

**Newton Citizens Commission on Energy**  
City of Newton

<http://www.newtonma.gov/gov/building/projects/energycomm/default.asp>



**Ruthanne Fuller**  
Mayor

Halina Brown (Chair), Stephen Grody, Michael Gevelber, Asa Hopkins  
Jonathan Kantar, Jon Klein, Ira Krepchin, James Purdy (Vice Chair), Puja Vohra,  
Ann Berwick (*ex-officio*)

Advisory Members:

Cory Alperstein, Fred Brustman, Edward Craddock, Brant Davis,  
Philip Hanser

Newton City Hall, 1000 Commonwealth Avenue  
Newton Centre, MA 02459

**Minutes of the Meeting of January 23, 2019**

Present: Halina Brown, Stephen Grody, Michael Gevelber, Jim Purdy, Jon Kantar (JK) Ira Krepchin; Fred Brustman, Ed Craddock, Jane Hanser, Kathy Pillsbury, Dan Ruben, Jennifer Steel

The Commission members all agreed with Halina's suggestion that we should do something to recognize Eric Olson for his years of distinguished service on the Commission; she will take the lead.

The minutes for November 2018 were approved.

**1. Discussion of how the CAP-related work we are doing and that done by MAPC will be coordinated and then translated into one set of policies and actions at the City level**

HB and JP are providing liaison to MAPC, which is preparing a five year CAP under contract to the City. Jennifer Steel is the City's project manager.

HB: The MAPC 5-year plan and NCCE's 30-year plan need to harmonize, and we need to explain how the two plans relate.

MG: Even if they can't be harmonized it's still OK.

HB: MAPC has produced drafts on guiding assumptions scope and goals; an introduction; and chapters on existing buildings and new buildings. Chapters are forthcoming on transportation (due this week), clean energy (next week), resources and waste, and roles that the City should play, e.g., advocacy.) The plan will also include criteria for evaluation of progress and who implements each action.

There will be a March 21 public workshop for feedback on the first public draft.

JS: We need to decide how we package this. Should it include vignettes? For example, a future day in the life of a Newton parent and how they relate to the CAP and climate change.

SG: you could shoot a video illustrating this vignette.

JP: Who produces the vignettes? HB: this can feed into the NCCE plan.

JS: City intends to increase effort on the zoning design to incorporate the CAPs.

JK: I talked to James Freas some time ago about getting the necessary input from the CAPs into the current zoning redesign and explain the opportunities.

JS : now's the time to revisit that conversation. Sasha Shyduroff of the Planning Department is heading up the zoning review.

HB will take leadership on NCCE coordination with zoning.

HB: We are making a growing list of ordinances/zoning provisions that could be incorporated into the zoning ordinance.

JP: We talked about this briefly with MAPC at one of the meetings.

JS: There will be a presentation on the MAPC CAP to the Zoning and Planning Committee on 1/28.

JK: the ad hoc committee of volunteers ("vCAP") produced an outline of early action items in spring 2018. It may be tough for MAPC to be place-specific with their limited knowledge of Newton, e.g., need to define borders between areas at village centers and neighboring areas. MAPC will include examples from other municipalities.

HB: We could provide a list of CAP recs that need to be reflected in zoning.

JS: The City will provide MAPC with a list of the chapters and subchapters of the new zoning.

MG: Will NCCE have a chance at the March 21 meeting to present our ideas and recommendations? SG: It's not about merging the content of the two plans, but rather a chance to present our work at the same meeting

JS: the workshop is to provide MAPC with feedback on the plan they are preparing.

SG doesn't see how valid feedback can be gathered at a workshop.

JK: the data shows that we need 600 electrifications per year to meet our 2050 goal for greenhouse gas reduction. We need to start the curve now, to keep from pushing too many off to the future.

SG: MAPC needs to express Jon's idea in their report

HB: We need further conversation about the 3/21 meeting.

JP: We need to explain on 3/21 how the plans relate – 5 year and 30year. NCCE's plan could be summarized in a page of bullets.

## **2. Information on Green Newton's Green Building Standards Committee**

Dan Ruben is Chairman of the Green Newton Board of Directors. He provided information on GN's Green Building Standards Committee. The committee has been meeting since December to develop a set of principles that Green Newton will use to advocate for better buildings and to decide on which development projects to support.

The four principles are:

1. Minimize building operating energy, using the PassiveHouse standard.
2. Minimize embodied carbon in the building materials used.
3. Buildings must be all electric, with no connection to the gas grid.
4. Minimize the carbon footprint for transportation to and from the buildings.

We have met with Mark Development about their Riverside project and with Northland about the Marshall's Plaza project.

Dan contrasted the scale of GN's effort with Boston's CAP: big budget, big staff, many consultants, many funders. Boston will roll out its plan on January 28 at the Museum of Science. Boston's key recommendations are:

- deep energy retrofits of older buildings
- electrification of everything
- green the electrical grid

JK: Deep energy retrofits have been tried, but costs are high, e.g., a new envelope surrounding the existing building.

The utilities are stakeholders in Boston's plan.

The least important measure in Boston's plan is PV on roofs.

Other Boston recommendations include:

- smart buildings,
- transportation mode shift out of single occupancy vehicles, congestion or VMT fees.
- waste plan zero energy

EC – the rubber hits the road on implementation, so it will be interesting to see how Boston accomplishes that.

JH – does the City use green concrete for sidewalks, etc.?

DR – there is a Passivhouse office building in Auburndale (Auburndale Builders' small office building.)

MG: the same principles are being used by the organization called Architecture 2030.

MG: how are these four principles going to be used at the City level?

SG: where can we read about this? Just send the url to everyone.

<https://www.greennewton.org/advocacy/10655-2/>

### **3. Progress Update on NCCE's Climate Action Plan**

MG presented an energy model for vehicles and home heating, which is the basis for projecting energy and GHGs in the two biggest sectors of Newton's carbon footprint.

Transition to EVs is the biggest leverage point for reducing Newton's carbon footprint because people in Newton trade in their car for a new one every 9 years and the cost of a new EV falls in the range of ICE cars and is trending down. And EVs are so energy efficient that they don't strain the local grid.

Heat pumps work well, but currently it costs on the order of \$25K to convert a house to air source heat pump: this is substantially more than the cost of replacing a conventional furnace or boiler. The operating cost is also higher, given the current prices of electricity and natural gas. State APS (alternative portfolio standard) incentives apply to heat pump installation, but need to be increased to make up for this cost differential.

Electrical demand would increase substantially (a factor of approximately 3 times current demand) under these scenarios for EV and especially conversion to heat pumps, but the utility seems to be unconcerned, probably because they don't believe that transition on this scale will actually occur.

SG: If the utilities don't believe the change will be very big, they may be more willing to provide a price incentive to increase marginal consumption.

EC pointed out that heat pumps also provide air conditioning, so apples to apples comparison needs to consider the capital cost of A/C.

SG: the challenge in these societal changes is the first few percent.

How much will utilities put in to drive these conversions up? SG: maybe the utilities could be negotiated into offering substantial incentives if they underestimate the number that will actually occur. MG, but look at their incentives to encourage EVs, which are limited to supporting some public charging stations. This is not a significant incentive, and the incentives needed for heat pump conversion need to be bigger.

Cadmus has excellent studies on electric building heating that find that air source heat pumps work well in the winter in our climate zone (but need to keep the condensers clear of snow.)

HB: The Newton assessors see about 800 housing units changing hands per year. About 100 are teardowns involving new construction. So, say there are 650 net changes in ownership of existing units. If the cost of conversion to heat pump is \$25K, and the housing unit costs \$800K to \$1 million, then the marginal cost of heat pump conversion is only 2.5 to 3 percent of the purchase price. This is an opportunity to make these conversions happen.

So, we should set a goal to convert x% of existing homes that change hands every year, and we should consider how to provide incentives to make that investment at the time of sale. This would roughly match the number of heating system conversions and weatherizations that Jon Klein's model says are needed to meet the goal for 2050.

#### **4. Activity on incentives for electric vehicles.**

Not discussed.

The meeting was adjourned at 9:00 pm.

Respectfully submitted,

Jim Purdy