



July 5, 2021

To the Chair and Councillors

Infrastructure & Environment Committee,

RE: IE 23.1 Net Zero Existing Buildings Strategy

We first wish to recognize the excellent work of city staff in preparing the report and recommendations in front of you today. **We support these recommendations which will move the City's climate work forward in very significant ways.**

I will provide an overview on the urgency for climate action, and the co-benefits of acting NOW. Two additional speakers from ClimateFast will address specific points in the report.

CLIMATE CHALLENGE

We now live in a world with 417 ppm of CO₂ in the atmosphere, relative to the 270 ppm that were in the atmosphere at the beginning of the industrial age. Please keep in mind that humans have never lived on a planet with this level of CO₂. A maximum safe level for a livable climate might be 350 ppm, a figure based on testimony by NASA scientist James Hansen.

We are very quickly approaching tipping points for extreme temperature rise which we will be unable to control. Above an average 2-degree temperature rise across the planet feedback processes will be set into motion that the next generation will not be able to reverse.

We are living in the very few years, this current decade leading up to 2030, in which we can put in place measures to drastically reduce emissions and head us in the direction of zero (or net zero) emissions by 2050 or ideally much earlier. Thus the actions we take now are extremely important.

IMPACT OF CLIMATE INACTION

This week we have seen the results of climate inaction in terms of the increasing temperatures and extreme weather, and fires in BC. The impacts of the 'heat dome' descending on the region resulted in hundreds of deaths. There is a temperature beyond which the human body cannot survive. Known as the 'wet-bulb' temperature, it's a combination of heat and humidity that leads to death. This has implications for Toronto. We are a city in which thousands of buildings are not temperature controlled leaving residents vulnerable to extreme heat. The risk of power outages compounds this risk as not even fans would be operating to provide relief.

Taking pro-active steps now will prevent suffering later.

We very much appreciate the work by staff in the recommendations you have before you and we also recommend for your attention the Efficiency Canada report, Canada's Climate Retrofit Mission.*

It shows the following:

DEEP RETROFITS ARE ESSENTIAL

Unless we have an effective integrated model of planning and delivery we risk having piecemeal shallow retrofits rather than the mass deep retrofits that are required to meet emissions reduction targets.

RETROFIT IMPLEMENTATION MUST SCALE UP

According to the Efficiency Canada report we are currently retrofitting fewer than 1% of buildings annually, and it would take 142 years at the current rate to retrofit all our buildings.

To retrofit all our buildings in 15 – 30 years would require between 5% and 12% of building stock to be retrofitted annually. This is a huge increase in the pace of retrofit, therefore it is important that we get this program right and that we implement it without delay.

City Council declared a climate emergency in October of 2019 and indeed we do face a climate emergency.

In this report the authors describe the 15 year pathway (rather than 30 years) as the 'emergency' pathway. This would require starting with 2% of buildings retrofitted annually ramping up to 12% of building stock by 2029 to reach the goal of 100% completed by 2035. We believe that this emergency pathway is called for due to the immediacy of the climate threat, and we note that the 15 year pathway offers many benefits. It will be a much quicker path to a safer, healthier and more climate-resilient city where communities will be better prepared for extreme weather events brought on by climate change.

The pathways described in this report emphasize a number of important principles including:

- Making the retrofit experience simple, affordable and desirable for building users
- Performance guarantees that take the risk of construction and financing away from the consumer
- Coupling retrofits with other improvements such as to landscaping and community gardens
- Avoiding the 'boom and bust' cycle of reliance on incentive programs
- Transforming the 'atomized market approach' to an integrated model combining many buildings into large-scale retrofit projects.

HEALTH, SAFETY AND JOBS CO-BENEFITS

There are many co-benefits to taking action to reduce greenhouse gas emissions, and specifically an ambitious retrofit program. In addition to improved indoor environmental quality, building durability and resilience against extreme weather, we will see a reduction in energy poverty and the creation of thousands of good jobs.

You have before you an excellent report on meeting the challenge of reducing building emissions in line with the city's commitment to emissions reductions. Every recommendation in this report should be implemented.

For the future,



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REFERENCES

Toronto Star: 3400 apartment buildings without air-conditioning

<https://www.thestar.com/opinion/star-columnists/2021/06/30/toronto-is-in-no-shape-to-contend-with-a-deadly-heat-dome-like-the-one-in-the-west.html>

Globe and Mail:

“Canada is currently moving at a pace where retrofitting all of its existing low-rise residential buildings – getting them off fossil fuels, and making their electricity usage as efficient as possible – would take approximately 142 years. Retrofitting all commercial space would take about half that time, which would still be nowhere near the 2050 target for the country's carbon footprint to reach net zero.”

<https://www.theglobeandmail.com/business/commentary/article-the-case-for-a-rethink-of-how-canada-is-retrofitting-its-buildings/>

EXTREME TEMPERATURE

<https://www.theguardian.com/environment/2021/jul/02/canadian-inferno-northern-heat-exceeds-worst-case-climate-models>

Limits to survival:

<https://advances.sciencemag.org/content/6/19/eaaw1838>

INSTITUTE OF CLIMATE CHOICES: The Health Costs of Climate Change

<https://climatechoices.ca/reports/the-health-costs-of-climate-change/>

INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC)

Climate Tipping Points: Intergovernmental Panel on Climate Change

<https://www.theguardian.com/environment/2021/jun/23/climate-change-dangerous-thresholds-un-report>

INTERNATIONAL ENERGY AGENCY: Net Zero by 2050: A Roadmap for the Global Energy Sector

<https://www.iea.org/reports/net-zero-by-2050>, Flagship Report, May 2021

FOSSIL FUEL EXIT STRATEGY

<https://indd.adobe.com/view/e0092323-3e91-4e5c-95e0-098ee42f9dd1>

***EFFICIENCY CANADA: Canada's Climate Retrofit Mission**

Why the Climate Emergency demands an Innovation-oriented Policy for Retrofits

by Brendan Haley and Ralph Torrie, June 16, 2021

<https://www.energycanada.org/wp-content/uploads/2021/06/Retrofit-Mission-FINAL-2021-06-16.pdf>