

Newton Citizens Commission on Energy

City of Newton

<https://www.newtonma.gov/government/climate-and-sustainability/citizens-commission-on-energy>



Mayor Ruthanne Fuller

Halina Brown (Chair), Michael Gevelber, Stephen Grody, Philip Hanser, Asa Hopkins,
Jonathan Kantar, Jon Klein, James Purdy (Vice Chair), Puja Vohra,
Ann Berwick, William Ferguson (*ex-officio*)
Advisory Members: Cory Alperstein, Fred Brustman, Beverly Craig, Philip Vergragt

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Newton Centre, MA 02459

Minutes of the Meeting of April 27, 2022

The meeting was held on Zoom.

Attending: Halina Brown, Michael Gevelber, Stephen Grody, Philip Hanser, Jon Kantar, Jim Purdy, Cory Alperstein, Philip Vergragt; Jon Slote, Jay Snyder, Mark Webster, Leslie Zebrowitz

1. BERDO

Halina summarized the status of BERDO. She talked with Bill Ferguson recently; the City's staff working on BERDO meets weekly; (Michael Gevelber has attended in the past, and Halina intends to do so.) Bill is planning outreach sessions to building owners, beginning mid-May. He envisions eight sessions.

Key decisions need to be made on what the ordinance will comprise.

1. What size buildings are to be covered? (Boston's BERDO includes buildings of 20ksf or larger; the compliance schedule for buildings of 20-35 ksf is longer than for larger buildings.)
2. Are residential apartment buildings to be included? Yes, above a size yet to be determined. There would likely be exemptions for some types, e.g. affordable or assisted living.
3. Whether to limit RECs for Alternative Compliance Payments to Class 1 RECs. (The ACP cost in Boston is \$234 per ton of emissions) A virtual power purchase agreement (VPPA) might offer a middle alternative.

Bill wants to make decisions on these matters in 2 weeks or so (i.e., mid-May 2022).

Bill will need our help to reach out to building owners. Jon Klein is no longer involved, but we need follow up with Taurus, which he initiated with Jon Kantar.

An owner of rental properties in Newton, Dante Capuso, has told Bill that he wants to be helpful.

Halina asked for a volunteer to join her and Jon Kantar to follow up with Taurus.

4. What to do with the money in the ACP fund?

When these decisions are made, Bill will focus on outreach and Ann Berwick will be in charge of drafting the BERDO ordinance.

Bill expects March 2023 Council action, with the BERDO ordinance to become effective in 2024.

Councilor Deb Crossley has asked Bill for an update to the Zoning and Planning Committee; he is preparing to do this in late May.

Deb presented the City Council with a resolution to support more work to develop BERDO; it passed unanimously except for one Councilor who did not vote.

Watertown is also pursuing a BERDO; a Newton Planning staff member lives there and is involved.

Philip Hanser reported on his discussion with Heather Takle of Power Options – nonprofit that sets up virtual power plan agreements, which are called “Contract for Differences (CFD)” In such a contract the buyer pays difference between a set price and the market price of electricity.

It needs to be determined whether Newton’s BERDO will permit VPPAs for non-New England renewable power. It is generally cheaper to purchase renewables from out-of-state suppliers. Pros and Cons exist: does a non-New England VPPA incentivize further development of renewables?

Jim suggested talking to Larry Chretien at Green Energy Consumers Alliance, who has worked in the area for many years and prefers local suppliers in order to incentivize development of more renewables.

Other issues will need resolution; Heather warned that ISO-NE is not likely to be much help.

Michael addressed the difference between VPPA vs. REC: the basic difference is that VPPAs are longer term, allowing costs to be financed. Owner-occupied buildings are generally more comfortable with long term agreements for renewable power, but commercial owners are likely to be less comfortable.

It is not clear whether new renewable generation facilities are added to the grid as a consequence of these agreements.

The Charles River Chamber recently held a program about how Newton should meet its climate goals – but Michael felt that the program wasn’t very helpful.

Chamber president Greg Reibman says he doesn’t really know exactly who the building owners are who would be interested in BERDO, but he thinks new buildings will be much easier to do than existing buildings. Susan Albright also attended; she asked what the compliance costs would be, but they had no answer.

Heather Takle said owners in Boston know the costs, but how do we find these people? Boston University is one of the top 10 owners, but Michel says that they don’t really know what their BERDO costs will turn out to be.

Michael said, a woman at the Chamber event asked why Boston’s BERDO has been successful? The answer is partly because Boston ran a good process. Newton needs to identify interested owners in both Boston and Newton.

Michael showed spreadsheet of Newton buildings by size and ownership, and their % GHG emissions; he is looking for macro trends. A handful of buildings account for much of the GHG: non-residential

buildings have the larger share of emissions; so maybe address those first and fold in the residential buildings later; (there are several types of residential, e.g. assisted living vs. market residential).

With 70 building owners, we could address 18-19% of emissions.

Stephen said he sees some false dichotomies. Everyone shares responsibility to make progress; it might be better to go after the big commercial buildings and then have a couple of subsequent phases for smaller commercial buildings, and then a phase for residential buildings.

Michael said Bill is thinking along these lines.

Boston created compliance standards, which is the key; it puts people on notice. There should be phased implementation, and owners should understand how they fit into the plan.

What will it cost? Michael showed the Boston University compliance schedule analysis. Standards tighten every five years. In Newton 40% of emissions are due to electricity use, so those can be more cheaply complied with; then need to address more expensive issues of heating/cooling (which is planned for 2040 for BU).

Boston's ACP is \$234 per metric ton of CO₂ equivalent emissions; electrical decarbonization costs on the order of \$50 per ton. We need to investigate long term VPPAs.

The cost to convert to heat pumps (200-300 tons for large buildings) – works out to around \$100/metric ton.

Jon Kantar noted that we're talking about heat pumps in the late 2030s, so who knows what the prices will be.

Japanese heat pumps are very good (e.g., Mitsubishi) for homes and small buildings; Aeromac (Italy) is aiming at the large building market.

Bill wants to plan a road show in May to answer questions about BERDO. Halina asked, should NCCE make specific recommendations in a memo to Bill? The consensus is yes, we will. Phil Hanser said we should suggest to Bill that it is difficult to combine education and selling in a single meeting, and we should plan accordingly. And we need to provide help with the road show.

Jon said we need to get a building owner on board for this; he suggests approaching Peter Megrian from Taurus. Jon said we could also give Bill some talking points for his use. Halina agreed and will offer to help polish Bill's slides.

2. Embodied Carbon

Mark Webster is a structural engineer who has been working on embodied carbon in buildings; he heads a sustainability committee of structural engineers and is a member of the Green Newton Building Standards Committee, where Russell Feldman, Bev Craig, Liora Silkes, and Mark are leading this effort. He gave a presentation on "Embodied Carbon 101" to the ZAP committee last Monday and repeated the presentation for NCCE.

Embodied carbon refers to the emissions that are entailed in building construction, primarily in materials like concrete and steel. Building energy can be analyzed in several stages from materials extraction and production, construction, operation and ultimately demolition

In modern buildings embodied carbon outweighs carbon emissions in first 20 years of building operation. Concrete is the dominant component of embodied carbon. It can be reduced through procurement specs to limit materials with high carbon content. A number of substitutes have less embodied carbon without diminishing strength and performance. Mark designed a Westborough church that achieved around 40% reduction from a baseline for embodied carbon in this building type.

Embodied carbon is already being regulated. Buy-Clean California has established caps on various structural materials – demanding better than average industry practice. As of March 2022 federal procurement regulations address carbon in concrete. Brookline MA targets a 10% reduction in concrete carbon for town projects. Cambridge and Boston also have requirements.

Mark will be meeting with Newton’s EDC, and the Charles River Chamber. Jon suggested that Mark should talk to Building Commissioner Josh Morse.

Cory asked, will embodied carbon be addressed in the Massachusetts building code/stretch code? Mark said yes, and in Newton there will be zoning requirements for buildings of 20 ksf or more and there will be higher requirements for buildings larger than 50ksf.

Cory asked about hempcrete. Mark said hempcrete is an insulation material that works very well.

Michael asked, how close are you to a set of specs that Newton could adopt? Mark said he is working on a package of recommendations. He noted that it is virtually painless for builders to use lower carbon concrete.

Mark would like NCCE’s support. Jon Kantar said we need to be ready to strongly support this effort, and all present agreed.

3. Opinion Survey Results

Jon Slote presented results from the survey conducted by him, Phil Vergragt, and Bob Persons.

He said that the sponsorship of NCCE and the support of the Mayor was much appreciated and helped get more people to participate.

The survey went out at the end of March; he, Philip, and Bob are now analyzing results and putting presentation together

They aimed at getting a cross-section of opinion in Newton, and received responses from every Newton zip code. Half of the 178 respondents opted to participate in follow up.

The response was good in all but the 24 or younger age category. 62% of respondents were female. 76% live in single family dwellings.

In general, the respondents are less concerned with personal harm than global concerns. In the “Six Americas model” developed at Yale, Newton respondents are in the “mostly alarmed,” category.

Leslie – agrees with Cory ‘s comment that people don’t need to feel personally threatened in order to motivate them to take action. But Jon said, feeling personally affected may be more important than people acknowledge in motivating action.

Cory said, other surveys indicate that many of the most alarmed disagree that it is up to behavior change and individual initiative to address the problem.

Halina said, but cost is about priorities, not simply whether a household can or can't afford to invest in home improvements to reduce GHG emissions.

Michael said, the cost issue is very important. But what do owners really understand about their energy cost vs. all other costs? They generally can't put the costs in context. So we need to educate people about these issues.

Cory said, the other big aspect is advertising and greenwashing by utilities. That is all baked-in to people's attitudes.

Leslie commented that for EVs, we can promise lower operating costs, but the costs are different for heat pumps.

Philip Vergragt said they would like to hear proposals from NCCE people as to what to do to motivate action.

Stephen disagreed with Cory on how cost works – choice sets and people's price insensitivity regarding their capital vs non-capital costs are important factors motivating action/non-action, both categorically and in terms of magnitude. People need both resources at their disposal and the willingness to spend them on this issue.

Leslie commented that choice sets should include both getting money back on their investment, but also matters like a better world for one's grandchildren. So motivations go beyond return on investment.

Philip Hanser said he would like to have assurance that the survey results fit the citizenry at large, since participants in the survey were self-selected. We need to get the segment proportions correct. Also, he thinks some issues aren't framed quite right – e.g., cost when the furnace breaks down, do you minimize expense to get it working again, or pay more for a better solution. But on cost recovery, he thinks recovering capital investment isn't a big factor in most people's decision-making.

Jon Kantar commented that people are often motivated by concerns about changing technology rather than its cost per se. In his experience as a home builder, customers' first impression is that new technology like heat pumps would cost more to install, and they worry about issues that might crop up in the future. So we need to help contractors and vendors to give advice that goes beyond the risk of trying something "new". And people have sometimes had problems that weren't anticipated when heat pumps were not properly installed.

Michael asked, what about people who say "what I do won't really matter"? Jon Slote said, yes, there is a percentage of those responses. Halina thinks this issue is similar to people's voting behavior.

LZ – looking for an air-to-water heat pump system for a vacation home.

Jon Slote said that when he had a heat pump system installed in his home, there were problems – eventually solved - in balancing the air flow. So people's concerns are sometimes realistic.

The meeting was adjourned at 9:15 pm.

Respectfully submitted by Jim Purdy