

Date: 2020-08-26

Subject: **Brampton's Community Energy and Emissions Reduction Plan (CEERP)**

Secondary Title: Click or tap here to enter text.

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Report Number: Public Works & Engineering-2020-075

Recommendations:

1. That the report titled: Brampton's Community Energy and Emission Reduction Plan - City Wide - All Wards (HA.D CEERP) to the Committee of Council meeting of September 23, 2020 be received;
2. That the Community Energy and Emission Reduction Plan and its Priority Projects be endorsed by Council;
3. That the target to reduce greenhouse gas (GHG) emissions by 50% from 2016 levels by 2040, and to establish a pathway to reduce emissions by at least 80% by 2050 be approved by Council;
4. That staff be directed to update the Official Plan, as part of the Brampton 2040 Official Plan Review, to reflect the principles, goals, strategic directions and targets of the Community Energy and Emissions Reduction Plan; and,
5. That the Community Energy and Emissions Reduction Plan be circulated to the local MP's/MPP's, Ministry of the Environment, Conservation and Parks, Ministry of Energy, Northern Development and Mines, Federation of Canadian Municipalities, Association of Municipalities Ontario, Region of Peel, City of Mississauga, Town of Caledon, and Sheridan College for information.

Overview:

- In June 2019, Council unanimously declared a climate emergency and directed staff to report on recommendations for Brampton to reduce greenhouse gas (GHG) emissions by 50% from 2016 levels by 2040 and to establish a pathway to reduce emissions by at least 80% by 2050.

- As the current COVID-19 crisis transitions to economic recovery, the City require an urban and energy transition to create a new path forward that will meet our economic, social and environmental goals.
- Changing markets and technologies have inspired this current energy transition, but more important is the urgent need to cut greenhouse gas emissions to address climate change. This calls for a major transformation of energy, heating and transportation systems to low-carbon technologies.
- The City of Brampton, in collaboration with Sheridan College, launched the development of the Community Energy and Emissions Reduction Plan (CEERP).
- The CEERP is Brampton's climate mitigation strategy and its vision is "an energy future that is clean, sustainable, resilient, and supports the Brampton 2040 Vision."
- The CEERP goals are to:
 - reduce community-wide energy end use by at least 50% from 2016 levels by 2041 and by at least 50% from 2016 levels by 2041,
 - to establish a pathway to reduce emissions by at least 80% in 2050 to meet or exceed federal and provincial targets ,and
 - retain at least \$26 billion in cumulative energy costs within the community by 2041.
- The CEERP Strategic Directions focus on green communities, transportation efficiency, home and building efficiency, local energy supply and distribution, industrial efficiency, green infrastructure, and communications, engagement and monitoring.
- The Term of Council Priority, "Lead Environmental Innovation" directs Brampton to develop a Community Energy and Emissions Reduction Plan to improve energy efficiency, reduce greenhouse gas emissions, ensure energy security, create economic advantage, and increase resilience to climate change.
- The Community Energy and Emissions Reduction Plan establishes an aligned strategy that supports Brampton 2040 Vision: Living the Mosaic.
- This staff report seeks Council endorsement of the Community Energy and Emissions Reduction Plan (CEERP), approval of the greenhouse gas (GHG) reduction targets, and endorsement of the Priority Projects identified in the CEERP.

Background:

Addressing the global climate change emergency requires an urban and energy transition, which will result in a number of economic, social, and environmental opportunities and benefits.

Brampton's approach to the needed urban transition is to focus on creating urban and town centres, enhancing transportation options, and pursuing "One Planet Living". Brampton's Community Energy and Emissions Reduction Plan (CEERP) represents the city's approach to managing the risks and opportunities associated with the current energy transition by focusing on *energy efficiency, sustainable transportation, and sustainable energy supply and distribution*.

In addition, as governments respond to the economic impacts of COVID-19 through stimulus funding, it is important to not lose sight of a major challenge of our time: clean energy transitions. With the approval of the CEERP, Brampton will be in a strong position to take advantage of this funding and lead in this new energy transition and climate change mitigation.

Climate Change Impacts

Ontario's average temperature has increased by 1.5 degrees Celsius (°C) over the last five years and is projected to experience a further 3 to 8 degree °C increase by the end of this century. Brampton is already experiencing the consequences of climate change through the increasing severity of precipitation, snow, ice storms and wind events, greater temperature fluctuations and extremes, and the growing presence of vector-borne diseases. Further temperature increases in the coming decades would potentially increase the severity of these impacts.

The "Report of the Intergovernmental Panel on Climate Change (IPCC) on the Impacts of Global Warming of 1.5°C above Pre-Industrial Levels" (2018) demonstrates that we must limit global warming to 1.5°C by the end of this century to avoid irreversible and catastrophic impacts. This means that GHG emissions need to decline by about 45% by 2030, and reach net zero in 2050.

At the United Nations Climate Action Summit in 2019, global attention focused on the urgent need to scale up action. Studies have shown a record increase in carbon dioxide (CO²) levels and other key greenhouse gases (GHG) in the atmosphere, with CO² growth rates being nearly 20% higher than the previous five years.

The Climate Action Summit delivered a clear direction: reinforce 1.5°C as the socially, economically, politically, and scientifically safe limit to global warming by the end of this century, reduce GHG emissions by 45% by 2030, and aim for net zero emissions by 2050 as the global long-term climate objective.

Climate Change Opportunities

The COVID-19 pandemic offers lessons about the urgency of taking swift action and the high cost of inaction. There are multiple benefits associated with proactively addressing

the climate crisis, related to economic development, health and wellness, social equity, and environmental improvements, including:

- improved indoor and outdoor air quality,
- increased energy security,
- reduced heat exposure,
- more accessible transportation options,
- investment of energy dollars,
- retention and creation of local jobs,
- more housing options,
- improved home comfort, and
- higher property values.

Municipal Leadership on Climate Change

City of Brampton has responded to the climate change crisis with municipal leadership in the following ways:

- In June 2019, Council unanimously declared a **climate emergency** and directed staff to report on recommendations for Brampton to reduce greenhouse gas (GHG) emissions by 50% from 2016 levels by 2040, and to establish a pathway to reduce emissions by at least 80% by 2050.
- In November 2019, the City signed a declaration to join the **Global Covenant of Mayors for Climate & Energy**. Brampton is one of 25 Canadian communities participating in the national Showcase Cities pilot led by the Global Covenant of Mayors (GCOM) Canada, Federation of Canadian Municipalities, ICLEI Canada, and the Urban Cooperation Project.
- Central to the Brampton 2040 Vision are seven ambitious vision statements dealing with sustainability and the environment, transportation, creating and retaining jobs, recreation, health, social issues, and arts and culture. The CEERP supports multiple vision statements.
- The City of Brampton is a participant in the **Peel Climate Change Partnership Low Carbon Communities Strategy**, a collaboration between the Region of Peel and local municipalities, which seeks to advocate for, encourage, and implement GHG mitigation measures.

Brampton's municipal leadership is important as analysis from the International Energy Agency shows that "governments directly or indirectly drive more than 70% of global energy investments. They have a historic opportunity today to steer those investments onto a more sustainable path." Data from the Federation of Canadian Municipalities also shows the importance of local decisions on reducing GHG emissions, as 45% of national GHG emissions in Canada are under the direct or indirect control of municipal governments.

Community Energy and Emission Reduction Plan

In 2018, the City of Brampton and Sheridan College partnered to fund and facilitate the development of the CEERP, and enlisted a team of consultants operating under the umbrella of Garforth International llc. The City also secured funding from the Government of Ontario to support planning of the CEERP. Both the City of Brampton and Sheridan College assigned staff to a Project Working Team to oversee the project and support a Community Task Force.

The vision of Community Energy and Emission Reduction Plan is an “energy future that is clean, sustainable, resilient, and supports the Brampton 2040 Vision”. It offers tangible solutions to the City, residents, businesses, and institutions to address our climate emergency.

Partnerships

To ensure community ownership of the CEERP, a Community Task Force formed to provide governance and oversight of the planning process. The Community Task Force consists of a variety of community stakeholders within Brampton, representing a cross-section of local business, energy, public sector and environmental organizations, including:



Letters of support for the CEERP from several of these stakeholders are provided in Appendix 4 – Letters of Support.

Community Engagement

In addition to forming a Community Task Force, the Project Team conducted a number of consultation and engagement activities, which included:

- March 26/27, 2019 Nordic City Solutions, presentation of CEERP
- November 29, 2019 Partners in Project Green, presentation
- February 2020 York University presentation
- Community survey On-line survey, City of Brampton website
- Mapping workshop CEERP Task Force and Sheridan College students
- Open House events Cassie Campbell Recreation Centre, Springdale Library, Brampton Soccer Centre¹

Additional promotion of the CEERP occurred at public events such as: Earth Day Celebration, Mayor's Faith Based Leaders Forum, Massey Street Public School Open House, Annual Scouts Tree Planting, Brampton Vision Celebration, National Public Works Week, Heart Lake Run, Farmers Markets Launch, Bike the Creek, Farmers Market tree talk event, Farmers Market pollinator event, and the Massey Park, Dorchester Park, and Fletchers Creek community planting events.

The 2019 CEERP Engagement Report fully describes the engagement activities (see Appendix 3 - Engagement Report).

Current Situation:

Brampton's population is expected to grow from 600,000 to 900,000 by 2041. This rapid urbanization places pressure on municipal leaders who must manage the growth and development of the community while protecting residents' quality of life. Planning, designing, and building smart, transit-oriented, energy efficient communities helps improve Brampton's economic development, quality of life, and social equity while addressing climate change.

The Community Energy and Emissions Reduction Plan (CEERP) (see Appendix 1) is Brampton's climate mitigation strategy and provides a road map to achieve a clean, sustainable, and resilient energy future in Brampton. The CEERP builds on existing strategies and plans to advance a number of City objectives, including the Brampton Grow Green Environmental Master Plan and the Brampton 2040 Vision.

¹ Events planned for South Fletchers Sportsplex, Gore Meadows Community Centre and Brampton Civic Centre were cancelled due to COVID-19, however, email was used to direct people to a survey and information on the City's website.

The CEERP planning process involved:

- Establishing a baseline for energy use, energy-related greenhouse gas emissions and energy costs for 2016;
- Proposing evidence-based goals for energy use, energy-related greenhouse gas emissions and energy costs for 2041;
- Modelling base case of energy use, energy-related greenhouse gas emissions and energy costs in 2041 with no local action;
- Undertaking energy efficiency simulations that considered several efficiency measures as well as global best practice and local conditions;
- Recommending a preferred efficiency scenario to achieve the 2041 goals; and,
- Identifying evidence-based priority projects for the first five years.

Based on this planning process, the CEERP consists of three documents (see Appendix 1, 2 and 3):

1. **Community Energy and Emissions Reduction Plan** - provides context for the report and summarizes the recommended strategy and priority projects.
2. **Analytical Report and Appendices** - summarizes the evidence-based rationale for the recommended strategy and priority projects.
3. **Engagement Report and Appendices** - summarizes the year-long process that culminated in the recommended strategy and priority projects.

The CEERP recommendations are based on:

- understanding Brampton's Baseline and Base Case for energy use and energy-related emissions;
- understanding Brampton's population and employment growth;
- community engagement;
- results of simulations of Brampton's growth, employing several efficiency measures (see 2019 Analytical Report for more details); and
- global best practice and assessment of local opportunities.

Based on the analytical findings of the CEERP, in 2016, the Brampton community spent over \$1.8 billion annually on energy. Of those energy dollars, 80% or \$1.4 billion leaves the community. In 2016, Brampton's GHG emissions were 3.5 million tonnes, or 5.6 tonnes for every Brampton resident. This is more than Ontario's average GHG emissions of 3.7 tonnes per capita and twice that of the City of Copenhagen, widely recognized as a global leader. Brampton's GHG emissions are about ten times the Government of Canada's target for 2050 based on the Paris Agreement. Finally, transportation accounted for almost 60% of Brampton's emissions, while the residential sector accounted for 21% of emissions.

Based on this analysis and scenario planning, the CEERP recommends the following emission targets for the City of Brampton:

- 50% reduction of 2016 GHG emissions by 2040
- 80% reduction of 2016 GHG emissions by 2050

Council has the option to recommend interim targets for 2030 that express Council commitment and leadership towards mitigating climate change and addressing the Climate Emergency. However, these interim targets would not be based on analysis and scenario planning. If Council decides to endorse 2030 interim targets, staff will analyze their impact on the recommended Action Plan and make the necessary amendments to ensure the City is on track to meet them.

Community Energy and Emissions Reduction Plan (CEERP)

The Community Task Force is seeking Council's endorsement of Brampton's CEERP, which includes the following structure and content:

Vision

The Community Task Force approved the following vision statement as a future oriented declaration of Brampton's energy transition:

An energy future, which is clean, sustainable, resilient and supports the Brampton 2040 Vision.

Principles

The CEERP was developed as a realistic and implementable plan that will be regularly updated. The Community Task Force approved six principles under four categories to guide strategic implementation and ensure decision making in a responsible and sustainable manner that is consistent with CEERP's vision statement. The following principles guided the formation of goals, objectives, and targets and helped prioritize actions:

1. **Environmental** - work towards climate neutrality.
2. **Energy** - benchmark energy performance against global best practices.
3. **Economic** – all energy-related investments will meet acceptable returns, energy costs will be competitive compared to similar North American communities and local employment will be generated.
4. **Reliability** - energy systems will be designed to meet the challenges of changing user expectations, climate uncertainty, and new technology options.

Goals

The Community Task Force chose realistic over aspirational goals, recognizing that the CEERP will require regular updates to adapt to changes in climate policy, energy policy, technology, and global best practice. Goals are based on the assessment of Brampton's current energy and emissions data relative to global best practice and where Brampton wants to be by 2040.

- **Energy** - Based on global best-practices, the community-wide energy end use will be reduced at least 50% from 2016 levels by 2041
- **Emissions** - To reduce community-wide emissions by 50% from 2016 levels by 2041, and to establish a pathway to reduce emissions by at least 80% in 2050 to meet or exceed federal and provincial targets
- **Economic** - Retain at least \$26 billion in cumulative energy costs within the community by 2041

Strategic Directions, Objectives and 2041 Targets

The Community Task Force approved seven strategic directions, reflecting Brampton's urban and energy transitions as well as the Brampton 2040 Vision:

1. Green Communities
2. Transportation Efficiency
3. Home and Building Efficiency
4. Local Energy Supply and Distribution
5. Industrial Efficiency
6. Green Infrastructure
7. Communication, Engagement and Monitoring

Each strategic direction has a series of objectives and 2041 targets that will direct City and community actions. For more information, please refer to the "Objectives and 2041 Targets" table in the CEERP report.

Priority Projects (2020-2025)

Based on the CEERP framework, the Community Task Force approved six priority projects to be completed within the next five years that serve to accelerate the Brampton's energy transition, including:

1. Ensure the City of Brampton policies and programs align with supporting the CEERP Objectives and Targets;
2. Establish a system to deliver standardized retrofits to Brampton homeowners;
3. Update the Transportation Master Plan (TMP) to reflect complete streets and the integrated nature of mobility and built form;

4. Integrate District Energy Systems in appropriate locations within the City of Brampton;
5. Develop Integrated Energy Master Plans for public facilities and private development; and
6. Establish a community organization to lead the development and implementation of select priority projects.

CEERP Action Plan

Beyond the Priority Projects, the CEERP outlines a number of actions to undertake over the next 20 years to meet the Plan's objectives and targets. These actions are identified as either on-going, short, medium or long term in the Action Plan and will be regularly updated to reflect Brampton's changing context.

The City and its partners have already commenced many of the actions within the CEERP related to the:

- Official Plan Review;
- Active Transportation Master Plan;
- Energy and Emissions Management Plan 2019-2024: A Zero Carbon Transition;
- Partnership with RioCan on the development of an Integrated Energy Plan for the Shoppers World redevelopment;
- Implementation of electric buses and charging stations;
- Implementation of the 1 Million Trees Program;
- Installation of 53 City-owned Electric Vehicle Charging Stations
- Update to the City's Sustainability Metrics;
- Development of the Heritage Heights Secondary Plan; and
- Exploration of establishing a Residential Home Retrofit Program

Implementation

Individual actions by the community to address climate change, such as taking transit or buying energy efficient appliances has been and will continue to be important. However, the scale of the actions needed to address the climate emergency and the new energy transition will require coordinated and collective effort within Brampton that will involve the City, residents, business, agencies, and institutions.

To ensure that the CEERP does not 'sit on a shelf' and implementation of the 2020-2025 Priority Projects is achieved and sustained, it is necessary for the City to consider identifying and dedicating resources to oversee, coordinate, implement, and report on overall progress of achieving the Plan's targets.

Internally within the City, the Environment section will work as the coordinator of the City's climate change actions and utilize the existing corporate Grow Green Team,

which includes representatives from across the corporation, to monitor and report on the progress of implementing CEERP related actions.

The establishment of an independent external community organization to work in parallel with the City's efforts to implement the CEERP is one way to accelerate implementation and coordinate collective actions within the community. The Brampton 2040 Vision recommended the establishment of such an organization, referred to as the Institute for Sustainable Brampton (ISB), which would “facilitate public-private actions to position Brampton in the vanguard of suburban sustainability.”

In the fall of 2019, the City, in collaboration with the Region of Peel and Sheridan College, initiated a process to define a framework for this community organization. Through this exercise, the Community Task Force and stakeholders developed a mandate for the ISB that focuses on achieving Brampton's energy transition. As such, this community organization would be renamed “Community Centre for Energy Transformation” (CCET) and could serve as a hub for coordinating, implementing and reporting on the progress of fulfilling select CEERP priority projects.

The CCET is proposed as a not-for-profit, community-based, action-orientated organization to help accelerate Brampton's energy transition towards a low-carbon future by coordinating the implementation of the CEERP's community-based priority actions, including:

- development of a home energy retrofit program;
- expansion/promotion of skilled training in high schools and post-secondary institutions;
- development of a business case for District Energy Systems;
- cooperation with private and public sectors to implement District Energy systems;
- development of a Waste Heat Strategy; and
- pursuit of opportunities to collaborate with community groups to engage on CEERP actions.

Details on the formation of the Community Centre for Energy Transformation (CCET) are contained in a separate staff report.

Next Steps

If endorsed, staff will begin implementing the CEERP with initial actions focusing on:

- defining and assigning municipal resources through the corporate Grow Green Team;
- developing a budget and decision making framework;
- implementing the Action Plan, focusing on the short term actions (1-2 years);

- implementing Priority Projects aligned with the City's mandate (in particular, ensuring municipal policy and program alignment;
- initiating the process for establishing a home energy and retrofit program;
- working with partners to achieve the Priority Projects;
- monitoring progress towards GHG emission goals; and
- developing an internal and external education, communication and outreach plan

Corporate Implications:

Financial Implications:

There are currently no financial impacts resulting from the recommendations in this report. Any additional resources and funding required to implement actions will be identified and brought forward to Council for approval as part of the annual budget process.

Other Implications:

Term of Council Priorities:

Within the "Brampton is a Green City" Term of Council Priority, "Lead Environmental Innovation" directs Brampton to develop a Community Energy and Emissions Reduction Plan to improve energy efficiency, reduce greenhouse gas emissions, ensure energy security, create economic advantage, and increase resilience to climate change.

Brampton 2040 Vision:

The Community Energy and Emissions Reduction Plan establishes an aligned strategy that supports Brampton 2040 Vision: Living the Mosaic.

Economic Development Implications:

The CEERP can help to foster an environment conducive to business retention and expansion by providing existing companies with a reason to maintain and expand their operations in Brampton. This is particularly helpful for organizations that consume high amounts of energy, such as some advanced manufacturing companies and data centres. In addition, the provision of competitive energy services will also serve to attract and retain investment in all community sectors.

The CEERP can help identify local energy investments that provide the greatest opportunity for Brampton's local economy, such as investing in the local generation and distribution of energy, manufacturing of energy technologies and infrastructure, or retrofitting of buildings.

The opportunity for the CEERP to spur local economic development is significant and may include:

- direct jobs by businesses that support improvements to energy efficiency (e.g., construction trades) or design, build and/or operate local supply and distribution systems;
- indirect jobs in supply chains that deliver goods and services to businesses in the direct job category; and
- induced jobs when the newly-hired workers in direct or indirect jobs spend their new earnings on goods and services in the community.

There is indication that the federal COVID-19 recovery plans to strengthen and accelerate local stimulus work will focus on climate change and clean technology. The current Investing in Canada Infrastructure Program: COVID-19 Resilience stream supports projects such as active transportation infrastructure (including parks, trails, foot bridges, bike lanes and multi-use paths) and disaster mitigation and adaptation projects (including natural infrastructure, flood and fire mitigation, and tree planting and related infrastructure). Staff will monitor stimulus plans for any applicable programs Brampton could participate in (such as the Green Municipal Fund), as well as monitoring any other provincial/federal financial programs that align with the goals and objectives of the CEERP.

Other Implications

The CEERP's focus on energy transformation is aligned with, and supported by the Peel Climate Change Partnership's Low Carbon Communities strategy, which seeks to advocate for, encourage, and implement GHG mitigation measures. The Partnership is an ongoing collaboration between the Region of Peel and the local municipalities, and opportunities for advancing implementation actions through the work of the partnership will be explored.

Conclusion:

Addressing the climate change emergency requires an urban and energy transition, which will result in a number of economic, social and environmental opportunities and benefits. Together, the Brampton 2040 Vision and the CEERP will establish Brampton as a leader and position it to realize the many benefits of proactively dealing with our climate emergency.

As Brampton moves forward with achieving the economic, emissions and energy savings goals of the CEERP, it will also need to look beyond the current targets and to work towards eventual climate neutrality. By adopting the CEERP, Brampton will be taking a leadership role in the fight against climate change. Brampton can set an example for others to follow of how a growing suburban city can successfully combat

climate change while coming out economically stronger, more equitable, and improving resident's quality of life.

The CEERP provides a more sustainable, urban, and vibrant future for our City, aligned with nature and "one planet" living. Our diverse community is energized and ready to act towards energy and emissions reduction. The power of our partnerships will allow us to work towards an energy future that is clean, sustainable and resilient.

The COVID-19 pandemic has taught us about the urgency of taking swift action. If we wait to see further impacts of climate change, it will be too late to stop them and Brampton will not realize the economic, social and environmental benefits of proactive action.

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Appendix 1: Community Energy and Emissions Reduction Plan

Appendix 2: Analytical Report

Appendix 3: Engagement Report

Appendix 4: Letters of Support