

City of Cambridge  
CLIMATE PROTECTION ACTION COMMITTEE MEETING  
7/14/16

Attendance

*Members:* Lauren Miller (chair), Johanna Jobin (vice chair), Ted Live, Sarah Mandlebaum, David Rabkin, Keith Giamportone, Kris Locke, Betsy Boyle, Quinton Zondervan, Keren Schlomy, Rosalie Anders, Marguerite Reynolds, Peter Crawley

*Guests:* Graham Stephens, Meister Consulting Group; Brian Johnson (Green Cambridge coop), Eric Grunebaum, Harry Hintlian

*Staff:* Susanne Rasmussen, Bronwyn Cooke, Seth Federspiel (guest speaker)

ETP Director's Report - Susanne

Trying to do a climate goals dashboard

- Sustainability compact met last month agreed on 3 year work plan, can be shared soon. Set of
- activities that they will now pursue. Renewable energy, transportation, etc.
- Kendall Sq. eco district adopted by Kendall Sq. association! KSA will set up a committee. Betsy: Any large companies? Yes! Non-property owners like e.g. Microsoft. Johanna: but do KSA members know they joined eco district? Unclear. Lots of rebuilding needs to happen, Eco district has not had much org structure, now that will happen through KSA. Now charge, etc. has to be developed. Very promising. Bronwyn: Easier to get funding, now. City gov will be part of Eco district committee. Low carbon energy supply study is moving along. Demand analysis current and future completed, looking at promising strategies for the district.
- Bronwyn has kicked off community wide GHG inventory with consultant GNGBL and MAPC. Project will be done by end of this year. Hoping to standardize methodology, consistent data access across different towns. Also hoping to get regular data access.
- 25 Urban planners from Shanghai delegation this morning visit. Invited Susanne to Shanghai to talk about net zero! A lot of interest in this issue. David: US/China climate conference seems very Boston heavy? Do we get to play? Yes. C40 international carbon neutral cities coalition (originally 40 cities, now more like 80?). Bronwyn: Cambridge doesn't qualify because of population limit requirement (too small). Susanne: We are connecting with C40, trying to create a US network for

cities working on carbon neutrality. Stymied by the Mass. building code! Talking to them about that.

- Submitted comments to board of building regulations and standards asking that latest building code be adopted, that solar ready and EV provisions be included and stretch code be adopted. But some requirements kick in at 100,000 feet, where as ours kick in at 25,000 feet, so that's a huge gap.

Johanna: Met with Austin Blackmon, Boston, corporate council members to explore climate conference. It is organized by US Federal government. We will try to make the most of it, organizing events around it. Will engage nonprofits, etc.

May minutes approved 13-0

Need to schedule the meeting with city manager in fall but uncertainty about who that will be.

#### Climate Goals & Objectives Scorecard - Bronwyn & Johanna

Added new category based on cpac feedback: subjective action status, especially in cases where we don't have quantitative measures.

Update once a year on metrics, and twice a year, spring and fall (aligns with strategic planning). Example: Municipal GHG: metric status: on track (green). Other options are: completed and no data. Action status: on track (green), define next steps (orange), action required (red). Vulnerability Assessment completed (metric), but next steps required (orange).

Double green means no major need for spending time on it for cpac.

Red requires extra effort!

Betsy: where will this live? Is this a public tool? Bronwyn: Should start there, but maybe in future we can add to data dashboard? Susanne: We might be able to create a tab on the CPAC web page.

People are happy with it.

#### Net Zero Action Plan Update & Solar Ready Requirement - Seth Federspiel, Net Zero Energy Planner

FY2016: Green Building requirement: goal is to strengthen to LEED gold + 6, or enterprise Green Communities system.

Third party review process: feedback asked for multiple option: USGBC, split review (initial design and post construction), talking about other options: city do it or outsource? Might not make sense for city to do it, so can we come up with a rigorous, streamlined outside review? Qualifications for reviewer, scope of work, etc. Working with USGBC on that. Susanne: right now it says LEED AP certification is sufficient. Not very rigorous, so trying to improve on that. Certifiability sign off needs to be stronger. A lot of concerns about relying on USGBC process, planning board timing. Peter: Does developer pay the city or the third party? Susanne: Original idea, yes. But the same problem of time deadline (45 days). Should we have a list of pre-approved reviewers? Been spending a lot of time on creating very tight criteria for reviewers and review process. Rosalie: No official certification to qualify people as reviewers? Seth: Yes, that's why we are looking at their job descriptions. Keren: So what's wrong with just a LEED AP? Too easy to qualify! Betsy: Yes, I am LEED AP :-). David: Agency and incentives question: do we want developers to pay reviewers directly or to lay the city to do the review? Are there other models? QZ: How about Inspectional Services? Susanne: there are issues around the city taking on all these responsibilities. Resistance to the city doing it, because of the 45 days. Keith: Universities, state agency: big projects, RFP process, etc. Under a certain size they have a prequalified list of consultant reviewers. Pre-qualify every 3 years, e.g., get RFPs. Susanne: Other issue is that the developer would pay twice, because they are already paying a firm to do their internal review. Also creates a conflict of interest situation because if consultants are working for the city, they can't also work for developers. Johanna: wouldn't want to add another layer of complexity. Susanne: Yes, more similar like licensed site professional. That's where we are probably headed. Johanna: How can we help? Seth: We'd like to get a little further along and come back with a proposal.

Relationship with building code. Waiting for the new state building code, hoping it will be what was proposed. Then need to figure out if there are any gaps between state code and Cambridge green building code, and then if there are any gaps, how do we ensure we are not preempting state? Can we make it more performance based rather than about the building itself? Keith: Are you working with AIA and USGBC on this so you have unity of voice on building code? Susanne: Part of the conversation, architecture 2030, etc. yes, but we want something Joe, already 1 year overdue. But yes, longer term conversation also ongoing.

Alignment with other net zero requirements: insulation setbacks, and solar ready.

#### Rooftop Solar Ready Requirement

Target is 60 MW by 2020, currently at 4.5 MW! Still a ways to go. Goal is to make sure that new buildings are constructed so as to lower barriers to solar installation in the future. Put out an RFP, got a technical evaluation of barriers and how those could be reduced by building requirements. Looking at what other places have been doing. Coming up with potential recommendations (emphasis that these are in draft form! Need

more stakeholder review). Susanne: there are lots of other issues that need to be vetted, e.g. Noise, screening, etc. Seth: also cost benefit analysis.

### Gram Stevens, Meister Consulting Group

Solar ready in California, Oregon, Washington, BC in Canada. EPA guidance, NREL also has published guidance, Natural Resources Canada and International Energy Conservation Code. Mostly concerning new construction:

- Unobstructed non shaded area not facing north (solar zone).
- Size electrical panel for future solar
- Create a roof to panel pathway (conduit or other ways to make it easy)

Cambridge: New construction is ~.6%, 250-300k/year = 1.5-1.7 MW potential. Recent construction has mostly been large commercial and residential. Retrofit potential, somewhat new thinking for solar ready: a lot of flat roofs where orientation doesn't matter, but zoning tends to put AC equipment in the middle so it is not visible from the street, but that causes shading. So shift it to the north side of the building on replacement to open space for solar. Estimate 20-30% over 15-30 years could lead to 3-6 MW/year! Ted: What about trees and buildings shading? Gram: Mostly residential buildings are shaded, but flat roof buildings are as tall as possible, all tend to be equal heights and less shading at those heights. Lauren: But how difficult is it to move AC location? Gram: Needs stakeholder input. Rosalie: Roof replacement coordination? Gram: No, separate issue to replace the roof. Keith: Weight bearing criteria? Gram: 3.5-5 lbs/sq.ft for solar PV, then add wind and snow loads, maybe 10% of buildings couldn't handle it based on technical assessment. Exempt a building if there is external shading. David: But tree growth? Gram: Not that big an issue for flat roofs. Most of the buildings are 100 years old. After 1978 more stringent snow load requirements, but still only 10% can't handle the load. Just require that construction drawings define what loads it can take and have structural review for retrofits. Rooftop orientation only affects sloped buildings, about 15%. But provide a pen orientation trade off design guard. Economic barriers (vs technical): higher installation cost for buildings > 3 stories? Recommend to have some way to do it, commercial installs are Chelsea than residential so that is an opportunity (economy of scale). Consider solar when doing roof replacement. Copper and slate are more expensive for solar, but they last 100 years! Exempt those roofs. Electrical panel: require capacity or breaker slot for residential. Rooftop pathway may non-optimal, so require adding a conduit/pathway. Out of scope, but critical: split incentives, future of net metering. Cost-benefit: increased design and construction costs. Benefits: increase viable solar area. Potential solar PV penetration effect from solar ready: about 50 MW by 2026. 20 MW by 2020.

Proposed Requirements: Solar zone: 40%-50% requirement, exclude small roofs (e.g. Shed). Keren: Trees. Why not just make it solar ready require. Gram: EPA says landscaper look ahead. Summary of feedback: have some evaluation requirements for

e.g. Trees, don't do a blanket exclusion. Rosalie: Common areas pre-wiring vs individual units. What about new technology, will solar look very different in 10 years? Graham: For residential it goes to the panel, for commercial pre-plan where the solar is going to be. Graham: What we've seen is about 1%/year improvement over the last 30 years, with no big leaps. Just need to be prepared for conduits and electrical panels. Sarah: Solar hot water vs solar PV benefit? Graham: have not made that distinction. Ted: Chimneys? Graham: Typically on sloped residential. Only an issue for new construction.

Seth: Getting additional stakeholder feedback from builders, etc. Refining the requirements and proposals. Hoping to get through this in July/August, then develop article 22 zoning amendment proposal. David: Is this zoning or building code? Susanne: we will write it so that it doesn't touch the code.

### Meeting Planning

August meeting or not? 7 planning to be here for August. Susanne and Bronwyn won't be here. John probably would be here. Probably not. But we will make final decision later.

### Member Reports

QZ: Neighborhood Solar launched, open until end of the year!

Sarah: Webinar about building efficiency for urban environment, WRI accelerator? Johnson controls and Milwaukee something?

Johanna: EZRide meeting, understanding their work. They charge companies by square footage. They don't track ridership. Transportation survey through PTDM? QZ: Do an app?

### Public Comment

Eric: Laurence Berkley report on real estate value benefits of solar: \$20K. Landlords can charge for electricity to get around split incentives. Flat roofs generally need ballasted installations, so that will affect the weight issue. There are tons of flat roofs! Biggest low hanging fruit.

Q: Life expectancy of solar panel and starting efficiency and attenuation? A: Warranted for 25 years, lose about 1%/year.

*Notes by Quinton Zondervan*