversource earns a return on its infrastructure investments, so making investments in Cambridge is not necessarily detrimental to other communities. Finally, even if the net zero deadline for large buildings is accelerated to 2035, the needed investments in the grid will be spread out over time as buildings decarbonize using different methods, including the potential use of carbon offsets and district energy systems that are not reliant on the local electrical grid.



4. I worry that these well intended goals may make Cambridge less competitive compared to other communities without such aggressive timelines and that by raising the cost of building and doing business in Cambridge at such an expedited pace we will see innovative new businesses go elsewhere. Can you provide any assurances that this will not be the case?

While internalizing the cost of carbon emissions will come at a price, the broader economic impacts of BEUDO amendments depend on the ultimate content of the amendments along with decisions of property owners in context of broader economic factors at the regional scale. While the City cannot control these factors, Cambridge is lucky to have a very robust local economy and the City has committed to providing technical support to covered properties with an emphasis on helping to provide access to state and federal incentives to mitigate the cost of

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building energy upgrades and align these upgrades with properties long-term capital improvement plans.

*5. Do the flexibility mechanisms you discussed (deferments of payments, multiple exceptions, review board, 2031 review, etc.) address the City Solicitors' original legal concerns that the ordinance may be challenged as a "tax"?*

The 2021 memo from the City Solicitor was particularly focused on the use of alternative compliance credits (ACCs) and their impact on reducing GHG emissions as intended by the broader ordinance. As long all compliance mechanisms under the ordinance directly lead to GHG emission reductions, then they would not be construed as a tax.



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## Net Zero and BEUDO: The Role of Carbon Offsets

### **Carbon offsets are a promising tool to help BEUDO properties achieve our net zero goals**

Carbon offsets entered the BEUDO amendment conversation when the target date for achieving net zero emissions was accelerated from 2050 to 2035, driving the need for additional flexibility in compliance mechanisms. Under the current proposal, carbon offsets would be allowed to be used by buildings on the 2035 trajectory in limited amounts to offset on-site fossil fuel emissions beginning in 2030 and phasing down to 0 by 2050.

We must be diligent in our evaluation of carbon offset projects and ensure they meet high quality standards. By doing so, we can reduce global emissions while investing in communities and supporting emerging innovation and technology.

### **Carbon offsets are at an inflection point and we need to prepare for the changing landscape**

Carbon offsets are a critical tool for reducing global greenhouse gas emissions while investing in the most marginalized communities on the path to decarbonization, and demand for offsets continues to grow. But existing offset projects vary in their rigor and credibility due to the challenge of ensuring rigorous implementation in unregulated markets. For example, forestry conservation projects have faced scrutiny about whether they truly reduce emissions compared to business as usual. On the other hand, a voluntary carbon capture and sequestration project may be a good example of lasting emissions reductions.

The integrity of carbon credits has been recognized internationally as a serious problem, leading to significant efforts to develop market governance systems which are expected to continue over the next several years. Last month, the [Integrity Council for the Voluntary Carbon Market](#) (ICVCM or Integrity Council), released its [Core Carbon Principles \(CCPs\) and Program-level Assessment Framework](#) as a “significant step forward for consistent transparency by requiring programs to publish comprehensive information in an accessible manner so all stakeholders can understand how projects issuing CCP-labelled carbon credits impact emissions, society and the environment.”

Additionally, there are a number of rating agencies that are developing grading systems to evaluate projects and flag risks. The four major rating agencies are:

- [Sylvera](#)
- [BeZero](#)
- [Calyx Global](#)
- [Renoster Systems](#)

Sylvera and Renoster specialize in nature-based projects while BeZero and Calyx assess a broader range from cookstoves to methane capture.

### **Determining offsets criteria for BEUDO buildings will take time**

Given the current inflection point in the global carbon offset market and the maturation of offset governance expected to occur, having several years to detail BEUDO carbon offset criteria through a regulatory process including additional public input will help Cambridge better identify acceptable offsets for BEUDO compliance from either global or local sources.

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Please see the attached *Options Outline* for a staff analysis on the pros and cons of setting criteria for:

1. Participation in global carbon markets
2. Restricting offsets use to existing local/regional markets, or
3. Creating a new local carbon fund

The key challenges of implementing rigorous offset standards and securing sufficient offset supply are currently present within each considered option.

We also understand that BEUDO buildings may need support in identifying and accessing offsets that meet the amendment criteria, and the City will consider options to provide this support, similar to the facilitation of access to high-quality renewable electricity through the community aggregation program.

### **Option 1: Allow Global Carbon Offsets Subject to Stringent Quality Criteria**

**Approach:** Permit the largest commercial BEUDO buildings to use global carbon offsets, subject to stringent criteria that can ensure, to the extent possible, that the offsets are of high quality and reduce emissions.

**Risks:** The quality of many offset projects under existing protocols is uncertain, as are their actual emissions reductions. Offset projects typically receive their certifications from several private, NGO-operated offset protocols, each with different stringency and approval processes. As a result, it is difficult to determine if offset projects, even with certification, meet the proposed quality criteria. Most offsets are bought and sold as private transactions, not on an exchange, further reducing transparency; it appears that existing exchanges do not necessarily adhere to quality criteria.

**Benefits:** Allowing global carbon credit would create further options for BEUDO building owners to meet emissions goals. Using an established protocol would streamline administration of the offsets. BEUDO investments could flow to countries in need of clean energy and environmental support.

**Example projects:** Improved cookstoves to households in Guatemala ([VCS-certified](#)); Brazil forest conservation ([VCS-certified](#)); wastewater methane capture at Texas agribusiness facilities ([VCS-certified](#)); wind farm project in Indonesia ([Gold Standard-certified](#))

**Potential methods to mitigate risks:** The application of stringent criteria for offsets would disqualify questionable offset projects and help ensure that offsets used for BEUDO compliance are of high quality. Consultant work for BEUDO amendments has identified overarching criteria for high-quality offsets, based on a review of best practices from the GHG Management Institute and the Stockholm Environment Institute. The criteria encompass:

Key quality criteria	Stringent interpretation	Examples that would not meet this criteria
Additionality	The offset purchase enables carbon reduction that would not otherwise occur.	<ul style="list-style-type: none"> <li>× A wind farm project moved forward before selling its offset credits, since the offset revenue is not critical.</li> <li>× A project 'preserved' a forest, but it was unclear if the forest was otherwise going to be felled.</li> <li>× A landfill gas capture project was legally required by the jurisdiction it is in.</li> </ul>
Permanence	Emissions reductions are non-reversible, and projects have a plan for managing reversal risk.	<ul style="list-style-type: none"> <li>× A forestry project plants trees to store carbon, but does not establish sufficient legal protection over the land to prevent harvesting.</li> </ul>
Enforceability	The emissions reductions are not claimed by another entity or double-counted.	<ul style="list-style-type: none"> <li>× A project is registered with two offset protocols.</li> <li>× The emissions reductions from an industrial energy efficiency project are counted by both the company for local compliance, and the offset buyer for BEUDO compliance.</li> </ul>
Real	The project does not lead to emission increases elsewhere	<ul style="list-style-type: none"> <li>× A forest preservation project leads to an adjacent forest being clear-cut harvested.</li> </ul>
Scope type	Carbon removal projects are prioritized over emissions reduction projects	<ul style="list-style-type: none"> <li>× A project to provide clean cookstoves in developing countries avoids emissions in theory, but does not actually remove or store carbon.</li> </ul>

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Environmental justice	Projects do not exacerbate equity issues or environmental harms	× A forestry project in a developing country creates undue harms for communities nearby.
Verification / certification	Offsets are verified through a certification protocol.	

### Potential next steps

- Conduct an examination of the current offset protocols (e.g., American Carbon Registry, California Compliance Offset Program, VCS, etc.) and understand how stringently these criteria are applied.
- The quality of carbon offsets is a topic of global interest, and new international initiatives are working to define protocols for high-quality offsets. Cambridge can follow these efforts and utilize a new or revised offset protocol that meets the stringent quality criteria listed above.
- Determine which protocol to apply when determining eligibility of offsets purchased for BEUDO compliance, and what potential additional criteria would be required to ensure high quality, real emissions reductions. Investigate the size of the market of projects that meet these criteria. Determine approval process for any additional criteria.

### **Option 2: Allow Only Regional and Local Carbon Offsets, Subject to Similar Quality Criteria**

**Approach:** Allow the largest commercial BEUDO buildings to purchase offsets from projects in New England or another limited geographic region, similarly using criteria and certifications to ensure high quality.

**Risks:** As with global carbon credits, offset project certifications are provided by several private, NGO-operated protocols, making it important to investigate that the projects meet the proposed quality criteria and that they represent real emissions reductions.

**Benefits:** Investments from BEUDO buildings could potentially provide health and economic benefits to the region. Using offsets that are local to the region could potentially improve transparency and verifiability, as compared to global offsets. For example, such an approach could draw on New England's robust clean energy tracking and point-source emissions reporting to help ensure additionality for such projects.

**Examples of project verification in New England:** As is generally the case with global carbon credits, there is no established marketplace for offsets in New England. However, the verification protocols described in Option 1 have registered several dozen certified projects exist in New England, and there are nonprofit-run programs to support New England forestry projects through the sale of carbon credits.

- The Climate Action Reserve (CAR) certification has registered approximately 20 projects in New England. The Climate Action Reserve also has a directory of project developers and brokers for buying offsets.
- The American Carbon Registry has registered 30 projects in New England.
- RGGI, the Northeast cap-and-trade requirement for power plants, has an offset-approval process for projects in the Northeast, to allow energy generators to use a small amount of offsets; currently, no power plant operator is doing so.
- Broader to the US, California's [cap-and-trade requirements](#) allow regulated entities to use a small amount (<8%) of offsets to meet their requirements, and half of the offset projects must be within California. Other projects for California compliance have been developed across the US and globally.

**Example projects:** Landfill gas capture in Connecticut ([CAR-certified](#)); forest conservation trust in Maine ([CAR-certified](#)); forest management in Maine ([American Carbon Registry](#)) and New Hampshire ([American Carbon Registry](#)); farm methane capture in Vermont ([CAR-certified](#)); forest management in Michigan ([for California compliance](#))

#### **Potential mitigation measures:**

Any New England-specific offset would need to meet the same criteria described above to help ensure high quality and to result in real emissions reductions:

#### **Potential next steps**

- Examine the current offset verification protocols, as above, and determine which would be appropriate for New England-specific projects, and additional desired criteria. As above, the City would also draw on international efforts to define new protocols for high-quality offsets.
- Examining California's protocols for ensuring that half of compliance offsets have California-specific environmental benefits may also provide an example approach as well.
- Engage project developers and verifiers to determine potential project volumes in New England.

### **Option 3: Create a Local Offset Fund**

**Approach:** Create a local offset development and verification system (eg, within New England) for the largest commercial BEUDO buildings to purchase offsets from

#### **Risks**

- Cost of program design and administration and potential duplication of international offset protocol efforts
- Legal complexity and potential roadblocks to local/third party administration
- Uncertainty around supply of local GHG reduction projects which can lead to verifiable offsets
- Uncertainty regarding uptake of local offsets and revenue into program

#### **Benefits**

- Local control of program to meet Cambridge-specific needs
  - Not reliant on outside action to meet goals/timelines
- Additional local benefits such as green jobs and investment opportunities, accelerated GHG reductions and health benefits

#### **Mitigation measures**

- Market linkages to established offset markets in other places as backup for shortages
- Local offset fund can also include a “buffer pool” of offsets from each project to dip into in case of shortages/quality issues
- BEUDO policy will drive more predictable demand for offsets

#### **Example projects and potential GHG reduction volume**

- Rental unit retrofits (split incentive): 83,000MT/year
- On-site PV: 36,000
- Heat pumps: 80,000
- Deep Insulation/weatherization: 18,000
- Commercial EE: 18,000
- EVs/charging: 100,000
- 700 acres tree planting: 20,000

#### **Potential Next Steps**

- Review the potential supply of GHG reduction projects to tap into with a local offset program
- Determine how local offsets would be counted in institutional GHG inventories
- Investigate and develop program administration approach in context of broader offset market standards





# CAMBRIDGE

# CITY COUNCIL

Quinton Y. Zondervan  
*City Councillor*

Sumbul Siddiqui  
*Mayor*

Patty Nolan  
*City Councillor*

To the Honorable, the City Council:

Amendment	Category from CDD table	Proposed Amendments
1	Threshold	For commercial buildings, change floor of accelerated timeline from 100K to 50K square feet.
2	Exemptions	Charge the Review Board with approving all decarbonization plans and carbon offsets  Codify that there shall be no less than 50% representation from climate advocates and climate scientists on the Review Board, including all 5 technical experts
3a	Offsets	Insert AVID+/PAVERE framework into the ordinance so that only quality offsets may be used  Require that if available, local/regional offsets must be used before any other offsets
3b	Offsets	Develop a pool of local/regional credits (pre-approved by the Review Board with CDD assistance) that BEUDO owners can incorporate into their decarbonization plans.
4	Policy Review	Change completion date of initial review from 2032 to 2028

**Additional details not included in the CDD framework, to be clarified with ordinance language:**

Improved Campus Definition  
Improved Emissions Factors Definition  
Delete Net Zero Definition  
Add additional “Purpose” language  
Adjust Baseline Emissions Calculation  
Adjust Compliance Schedule for commercial buildings  
Alternative Compliance Pathways  
Create External Compliance Credits  
Embodied Emissions

	Modified 2035 Proposal			Original 2050 Proposal		b
	Residential	Commercial		Residential	Commercial	
Threshold	50+ unit rental properties	25,000 - <del>100,000sf</del> <b>50k sf</b>	over <del>100,000sf</del> <b>50,000sf</b>	>50 units	>25,000sf	
Reduction Trajectory (% below baseline)	2026: <del>0%</del> 2030: <del>20%</del> 2035: <del>40%</del> 2040: <del>60%</del> 2045: <del>80%</del> 2050: 100%	2026: <del>0%</del> 2030: 40% 2035: 60% 2040: 80% 2045: 90% 2050: 100%	2026: 20% 2030: <del>60%</del> 2035: <del>100%</del>	2025: 20% 2030: 40% 2035: 60% 2040: 80% 2045: 90% 2050: 100%		
Offsets	Not offered		Allowed for use against on-site fossil fuel emissions to achieve emission reductions from the baseline up to the following amounts: <del>2026: 0%</del> <del>2030: 20%</del> <del>2035: 40%</del> <del>2040: 20%</del> <del>2045: 10%</del> <del>2050: 0%</del> Local Offsets only unless not available. Then only "PAVERE" approved offsets •Establish quality criteria through regs	Not offered		
Baseline	<ul style="list-style-type: none"> <li>2018-2019 ave, with option to choose earlier to 2010, assuming 1%/year additional savings</li> <li>• buildings built after 2019: baseline is average emissions of first two full years follow C.O.</li> <li>- &gt;100,000sf: 20% reduction after 4 years/2026, then linear reduction every 3 years to 0 in 2035</li> <li>- &lt;100,000sf: GHG reductions of 20% in 2030, 40% in 2035, 60% in 2040, 80% in 2045, 100% in 2050</li> </ul>			<ul style="list-style-type: none"> <li>2018-2019 ave, with option to choose earlier to 2010, assuming 1%/year additional savings</li> <li>• separate trajectory for buildings built after 2019</li> </ul>		
Campus Pathway	<ul style="list-style-type: none"> <li>Applies to Affordable Housing or a minimum of 5 properties owned by the same organization</li> <li>Allows compliance in aggregate across the "campus," <u>taking account the emissions trajectory required of each covered property</u></li> </ul>			<ul style="list-style-type: none"> <li>Applies to Affordable Housing or a minimum of 5 properties owned by the same organization</li> <li>Allows compliance in aggregate across the "campus"</li> </ul>		
Alternative Compliance Credits	ACCs are available at \$234/ton • <u>Can be deferred for up to 5 years with Department-approved plan as long as cumulative emission reductions are equivalent</u> • <del>No deferrals or trading</del>			ACCs are available at \$234/ton • No deferrals or trading		
Exemptions	<ul style="list-style-type: none"> <li>• <u>Create a Review Board including 5 technical experts, 2 business representatives, and 2 advocates to approve case-by-case hardship compliance plans, which would account for:</u></li> <li>- <u>Financial distress</u></li> <li>- <u>Grid capacity</u></li> <li>- <u>Properties with unique challenges, such as: historical, religious, healthcare, affordable housing</u></li> <li>• <u>Backup generation exempt through 2030, then re-considered as part of Policy Review</u></li> </ul>			<ul style="list-style-type: none"> <li>• Financial distress</li> <li>• Net zero buildings</li> </ul>		An Emissions Reductions Review Board established by ordinance: 5 technical, 2 biz, 2 residents (1 renter, 1 owner), with a majority identifying as climate advocates
Policy Review	Policy Review <u>completed by May 1, 2028, following receipt of 2030 reports by May 1, 2031, to consider compliance with ordinance requirements, economics, technology, and policy context of emission reductions targets for 2035 and beyond</u>			Policy Review after first compliance period		
Off-site Renewable Electricity	<ul style="list-style-type: none"> <li>• Must come from new, purchaser-caused projects</li> <li>• Must retain RECs</li> <li>• Aggregation will count, but timing/volume TBD</li> </ul>			<ul style="list-style-type: none"> <li>• Must come from new, purchaser-caused projects</li> <li>• Must retain RECs</li> <li>• Aggregation will count, but timing/volume TBD</li> </ul>		
Grid-supplied Renewable Electricity	<ul style="list-style-type: none"> <li>• Grid emissions factor will be automatically applied to electricity consumption</li> <li>• Additional regulatory process needed to establish emission factors, including for district energy</li> </ul>			<ul style="list-style-type: none"> <li>• Grid emissions factor will be automatically applied to electricity consumption</li> <li>• Additional regulatory process needed to establish emission factors, including for district energy</li> </ul>		

**Proposed Amendment by Councillor Azeem:**

Amendment	Category from CDD table	Proposed Amendments
2	Exemptions	<p>Charge the Review Board with approving all decarbonization plans and carbon offsets</p> <p>Codify that <del>of the 9 review board members there shall be no less than 50% representation from climate advocates and climate scientists on the Review Board,</del> 2 climate activists and 5 technical experts who understand the urgency of climate change.</p>