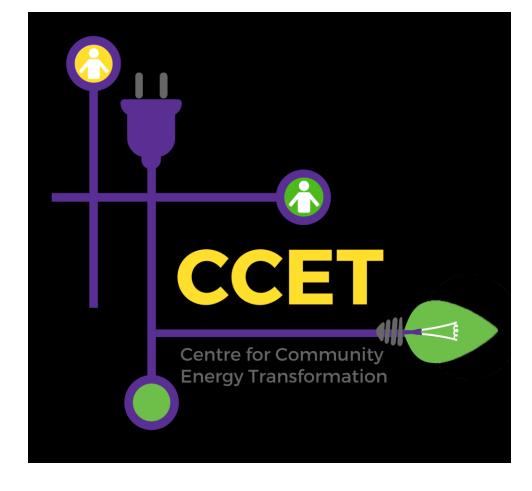
Centre for Community Energy Transformation

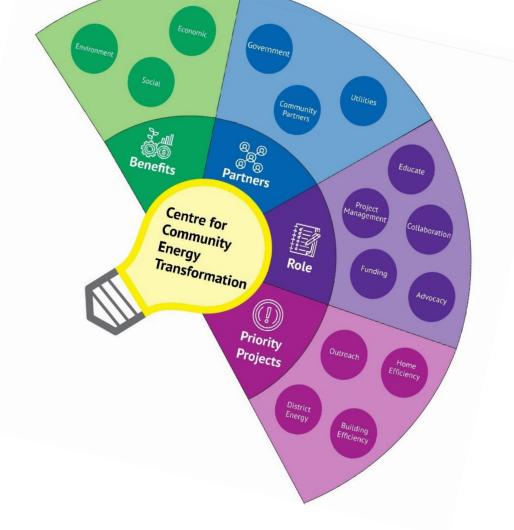
BEAC 2020.10.13





Impetus for Centre for Community Energy Transformation (CCET)

- Grow Green: Environmental Master Plan
- 2040 Vision
- 2019 ISB Task Force Council Delegation
- Community Energy and Emission Reduction Strategy





Why a CCET? Brampton's Climate Emergency

Brampton City Council Declares Climate Emergency

by Dylan Olley on June 6, 2019 in News, Hot Topics, Politics









The Brampton City Council is looking to take action against climate change.

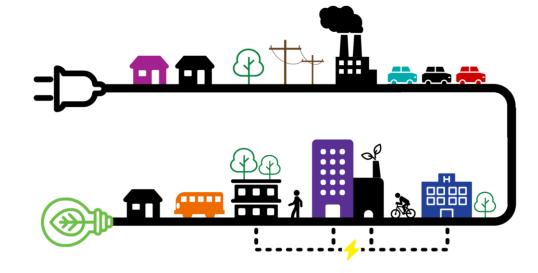
Changes	Effects	Community Impact
Increase in average summer temperatures More frequent and longer heat waves	Heat islands Health issues	Increased costs to cool buildings Increased healthcare costs Increased socioeconomic disparity
Increase in rainfall More intense storms	Flooding Erosion	Cost of disaster relief Cost of infrastructure upgrades Decrease in water quality Potential for loss of land Displacement of residents
More unpredictable seasons	Disrupted growing season Desertification of agricultural fields Disrupted season-dependent industries	Increased cost of food Increased food insecurity Reduced equity and health Disrupted economy More economic uncertainty
泰泰泰 泰泰 Increase in winter storm severity	Snow dumps Cold snaps	Cost of snow removal Higher infrastructure and maintenance costs Less economic activity Increase in social disparity Increase in energy use and associated costs
Milder winters	More disease-spreading pests survive More invasive species survive	More human diseases and illnesses Negative economic impact for industries (e.g. agriculture, lumber)
Increase in average temperatures Changes to local climate	Displacement and changes to geographic range of wildlife Changes in distribution of resources Changes in how species interact	More suitable habitat for invasive species Species extirpation or extinction Loss of ecosystem services Increase cost of local infrustructure and city services More human-animal interactions More disease outbreaks



CEERP Framework

Addressing the Climate Change Emergency requires:

- Urban transition
- Energy transition
- Community commitment and collaboration

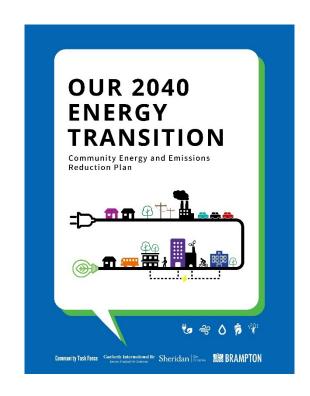




Brampton's Approach to Mitigating Climate Change



Urban transition = Brampton 2040 Vision



Energy Transition =
Community Energy &
Emissions Reduction Plan



Energy Transitions

- Two previous energy transition in the last 100 years
 - 1st: wide scale use of coal and steam power
 - 2nd: move to centralized energy systems and use of fossil fuels
- Current transition involves:
 - Decarbonization of energy
 - Distributed energy generation
 - Deep building retrofits





Brampton is incorporated as a town. Most homes are heated by local wood or coal imported from the United States. Streetlights were powered by natural gas Transportation was mostly by foot, but richer residents might use a horse or bike.



Electricity arrives in Brampton when a 2,200 volt electrical line was built to connect downtown Brampton to the McMurchy woolen mill and generating station along the Credit River in Huttonville.



Early 1900s

Brampton sees its first district heating system to heat the ever-growing greenhouses in the town. By 1929, the district heating system had approximately 160 km of steam pipes, six furnaces, and used 18,000 tons of coal each year.





Early 1960s

Bramalea, one of Canada's first master planned communities, is developed. Marketed as a "new town", Bramalea was built with a mix of residential areas, commercial and industrial uses and green space, but most residents still had to primarily rely on their cars to commute to



After World War II, urban sprawl begins in Brampton. New neighbourhoods are built to be car dependent and rely on large roads and highways. This was aided by the second energy transition that provided centralized energy systems and the wide availability of fossil fuels. Sprawl continues into the 21st century.



Although electricity first came to Brampton in 1886. Brampton voted to become part of the Ontario Hydro-Electric Power Commission power grid. Can you spot Brampton on this old power grid map?



2019

Between 2015 and 2019, Brampton Transit ridership increases by 50% from 1.6 million to 2.4 million rides per month. Despite this, 80% of trips are taken by car.

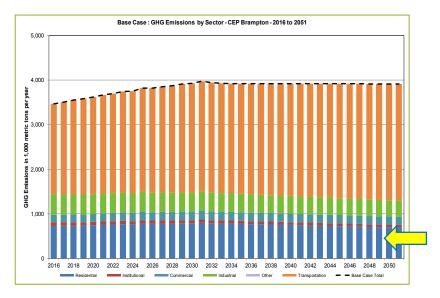


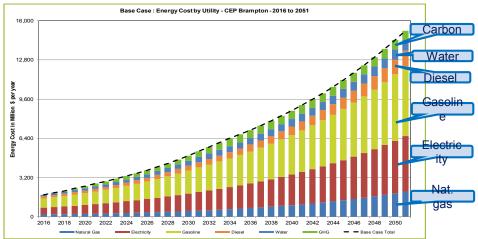
Brampton's population is projected to grow by 300,000 for a total of 900,000 by 2041. If the current suburban form is replicated to accommodate this growth, Brampton will face significant economic, social, and environmental issues.



CEERP: Energy and Emissions

- Brampton spends +\$1.8 billion on energy
- ~ 80% of those energy dollars leave the city
- Energy costs projected to quadruple by 2050
- 5.6 tonnes CO2e of GHG per resident (Ontario = 3.7t /capita)
- Brampton buildings ½ as efficient as global best practices
- Transportation sector almost 60% of GHGs







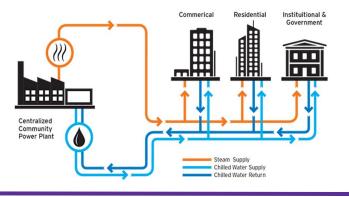
CEERP Priority Projects

Implement in the next 5 years:

- Align City policies/programs to support CEERP targets
- Establish a standardized Home Retrofit Program
- Update Transportation Master Plan
- Integrate District Energy Systems into City/Town Centres
- Develop Integrated Energy Master Plans
- Establish a Community Organization



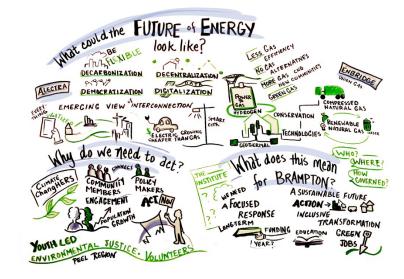






Establish a Community Organization

- Brampton 2040 Vision and 2019 Council direction to investigate establishing a Institute for Sustainable Brampton
- Project Team established with representatives from City, Region, and Sheridan
- Community Workshop held in November 2019 with 50 stakeholders:
 - Focus on energy transition
 - Arms-length from the City
 - Action-oriented
 - Broad support
 - CEERP assigns select priority actions to a Community Organization





What is the Centre for Community Energy Transformation (CCET)?

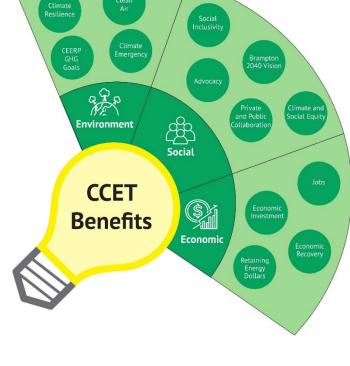
- Non-profit community organization
- Focused on becoming a centre of excellence in energy
- Support Brampton in meeting its climate change targets
- Facilitate community actions to accelerate Brampton's energy transformation
- Collaborate with businesses, developers, utilities, governments, institutions, non-profits, and homeowners
- Develop and deliver energy transformation projects





CCET: Potential Community Benefits

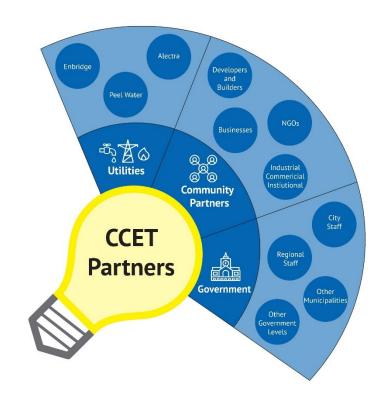
- Coordinated action to catalyze the energy transformation in Brampton
- Measurable GHG reductions and traceable results
- Green job creation
- Partnerships between governments and other organizations
- Alignment of local efforts
- Community engagement and education
- Opportunity to inspire other (suburban) communities
- Showcase ongoing work
- Learn from each other





CCET is About Collaboration

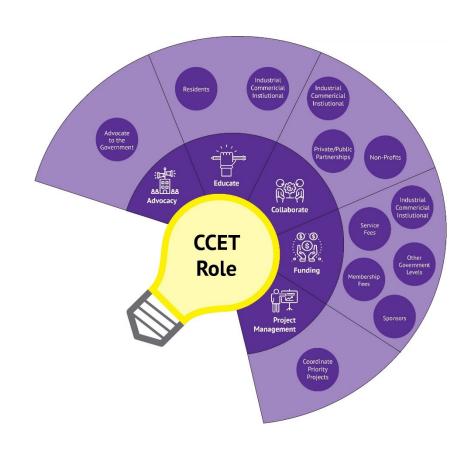
- Working for Brampton's community
- Build network of cross-sector stakeholders and partners
- Secure funding opportunities for private and public sector
- Seek integrated solutions with multiple benefits
- Develop a brand and virtual presence

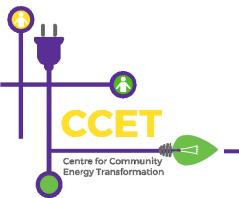




Role of CCET in Brampton's Energy Transition

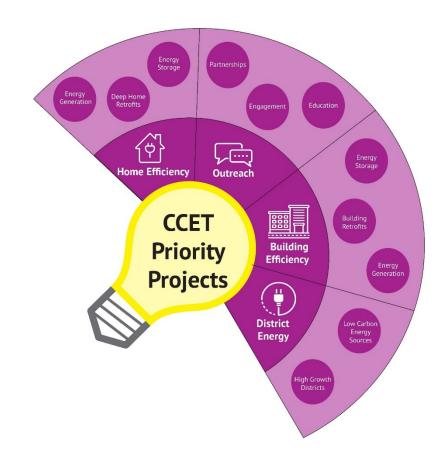
- Plan, coordinate, and deliver select 2020-2025
 CCERP priority projects
- Advocate for energy investment
- Secure funding opportunities from private and public sector
- Communicate and engage regularly
- Community hub for energy excellence





CCET Priority Projects

- Home Retrofit Program
- Establish District Energy nodes
- Improve building efficiencies
- Outreach and engagement





Establishing CCET: Community Task Force









































Establishing the CCET: 2020-2022

Pending Council approval, CCET Project Team will undertake the following steps:

- Establish community CCET Advisory Task Force from representatives from the CEERP Task Force
- Work on developing a CCET funding model → \$1.1 million over 5 years:
 - \$300,000 in the first year
 - \$200,000 in each of the remaining four years
- Develop organization framework (by-laws, Board manual, ED job description, etc)
- Initiate process to incorporate the CCET as a non-profit organization
- Recruit permanent Board members
- Draft Service Level Agreement
- Hire Executive Director
- City transitions out of its coordination role



CCET and BEAC

- Support the establishment of CCET
- Promote the CCET and it benefits to Brampton to your networks
- Participate in engagement activities in establishing the CCET



Thank you

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