AGENDA

NZAP Task Force Meeting 2

12/10/20

4:00 – 6:00 PM

Meeting called by City of Cambridge

Attendees: Net Zero Action Plan (NZAP) Task Force, NZAP Consulting Team, City of Cambridge

Meeting Objective:

- Explore the drivers behind recent GHG emissions trends
- Review and collect feedback from NZTF on the impacts of NZAP Actions to-date
- Familiarize NZTF with frames of reference for determining adjustments to NZAP actions going forward

Pre-meeting materials for review:

- FY 2020 Getting to Net Zero Action Plan Progress Report
- NZAP Impact Assessment Report

4:00 – 4:20 **Part 1: Recap of Meeting 1 with Feedback from NZTF**

4:20 – 4:35 **Part 2: Review Building Sector GHG Emission Trends**

(Leave 5 mins for Questions)

4:35 – 5:20 **Part 3: In-depth Review of Actions and Impacts to-date**

Breakout 1: 15 mins for discussion, 10 mins for reporting back

5:20 – 5:50 **Part 4: Review Framework for Assessing Adjustments**

5:50 – 6:00 **Part 5: Public Comment**

Open for public comment or questions

Additional Instructions:

Links to Google Docs for Breakout Sessions:

Reference Materials for Breakout Session 1

Reference Table for Breakout Session 2

MEETING NOTES

Task Force Attendees:

City Staff	*NZTF Members**	
Seth Federspiel	**David Adamian, Greener U**	**Heather Henriksen, Harvard University**
Susanne Rasmussen	**Lauren Baumann, New Ecology**	**Chris Leary, Jacobs Architects**
Carmiya Gale	**Gaurab Basu, Neighborhood Nine**	**Andrea Love, Payette Architects**
	Dave Bisson, Resonant Energy	**Kolin Loveless, Neighborhood Nine**
Consulting Team	**Jane Carbone, Homeowners Rehab**	**Paul Lyons, Zapotec Energy**
Douglas Kot, DNV GL	**Peter Crawley, Cambridge CPAC**	**Rick Malmstrom, Alexandria Real Estate**
Jim Leahy, DNV GL	**Margery Davies, Mothers Out Front**	**Steve Miller, Eversource**
Marie Sorensen, SP	**Henrietta Davis, Cambridgeport**	Ben Myers, Boston Properties
Bryndis Woods, AEC	**Jan Devereux, Green Cambridge**	**Julie Newman, MIT**
	Deborah Donovan, Takeda	**Gabe Shapiro, All in Energy**
	Tom Evans, Cambridge Redevelopment Authority	**Tom Sieniewicz, Cambridge Planning Board**
	Adam Gould, Youth Representative	**Jen Stevenson Zepeda, Climable**
	Eli Herman, Akelius Real Estate	

*Bolded names indicate those in attendance

Notes, organized by Agenda Item:

Part 1: Recap of Meeting 1 with Feedback from NZTF

Overall impressions of the NZAP

- NZTF is concerned that not enough progress has been made and there needs tangible next steps to achieve our goals, as well as clear accountability mechanisms
- Existing building stock needs to play an active role to reduce energy demand on site or in the efforts to purchase renewable energy
- Consider community-wide as well as building-specific solutions and impacts through site/systems analysis
- Additional emphasis should be placed on embodied carbon in addition to operational carbon

NZAP principles:

- NZTF suggests a social qualifier on offsets which can be low or high quality
- NZTF desires to have replicable models and measuring and sharing information
- Embodied carbon should be added as a principle
- [Chat] Aggressively pursuing efficacy and impact should be expressed in the principles
- [Chat] Offsets should be allowed, but not as sole pathway. A mandatory site-based emissions reduction pathway should also be a core principle and goal.
- [Chat] Consider public reporting of emissions as a requirement in the principles
- [Chat] Add strengthening mechanisms for making sure that we are meeting the goals that we have set. Something stronger than having a "commitment to goals." I think it is important for us to be able to track progress frequently, and to have some tools to use to help us keep on track.

Equity:

- NZTF suggests sharing information and funding; want to ensure low income residents have same or greater access to programs as large corporations
- Language about health and related disproportionate impacts needs to be incorporated
- [Chat] Re: principles and equity, while our jurisdiction is the Cambridge community, a regional awareness of policies - whether shifting growth demands or impacting equity issues should be an additional point of reference

Part 2: Review Building Sector GHG Emission Trends

- The highest emissions impact [community-wide] is from the commercial sector and natural gas combustion; electricity consumption has been fairly consistent year over year
- To reach 1.5 degree goal need to cut building emissions in half in the next 10 years
- NZTF concerned that we don't know how clean the grid will be in the future and need to keep an eye on the state's RPS.
- It was noted that Cambridge is also looking at what policies exist at the local level that could influence clean energy supply
- [Chat] Need to address: What's the change in the amount of building stock over the same period? The city has really grown over this same period.
- [Chat] Re: Aggregation - what GHG emission reductions the Community Aggregated Renewable Energy program have caused?
    - While the Aggregation is contributing to the development of new solar generation projects in Cambridge on the order of $350k per year (and ~1000 customers buy RECs to cover 100% of their supply), the main impact to date has been lower costs for consumers. City is currently studying strategies for increasing "additional" renewable electricity in the Aggregation, potentially going to 100% over time, in context of the unclear impact of unbundled RECs as a strategy.

Part 3: In-depth Review of Actions and Impacts to-date

Categories of NZAP actions: energy efficiency in buildings, net zero new construction, energy supply, low carbon fund, engagement and capacity building

- Annual reports contain detailed information about which actions are in progress, behind schedule, or parked. City staff provided an overview of the status of actions which can be found in the tables in the meeting slides.

Review of impact -to-date

- Four actions with enough data to assess; need to consider the lag between when the actions are implemented and when the data is available to analyze
- While we expect emissions trends to turn downward with the implementation of actions in the coming years [including the performance requirements associated with BEUDO], we need to find additional ways to cut emissions to reach our goals.

Breakout Session #1

NZTF members were asked to join their assigned groups and discuss the following questions:

1. Which of the current actions do you think will have the highest impact?
2. Based on current policy or technology trends what updates or actions could be relevant?

Representatives from each group then reported back what was discussed. This included:

Group A

- Items discussed included:

    - a lack of historical data to make informed decisions about which actions to adjust, the urgency of ensuring new buildings are net zero (needs to start well before 2030!)
- Labs need attention; need to advocate and incentivize them to participate in energy programs
- The important role that net zero labs will play, and the importance of air circulation and green, open spaces for the City in the post-COVID landscape.
- BEUDO should address offsets and site energy demand reduction. In addition, resiliency and health impact measurements should be reported to promote action

Group B

- Question 1: BUEDO requirements are key to driving existing building emissions down
- Question of impact of custom retrofit program—is MassSave already providing sufficient information?
    - At least at the small residential scale, awareness is still very limited
- Education is even more important getting into more complex technologies—electrification, etc.
- LCESS is key to delivering GHG-free energy and accomplishing goals
- How do we know (scientifically) what is the best way to get there (and the resulting impacts); is it the TF role or the job of the consultants?
- Electrification of commercial buildings is an important area to address.
- Significant challenge of solving the emissions issue on building by building basis; MIT has a central utility plant and is more centralized, there isn't agreement on what is the most effective action [system level or on an individual basis]

- Question 2: Technology has changed significantly, e.g. GSHP in urban area facilitating electrification of commercial buildings
    - Could accelerate these policies
- Significantly increased focus on equity—changes prioritization
- Think about using carbon fund to advance this, e.g. affordable housing Funding is a key need to allow low-income to overcome up-front costs
- Use housing mitigation funds as model
- Microgrids, Resilience, and Storage

Group C

- Talked about pushing the envelope for labs but don't want to push too hard, don't want people to not want to run their business in Cambridge anymore. In some ways it's better to have old building that uses a lot of energy than new one with a lot of embodied carbon that also uses a lot of energy,
- Electrification and cleaning the grid are important as well.

Group D:

- Discussed the importance of mobilization. Need to mobilize people to take action. Maybe consider income-based subsidies to enable purchasing of 100% renewable energy. The city has a role to play, maybe create a concierge for neighborhoods to promote electricity aggregation purchases. Also need clarification on offsets and how to participate in the CCA program.

Group E:

- Continue to advance BEUDO requirements and can it be accelerated? Unique challenges notes around laboratories and campus', language is drafted and furthering it to meet legal criteria. Planning/targeting first half of 2021 on council's docket. Developing tools to track emissions, fees, compliance, staffing, etc. A business plan has been developed for implementation. We also discussed how compared to 5 years ago many institutions and private businesses are aggressively pursuing net-zero and we should/could be sharing best practices and what is working to leverage/accelerate ideas and adoption of them.
- Role of AI in building control systems and the impact that can have on emissions
- CPAC was tasked with looking at the plan. Some of the initiatives that are behind schedule are: BEUDO performance requirements; reporting - no mandatory requirements; proposed 20% reduction, can be met 100% through purchase of offsets. Also, low carbon energy transition: if we green the grid, clearly that would

have a huge impact on emissions. And, focus on labs, which use over 1/3 of energy demand but have not had a lot of pressure.

Group F:

- Group discussed: How EE in existing buildings has bigger impact on bottom line than new construction but pursuing aggressive new bldg. requirements is low hanging fruit.
  - Ensure new construction is done correctly- easy to require it to be efficient.
  - Focus on encouraging ppl to reuse existing buildings because of embodied energy and pair it with electrification.
  - Don't want to discourage entities like labs from setting up shop
- Based on current Policy or Technology trends where do you see adjustments to actions could be made to further reduce emissions?
  - Residential should also be a focus.
  - Health impacts should also get more focus; how to figure out what largest health impacts are
  - There could be more about resiliency; how does NZAP link to work of resiliency task force?
  - Interesting to watch the conversation migrate from EE to sustainability to resiliency
  - More focus on labs is needed, with teeth. Lets' find out what other net-zero focused municipalities are doing about labs. But don't want to disincentivize innovation.
  - Electrification of a whole building rather than installing new boilers.
  - How to incentivize this? Come up with cohesive messaging. How much natural gas is currently heating and cooling labs? On average labs are 2.5X more energy intensive than commercial office buildings. Due to Covid, labs and other buildings went to much higher percentages outside air. Labs have enormous plug load.

Other thoughts provided by task force members:

- It's important to not push labs too hard, Eversource is localized and will drive what Cambridge can do.
- Eversource has programs that should be made more well known
- Need to broaden reach with NZAP and bring black and brown communities into programs

Part 4: Review Framework for Assessing Adjustments

There are 3 Frames of reference for updates to the NZAP:

- NZAP principles,
- Science, policy, technology, and equity,
- Overall impact considerations and co-benefits

When thinking about adjustments to the NZAP NZTF members need to consider:

- Are actions aggressive enough to reach our goals?
- What is the technical and economic feasibility of certain action?
- What other benefits do the actions have for the community?
- How equitable are the actions?

Co-benefit categories are government and policy development, economic, environmental, health and well-being, climate resilience, and access and engagement. Some are more and some are less important which is also dependent on the audience. Overall think of equity as a lens for who gets the co-benefit.

Breakout Session #2 [due to time, the was conducted as a Group Discussion]

For this discussion, NZTF members were asked:

- What are top priorities for co-benefits?

- Are there other co-benefits that should be considered?
- What are other ways to evaluate the NZAP?

Feedback from NZTF members included:

- Energy costs to property owners is different than the impacts of climate change, the most equitable way to help someone might not be reducing their energy bill but reducing someone else's to reduce future climate change impacts. It's important to remember that the measure of success is reducing climate change impacts.
- Many older buildings could have electric boilers, until BBRS update building codes it will be difficult to make [electrification] a requirement
- Important to look at what it takes to get to net zero, is it worth it to pay the premium for a new building or are there other places worth the investment, look at system not just site level to consider equity in a new way; shared community resources instead of just investing in property owners
- Community solar and ground source heat pumps are good ideas but hard to implement
- Financing is a barrier but there are financiers out there willing to do aggregated financing
- Getting commitment from building owners and a Yes decision is the hard part, point of sale seems like easy solution to force decision that creates an action
    - Consider requiring certain criteria need to be met to sell a home?
    - Consider financing heat pumps through mortgages
    - [Chat] On the home sales required retrofit concept, a first place to look are deed restricted homeownership units were the resale is already regulated
    - [Chat] The value would also be passed on in the form of updated hvac equipment and lower energy costs. And paid off over 30 years is easier to pay for than all at once or over 5 years with a MassSave loan
- [Chat] Reduced housing costs for lower income tenants seems critical as a co-benefit
- [Chat] one thing that sticks out to me is "attainability" for different stakeholders
- [Chat] Employment Growth - ensure that there is equitable access for Cambridge residents to jobs created by the work subsidized through the program. Does Cambridge have anything like the Boston Residents Jobs Policy?

Part 5: Public Comment

None Submitted