HAMILTON COMMUNITY ENTERPRISES

May 31, 2022

General Issues Committee

City Council

City of Hamilton

RE: HCE Written Delegation to Draft Community Energy and Emissions Plan

HCE is pleased to support Hamilton's draft Community Energy and Emissions Plan ("CEEP") that is being presented to Hamilton City Council's General Issues Committee on June 1, 2022.

It's an impressive body of work led by dedicated city staff in consultation with the wider community. Everyone involved deserves our thanks and appreciation. It offers a pathway for Hamilton to transition to a net-zero future and achieve the required carbon reduction. But, most importantly, it builds on Hamilton's prowess as a hub for manufacturing, energy innovation, citizen engagement, and environmental sustainability as pillars for enduring success.

HCE was founded in the early 2000s with the deregulation of Ontario's electricity sector with a mandate to reduce Green House Gas emissions ("GHGs"). HCE is owned by the City of Hamilton and governed by an independent Board of Directors, and has grown to become a utility solutions provider in the non-regulated energy and telecommunications markets. HCE designs, builds, operates and maintains critical community infrastructure, including district energy networks, renewable energy systems, and internet and metro area fibre networks.

HCE has become an expert in delivering kilowatts, kilojoules, and kilobytes — the currency needed to power our lives in the digital age and is well placed to play an increasingly active role in climate change mitigation and adaptation.

Presently, GHGs attributable to buildings account for 28% of Hamilton's emissions profile. This comparatively low value is a function of the massive GHG emissions associated with Hamilton's industry and, unfortunately, is not a result of better buildings. As Hamilton's industry decarbonizes (as it is committed to doing), if nothing is done to address building-related emissions, GHGs attributable to buildings in Hamilton will grow to roughly 45% ~ typical of other GTHA cities. Building heating in Hamilton and elsewhere must be decarbonized to meet Canada's climate action goals.

A study performed by the Hamilton Chamber of Commerce released in 2021 identified enough residual/waste thermal energy from Hamilton's industrial

bayfront to reduce Hamilton's building sector carbon footprint by 200,000 tCO2e/year through an expanded district energy system.

The study affirmed that key local stakeholders — including leading manufacturers, developers, and the municipality — are keen to explore this pathway to transform Hamilton's energy landscape, create a market for residual/waste heat, and significantly lower regional GHG emissions in Hamilton's building sector. Communities must harvest these large quantities of industrial residual/waste heat routinely released to the atmosphere and watersheds (studies show that upwards of 60% of industrial energy is "wasted," including energy produced by burning fossil fuels). Cities must use this heat to reduce GHGs as well as the added burden on electrical generation, local and regional power grids and distribution systems, as markets "electrify."

While the shift to decarbonization will create many challenges, it will also provide opportunities, especially on two related fronts:

- Building smart, low-carbon integrated energy networks needed to support mass electrification destined to transform the GTHA and beyond; and,
- Harvesting industrial residual/waste energy so we can put it to use heating homes, businesses and institutions.

HCE believes it's all about minimizing the impact of climate change by maximizing the value of every unit of energy, and this is only made possible through collaboration and connectivity.

That's why HCE is so pleased to be actively involved in developing the CEEP Climate Action Strategy and is equally excited to see many actionable solutions that HCE and others proposed threaded throughout the plan, including:

1. Working arm in arm with manufacturers — the lifeblood of our local and regional economies — supporting their march toward a low-carbon future;
2. Engaging multiple parties — including utility providers — to imagine and implement integrated energy systems designed to meet tomorrow's energy needs without burning more fossil fuels;
3. Leveraging Hamilton's existing renewable energy assets, including HCE's district energy systems, to encourage fuel switching and decarbonize space heating;

4. Developing policies and standards that promote improved energy efficiency in the buildings sector, including opportunities to connect to thermal networks; and,

5. Partnering with manufacturers to harvest their industrial residual/waste heat as the backbone of a low-carbon thermal network designed to drive sustainable development and ensure energy resilience and security.

HCE has a vision that by 2050, Hamilton and other parts of the GTHA will have a low-carbon green thermal corridor that transports industrial residual/waste heat harvested across Hamilton's Bayfront Industrial Area to densely populated demand nodes in Hamilton and beyond for building heating. This green thermal corridor will be a vital component of an innovative, next-generation Integrated Community Energy (ICE) network — smart, innovative, digitally-enabled, and efficient. This network, designed to scale up in multiple phases, will grow to serve existing and new buildings. It will offset the need for incremental electrical generation capacity and the associated electrical transmission and distribution upgrades that would otherwise be required to decarbonize space heating through electrification. It will also help ensure that the expansion of low-carbon district energy serves the building boom in Hamilton and other parts of the GTHA. This initiative will create a market for industrial residual/waste heat, an enduring by-product of steelmaking and other manufacturing processes in the industrial zone. Best practices from Scandinavia and other regions will be incorporated to ensure the viability of large-scale district energy systems fuelled by industrial residual/waste heat. Hamilton will become a lighthouse example of this sustainable approach to decarbonizing space heating and cooling in Canada.

HCE is working with the City of Hamilton, the Hamilton Chamber of Commerce, HIEA and BACCC, as well as many others to determine the feasibility of a low-carbon thermal corridor with the potential to serve all parts of our city and beyond. In addition to its environmental benefits, the proposed "green thermal corridor" would help attract and retain local business, boost building permits, provide jobs, and generate tax revenues.

Seeing this transformational opportunity featured in the CEEP Plan is exciting and encouraging as it could bring low-carbon heating to more than 80 million square feet while creating a market for residual/waste heat that would usually be expelled into our atmosphere and waterways.

Hamilton has tremendous potential on the path to a decarbonized world - The Hamilton Advantage. This advantage will allow Hamilton to compete and win as a prosperous net-zero community with:

- ✓ An engaged and supportive council and citizenry that understands the need to act on a growing climate emergency;
- ✓ A diversified economy led in large part by a manufacturing cluster committed to decarbonization;
- ✓ An established district energy system;
- ✓ A vast industrial residual/waste heat renewable resource; and
- ✓ A growth trajectory that will create a viable energy innovation and investment market.

HCE is a champion of the CEEP Plan and is poised to contribute in many ways, including:

- ✓ Existing and growing integrated thermal energy networks,
- ✓ Local, regional and global partnerships in thought leadership as well as best practices,
- ✓ Leadership with its Energy Harvesting Project to use industrial / waste heat;
- ✓ A commitment to collaborate with the City Council and Staff to "ReCharge Hamilton" at a time of challenge and opportunity.

Sincerely,

David Inkley,
Vice President – Engineering & Development
Hamilton Community Enterprises