Newton Citizens Commission on Energy
City of Newton, Massachusetts

http://www.newtonma.gov/gov/building/projects/energycomm

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Dear Newton City Council Members,

As you know, the Intergovernmental Panel on Climate Change, IPCC, just released its Sixth Assessment Report. The IPCC is a collaborative effort of dozens of internationally leading scientists. These scientists regularly analyze the research results on the current and past state of the global environment, model future trends under several scenarios, and then translate their findings into reports intended for policymakers and the public. Since the First Report's issuance in 1990, the power and sensitivity of the models, and the body of research that feeds them, have greatly improved. As a result, the Sixth Report is less uncertain about past trends and future predictions than the previous five IPCC reports.

The findings of the Sixth Report are dire. The climate is changing faster than previously thought, and the consequences – those visible today and those that will follow – are alarming. Below, I highlight some of the critical findings of the Sixth Report. We have run out of time to prevent many consequences, but we can still mitigate the direst consequences if we act now. There is a near-linear relationship between cumulative CO2 emissions from human activities and the global warming they cause. Each 1000 GtCO2 increase in cumulative CO2 emissions induces an approximately 0.45°C increase in average global temperature. That means that every averted ton of CO2 counts.

What does this mean for Newton? First, we can contribute to the necessary global action by reducing our emissions. Since the City Council unanimously adopted the Climate Action Plan in December of 2019, I have heard a variety of voice, some more determined to act, other less. I heard that we in Newton cannot meet the stated goals of the Climate Action Plan without a significant action at the state level. It is indeed so, to a certain extent. That is why I think that the recent Massachusetts Climate Law is an important legislative achievement, as it will hopefully enable Newton to adopt a net-zero stretch building code. In addition, the electrification Home Rule Petition currently on the Council's agenda will enable Newton to require electric heating in all new construction in the near future. Our remarkable Power Choice electricity contract will give a true meaning to this electrification effort.

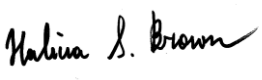
But there are other actions that Newton can and *must* take which do not require the state's help and in fact have a better chance of success at municipal level. Among those, reducing greenhouse gas emissions from our existing buildings, both residential and commercial, is the principal task ahead. Buildings represent the most significant source of our greenhouse gas emissions. Newton must create powerful incentives for building owners to retrofit their buildings using generous Mass Save subsidies and electrify them whenever feasible. I want to stress the

retrofitting component: electrifying leaky inefficient buildings is a waste of resources and is equivalent to putting the cart before a horse. The Newton Climate Action Plan urges the right actions with its slogan “Use less and green the rest.”

Upgrading buildings is a difficult challenge. But there is a large body of knowledge on what motivates individuals and organizations to guide us in developing effective incentives. *I therefore call on the City Council to work with the Administration and the Newton Citizens Commission on Energy to develop an effective plan for upgrading our building stock.*

I have also heard that whatever we do in Newton is a drop in the bucket of global needs, and our action will make no difference. My first response: We could say the same about casting a vote in a democratic election, but we also know that millions of such “insignificant” individual votes determine election outcomes. Newton is but one of millions of municipalities across the world, and our vote counts. My second response: Whatever happens on the world stage, we in Newton must be able to look into our grandchildren’s faces and at least say that we did our best.

Sincerely,



Halina Brown
Chair, Newton Citizens Commission on Energy

Highlights from the Sixth IPCC Report.

- It is now unequivocal that human activity has warmed the atmosphere, oceans and land. 2011– 2020 averaged 1.2°C higher global surface temperatures than in 1850–1900, with the most significant increases over land (approximately 1.59°C). Human activity has contributed to the observed surface melting of the Greenland Ice Sheet over the past two decades. Anthropogenic CO2 emissions are the primary driver of the current global acidification of the open oceans’ surface water.
- What was once a possibility has now become a certainty: human activity-induced climate change is already affecting many weather and climate extremes in every region across the globe. Observed changes include increases in the frequency of 1) concurrent heatwaves and droughts on a global scale, 2) fire weather in some regions of all inhabited continents and compound flooding in some locations, 3) heavy precipitation, 4) agricultural and ecological droughts, and 5) the proportion of intense tropical cyclones. We have also seen reductions in Arctic Sea ice, snow cover, and permafrost.
- Global surface temperatures will continue to increase until at least the mid-century under all emissions scenarios considered. Each 1000 GtCO2 increase of cumulative emissions likely induces a 0.27°C to 0.63°C increase in average global surface temperature, with

the best estimate at 0.45°C. Thus, global warming ceilings of 1.5°C and 2°C, stated in the Paris Agreement, will be crossed during the 21st century unless deep reductions in CO2 and other greenhouse gas emissions occur in the coming decade. Under every scenario considered, by 2040, global warming will cross the 1.5°C threshold. By 2060, we will cross the 2°C global warming threshold.

- Many changes due to past and future greenhouse gas emissions are irreversible for centuries to millennia. For example, mountain and polar glaciers will continue melting for decades or centuries. Likewise, Greenland Ice Sheet will most likely disappear, and the loss of permafrost carbon is irreversible.
- By 2100, the global mean sea level will rise by 1.4-2.5 feet relative to 1995-2014 under the intermediate GHG emissions scenario and by 2.1-3.3 feet under the very high GHG emissions scenario. (Close to home, we are already seeing the early wave of these effects in the recent winter flooding episodes in Boston and the New York City subway system).