APPENDIX A: Table of Reference and Net-Zero Scenario Modelled Assumptions

July 2021

Purpose of this Document

To provide a comprehensive summary of the 32 modelled actions that make up the reference and net-zero scenarios developed to inform the Town of Halton Hills' Low-carbon Transition Strategy. All actions included in the table are future projections related to energy use and greenhouse gas emissions based on research and stakeholder input, a selection of which have been highlighted in the Table. All actions were subject to review by the Town and MSGC. The actions do not constitute future commitments of the Town.

For an analysis of the Town's reference and net-zero scenario energy use and GHG emissions, see Appendices C and D respectively.

Contents

Acronyms

ASHP	air-source heat pump
CaGBC	Canada Green Building Council
CHP	combined heat and power
EUI	energy use intensity
EV	electric vehicle
GDS	Green Development Standard
GHG	greenhouse gas emissions
IESO	Independent Electricity System Operator
MSGC	Multi-Stakeholder Governance Committee
OBC	Ontario Building Code
PV	photovoltaic
NZS	net-zero scenario
REC	renewable energy certificate
RNG	renewable natural gas
TEDI	thermal energy demand intensity
VKT	vehicle kilometres travelled

New Buildings: Buildings Codes and Standards

Action Category	Reference Scenario	Net-Zero Scenario (NZS)	Notes/Sources/Key Stakeholder Input
1. Residential energy performance	- By 2030, 25% of all new construction is built to the Town's Green Development Standard (GDS). - From 2016 to 2020, GDS mandated standards 20% better than Ontario Building Code (OBC) 2012 energy performance. - From 2020 to 2026, GDS will mandate standards 15% better than OBC 2020 energy performance. - Once energy performance under OBC is higher than updated GDS, 100% of buildings will be constructed to OBC.	New residential buildings to be constructed to the following energy use intensity (EUI), in kwh/m2: - 2022: EUI 130 (TEDI 40) - 2026: EUI 100 (TEDI 25) - 2030: EUI 70 (TEDI 15) As of 2023, all new buildings to be net-zero ready (i.e., any GHG emissions need to be offset by community- or building-level renewable energy installations). For the purpose of modelling the NZS, it was assumed that this would be accomplished by using heat pumps for space and water heating.	<u>Modelling notes:</u> - The NZS targets are achieved by providing heat and hot water via heat pumps for 100% of new builds, rather than natural gas. - Other technologies could be used however at the time of this report these were the best and most advantageous options <u>Best practice:</u> - Toronto Green Standard-equivalent (i.e., Passive House or net-zero standard) energy efficiency improvements. <u>Sources:</u> - Town of Halton Hills. (2014). Green Development Standard. - Town of Halton Hills. (2018). Vision Georgetown Energy Master Plan.

2. Commercial and industrial energy performance	- Energy performance under the Building Code improves by 10% every five years.	Office: New commercial buildings to be constructed to the following energy use intensity (EUI) and thermal energy demand intensity (TEDI), in kwh/m2: - 2022: EUI 130 (TEDI 30) - 2026: EUI 100 (TEDI 22) - 2030: EUI 65 (TEDI 15) Retail: - 2022: EUI 120 (TEDI 40) - 2026: EUI 90 (TEDI 25) - 2030: EUI 70 (TEDI 15) As of 2023, all new retail and office buildings to be net-zero ready (i.e., any GHG emissions need to be offset by community or building-level renewable energy installations). Industry: - 2030: 25% improvement over 2016 EUI (linear).	Modelling notes: - These EUI targets are achieved without connections to natural gas by providing heat and hot water via heat pumps for 100% of new builds. Best practice: - Toronto Green Standard-equivalent (i.e., Passive House/ Net Zero) energy efficiency improvements. Tiered improvements according to the City of Toronto. (2016). Zero Emissions Building Framework.
3. Municipal building performance	Energy performance improves according to the Town's plans	From 2025 onwards, new municipal buildings to be constructed to the following energy use intensity (EUI) and thermal energy demand intensity (TEDI), in kwh/m2: EUI 65 (TEDI 15). As of 2023, all new buildings to be carbon neutral (i.e., any GHG emissions need to be offset by community- or building-level renewable energy installations).	Modelling notes: - For the purpose of modelling the NZS, it was assumed that this would be accomplished by using heat pumps for space and water heating, and installing rooftop solar PV. Best practice: - Toronto Green Standard-equivalent (i.e., Passive House or net-zero standards) energy efficiency improvements. Tiered improvements according to: City of Toronto. (2016). Zero Emissions Building Framework. Source: - Halton Hills 2020-2025 Corporate Energy Plan.

Existing Buildings: Retrofitting

Action Category	Reference Scenario	Net-Zero Scenario (NZS)	Notes/Sources/Key Stakeholder Input
Retrofit homes built prior to 1980	- Currently, 1% of building stock is retrofitted annually. - Existing buildings accounted for nearly 40% of Halton Hills' emissions in 2016.	Retrofit 65% of buildings by 2030 (6% of buildings per year).	<u>Precedents:</u> - City of Windsor is considering a City-sponsored retrofit program to cover 80% of Windsor's 60,000 homes by 2041. - Toronto's Home Energy Retrofit Program reached 187 homes between 2014-2019, while the High-rise Retrofit Improvement Support Program reached 2,200 units. - Canada Green Building Council's (CaGBC) Roadmap for retrofits calls for 40% of buildings over 35 years old be retrofitted by 2030 (in moderate carbon grids). <u>Stakeholder feedback:</u> - 63% of the stakeholder advisory group respondents thought that the majority of buildings should be retrofitted by 2030. - 22% of the stakeholder advisory group respondents thought that about half of buildings should be retrofitted by 2030. <u>Sources:</u> - Statistics Canada, Building permits, by type of structure and type of work, Tabel 34-10-0066-01, 2019

Retrofit depth	Held constant: - In 2030, existing buildings account for nearly 40% of Halton Hills' emissions, in line with the 2016 base year.	Most retrofits are deep. (Average EUI reduction of 70% across retrofitted building stock.)	Current status: - Average EUI for buildings constructed before 1981 is 281 kwh/m2. Average EUI for buildings constructed after 1981 is about 160kwh/m2. - Passive House standards limit new buildings to an EUI of 120kwh/m2. This is effectively an EUI reduction of 33% from buildings constructed after 1981, or an 84% reduction from buildings constructed before 1981. Research: - Deep retrofits (40-80%) energy reductions involve air sealing and re-insulation, mechanical ventilation, fuel source conversions. - Moderate retrofits (30-50%) involve reductions involving lighting retrofits, daylighting, controls, and mechanical systems. - Shallow retrofits (10-20%) include recommissioning, fixture replacements, and weatherization. Stakeholder feedback: - 77% of the stakeholder advisory group respondents thought that retrofits should target EUI reductions of about 70%. Source: - Pembina, Building Energy Retrofit Potential in B.C., 2016, at Table 2.
Retrofit homes built after 1980	See actions 4 and 5.	Retrofit 50% of homes by 2030.	See actions 4 and 5.
Retrofit depth	See actions 4 and 5.	Average EUI reduction of 50% across retrofitted building stock.	See actions 4 and 5.
Retrofits of commercial	No assumed upgrades to existing buildings.	Retrofit 50% of commercial building stock.	See actions 4 and 5.

Retrofit depth	No assumed upgrades to existing buildings.	Average EUI reduction of 50% across retrofitted building stock.	Research: - Lighting upgrades can result in energy reduction of 50% for retail buildings (NRCan 2017).
10. Electrification - heat pumps	- No change in electrification assumed because there are no immediate plans to electrify heating in Halton Hills. - About 77% of home heating was provided by natural gas in 2016 in Halton Hills. This proportion is conservatively expected to be held constant through to 2030.	90% of retrofitted buildings receive an air-source heat pump (ASHP). 75% of non-retrofitted buildings receive an ASHP. During implementation, heat pumps should be prioritized for energy efficient homes, as it will maximize their capacity.	Modelling notes: - Assuming 2.75% coefficient of performance Precedents: - Switching from electric resistance to heat pumps is widely recommended for energy efficiency and cost savings. - Over 700,000 residential heat pumps were installed in Canada in 2018 (Canada Energy Regulator, 2018). - CaGBC Roadmap for Retrofits calls for 40% of buildings over the age of 35 be electrified by 2030 (CaGBC, 2018). Stakeholder feedback: - 59% of respondents said that all buildings that are retrofitted should receive an ASHP. - 41% of respondents said that all non-retrofitted buildings should receive an ASHP. - 18.5% of respondents said that 75% of buildings should receive an ASHP. - 18.5% of respondents said that half of non-retrofitted buildings should receive an ASHP. This feedback was used to inform the assumption that 90% of retrofitted buildings receive an ASHP in the NZS, as it is likely that an ASHP will not be feasible in all cases. For non-retrofitted buildings, survey respondents were split on the extent to which non-retrofitted buildings receive an ASHP. 75% penetration was selected as a middle ground between the most common responses.

11. Industrial building and process efficiency	No assumed upgrades to existing buildings.	Starting in 2022, industrial buildings and processes use 3.75% less energy than in the previous year, resulting in 30% less energy consumed by the year 2030, relative to the 2016 baseline.	Current status: - Industrial buildings account for 18% of energy consumption in Halton Hills. Research: According to the 2019 Achievable Potential Study (for natural gas and electricity conservation) undertaken by the Independent Electricity System Operator and the Ontario Energy Board, the difference between the business-as-usual scenario and technically achievable efficiency potential for the industrial sector is from nearly 30 GWh to just over 100 GWh.
12. Industrial end-use fuel switch	No change.	30% of industrial process energy use (prioritizing fuel oil and then natural gas) will be displaced with renewable electricity and renewable natural gas by 2030.	See action 11.

Energy Generation

Action Category	Reference Scenario	Net-Zero Scenario (NZS)	Notes/Sources/Key Stakeholder Input
13. Solar PV (rooftop)	Hold existing solar PV capacity and generation constant, at 4.08MW in IESO contracts.	For all buildings (split between residential and commercial based on total sq/ft roof area): - By 2030, install 30% of feasible rooftop solar PV potential (46 MW based on roof analysis), starting in 2022. This results in an annual installation of 5.6 MW (or 7,849 MWh/yr including a 16% capacity factor).	Current status: **14.** There are several solar PV installations in the Town of Halton Hills, including on several municipal buildings. **15.** According to Canada's Energy Regulator, homeowners can generally expect net cost savings by installing rooftop solar PV in Ontario, because of the relative cost of electricity, mature solar PV market in Southern Ontario, and the presence of time-of-use electricity pricing. Research: **16.** There is approximately 149MW of technical rooftop solar PV potential in the Halton Hills, based on an analysis of rooftops that factors in pitch, capacity factor, and structure.

17. Solar PV ground mount - utility scale	Maintain existing 0.5 MW of ground-mount solar PV under IESO contracts.	Solar PV rooftop and solar ground mount capacity to be built to meet remaining Town electricity demand, with the condition that solar installations do not cover more than 30% of "suitable land". "Suitable land" is defined as land that is either vacant or agricultural land, and is at least 4 hectares large. By 2030 , install 445 MW of solar capacity or 623,712 MWh in 2030 (applying a 16% capacity factor). Assuming 4 h/ MW, the land required would be 1,780 ha, which is about 13% of available land (undeveloped settlement land and cropland).	Current status: - Utility-scale solar is currently limited in Ontario by financial and regulatory barriers, according to Canada's Energy Regulator - Delivery models include power purchase agreements, municipal- or utility-owned projects, and co-operative-owned projects. Precedents: - Ottawa's Renewable Energy Cooperative (6.45 MW, 750+ members) - Town of Nelson Community Solar Garden (an avg. 65,800 kWh annually) - Municipally-owned Hydro Ottawa's energy generation subsidiary (Portage Power), has 2.3 MW installed solar capacity in Ottawa. Research: - Utility-scale solar PV requires a land profile of 4 ha for 1 MW (Calvert, Mapping opportunities for land-based renewable energy generation in Ontario, 2019). Stakeholder feedback: - 60% of respondents said that more than 30% of suitable land should be used for renewable energy development. - 20% of respondents said 20% of suitable land should be used for renewable energy development.

18. New Developments - district energy	No district energy applied. While a Natural Gas CHP Unit (<1MW) will be used to provide heat and electricity to a maximum of 2,713 units connected to the district heating system at Vision Georgetown, this system is expected to be installed in 2035 (beyond the model end date).	New developments in Vision Georgetown to be powered by a 4 MW geothermal district energy system by 2030.	<u>Current status:</u> - The Town of Halton Hills is considering the development of a district energy system in Vision Georgetown in 2035. The Town was originally looking at a 1 MW system (CHP) using natural gas to heat and power up to 2,713 buildings, but is now considering ground-source heat pump technology. <u>Precedents:</u> - There are many examples of geothermal district energy systems for greenfield developments. For example, Drake Landing in Okotoks, Alberta, uses a district energy system that uses solar thermal heating and borehole storage. The Lulu Island Energy Company runs a ground-source heat pump district energy system in Richmond, British Columbia; Markham, Ontario; and Blatchford, Alberta. <u>Stakeholder feedback:</u> - 80% of respondents said that all new communities meeting an adequate energy density threshold should be powered by carbon-free district energy.

Transit

Action Category	Reference Scenario	Net-Zero Scenario (NZS)	Notes/Sources/Key Stakeholder Input
19. Transit mode share (>15km)	GO Kitchener line expansion to two-way all-day service complete by 2025: - By 2025, GO trains will make 220 daily trips from Acton to Toronto and 643 daily trips from Georgetown to Toronto. - GO trains remain fuelled by diesel.	Transit mode share to reach 15% for long-distance trips (>15km).	Current status: - In 2016, 9% of all vehicle trips were over 15km. - In 2016, 90% of all trips over 15 km were made by car. Modelling notes: - Only to apply to zones that have a minimum density of 50 people or jobs/hectare (per MTO Transit Supportive Guidelines). With the exception of the 2 most dense zones: Acton and Vision Georgetown. Research: - Kitchener GO Train expansion is already expected to increase ridership at Georgetown and Acton Station by 16% (over 100 new daily riders). Stakeholder feedback: - 37.5% of respondents said the Town should aim to increase the transit mode share incrementally (about 10%). - 31.3% of respondents said the Town should aim to increase the transit mode share significantly (20%). 15% mode share was selected as a mid-point between the two most common responses. Source: - Metrolinx. (2019). Kitchener GO Rail Service Expansion.

20. Transit mode Share (<15km)	No change. - Halton Hills currently has a Universal Transit Service, which acts similar to a taxi. - There is a GO bus and rail service between Acton and Georgetown. - In 2016, about 5% of trips under 15km were made by transit.	Local electric bus route established by 2030 (could include autonomous vehicles); Transit mode share for trips within 5km-15km increase to 15% of trips by 2030.	Precedents: - Halton Hills has studied the feasibility of implementing a local transit service, where an expansion of the existing Universal Transit Service was recommended for ridership and economic suitability (Town of Halton Hills 2018). Modelling notes: - The NZS only to apply to zones that have a minimum density of 50 people or jobs/hectare. With the exception of the 2 most dense zones in Acton and the zone that covers Vision Georgetown. Stakeholder feedback: - 56.3% of respondents supported establishing a local electric bus service (increasing transit mode share for short trips to 20%); - 25% of respondents supported establishing a local electric bus service (increasing transit mode share for short trips to 10%). 15% mode share was selected as a mid-point between the two most common responses.
21. Autonomous electric vehicle (EV) car share	N/A	Starting in 2024, an autonomous EV car share is introduced in the Town. By 2030, the system will serve 10% of trips.	Modelling notes: - Each autonomous EV carshare vehicle replaces 10 personal vehicles Precedents: - First Transit has 8 shared autonomous vehicle projects across the US - In Nov. 2020 Loblaws (Toronto) has started a pilot of 5 autonomous delivery trucks.

22. Active mode share	- Transit share doubles from 2016 to 2030, while vehicle share decreases slightly and other mode shares stayed almost the same. - During the 2016 afternoon peak, personal vehicles accounted for 84% of trips, transit accounted for 2% of trips, active transport accounted for 7% of trips, and school buses accounted for 7% of trips. - Active modeshare stays constant at 7%	Active mode share accounts for 20% of trips under 5km by 2030.	Current status: - In 2016, 8% of trips under 5km were active. This is expected to remain similar through to 2030 under the Reference scenario. - Halton Hills is in the process of completing its Active Transportation Master Plan Modelling notes: - Only to apply to zones that have a minimum density of 50 people or jobs/hectare. With the exception of the 2 most dense zones: Acton and Vision Georgetown Stakeholder feedback: - 62.5% of respondents wanted a tripling the projected active mode share (22%); - 12% wanted a modest increase (8-12%). Research: According to Census Canada in 2016 the highest rate of: - inter-suburban commutes under 5km was Vancouver with 16.% - inter-urban commutes was 47.4% in Toronto
23. Trip generation	No change in trip generation.	- 30% of people telework by the year 2030. - By 2030, a split between long distance (+15km) and medium distance trips (5-15km), where long distance trips decline by 15%, and medium distance trips decline by 15%. - Residential electricity consumption increases by 10% for dwellings associated with trip reduction.	Research: - 30% of jobs can be done at home (Pallais 2020); See also Global Workplace Analytics Covid-19 2021 work from home forecast (25-30%) - A 2010 UK study of 3 towns over a 5-year period, found that travel planning, increasing active transportation, and transportation marketing reduced individual car trips by 9%, and trip length by 6% (Sloman L, et.al. 2010). - Residential energy consumption rebound effect is possible (O'Brien & Aliabadi 2020).

Private/Personal Use Vehicles			
Action Category	Reference Scenario	Net-Zero Scenario (NZS)	Notes/Sources/Key Stakeholder Input
24. Electrify municipal fleets	No change to municipal fleets.	Starting immediately, electrify 100% of new administrative vehicles at the time of replacement. At time of replacement, heavy vehicle classes are transitioned to RNG, where electric options exist they should be opted for. (To be modelled as 50% of new heavy vehicles are electric by 2030, and 50% of new heavy vehicles are RNG by 2030.)	Modelling notes: - Assuming an average vehicle life cycle of 7 years for combustion engine vehicles. This will need to be ensured through supportive policies. Precedent: - Many municipalities and governments are targeting 100% electrification of their fleets, including the Government of Canada (Government of Canada Greening Government Strategy). International cities are aiming for 100% electrification by 2020-2030 (Oslo, Norway: 2020; Amsterdam, Netherlands: 2025; Antelope Valley, California: 2025; Los Angeles, California: 2030)
25. Electrify personal vehicles	EVs make up 14% of new sales by 2030.	At time of replacement, 100% of new vehicles will be EVs by 2030, assuming an average combustion engine vehicle life cycle of 7 years.	Current status: - EV Market Trends: EVs made up 5% of new sales in Canada during the first quarter of 2020 (Electric Mobility Canada, 2020). - The average lifespan of an EV is 13 years. Precedents: - The Government of Canada has set a nationwide target of EVs making up 10% of new sales by 2025, 30% of sales by 2030, and 100% by 2040 (NRCan 2020). - Cities that have high EV uptake typically deploy a comprehensive suite of policies to address EV barriers, including installing charging points, providing prioritized parking, subsidizing capital costs, etc. Local municipal policy needs to be paired with provincial and federal policies to address key barriers. (International Council of Clean Transportation 2017) Research: - Adoption of EV car or bike share services can further increase electric trips. In municipalities where people have access to

			electric car or bike shares, at least 28% of all trips up to 10.5 KM were taken by e-Bike, transit trips dropped by 18%, and personal-vehicle trips dropped by 10% (low estimate from study) (Fhyri 2015).
26. Low-carbon commercial transport activities	No change.	At time of replacement, 100% of new medium vehicles will be EVs by 2030, 50% of new heavy vehicles will be electric by 2030, and 50% of new heavy vehicles will be RNG by 2030. Assuming an average vehicle life cycle of 11 years.	Current status: - Ontario's commercial EV industry is nascent. Precedents: - EVs are feasible for light-duty commercial transport. 33% growth rate in new commercial EV sales by 2030 (Guidehouse 2019). - Heavy-duty electric models are expected to be available in the coming years (Daimler 2020). Research: - Hydrogen is seen as being the most viable fuel source for heavy haul trucks (CBC, 2020). - Currently, most hydrogen is made from natural gas (IEA 2019). - As a result, hydrogen is not included in the NZS.
27. Off-road vehicles	No change.	50% of new off-road vehicles are electric by 2030.	Based on data shared from the Multi-Stakeholder Advisory Committee.

Water and Waste

Action Category	Reference Scenario	Net-Zero Scenario (NZS)	Notes/Sources/Key Stakeholder Input
28. Waste generation	No change. Waste generation stays constant at 1.07 tonnes/person/year. Overall waste-related emissions grow due to population growth.	Reduce waste generation by 40% by 2030 (to 650 kg/person/year).	Current status: - Waste generation rates in Halton Hills are just over 1 tonne/person/year. Precedents: - Nova Scotia has the lowest waste generation rate of all Canadian provinces at 386 kg/person/year. (Conference Board of Canada 2016).
29. Waste diversion	The waste diversion rate was 57.4% in 2010 and 65% in 2016. The waste diversion rate is anticipated to increase to 70% by 2025.	Reach 80% organic waste diversion by 2030.	Source: - Future waste diversion rate as planned by Halton Region (Waste Diversion Strategy). Current status: - Waste is the responsibility of Halton Region. Several waste diversion streams, including recycling and compost, are available in Halton Hills. Precedent: - Halton Region already exceeds Ontario's goal of 50% waste diversion by 2030. The province has set a target of 80% by 2050 (Government of Ontario). - Ontario is considering a ban on organic waste from landfills as well as associated resource recovery (see: Food and Organic Waste Framework). Modelling Note: - Because waste treatment is under the control of Halton Region, no assumptions for waste treatment are presented (i.e., anaerobic digestion, etc). - The Town should consider lobbying for this from the Region

30. Water efficiency	No change.	Water consumption declines by 10% by 2030.	Current status: - Halton Hills has a water/wastewater treatment rate of 150 m3/person/year. - Water delivery and wastewater treatment is the responsibility of Halton Region. Precedent: - City of Guelph has water-use targets of 11% decline in total water use by community by 2038 (6% decline in L/person/day) (City of Guelph 2016). - Halton Region offers several water conservation rebates for toilets and rain barrels.

Sequestration and Land Accounting			
Action Category	Reference Scenario	Net-Zero Scenario (NZS)	Notes/Sources/Key Stakeholder Input
31. Tree planting	No change.	Starting in 2022, plant 50,000 trees in Halton Hills per year.	Current status: - No active tree planting initiatives. Precedent: - City of Hamilton planted 10,000 trees per year between 2013 and 2018. - Wellington, New Zealand has been planting a tree every five minutes, on average, for the past 15 years—more than 1.5 million in total. About 40% of the city's emissions are now mitigated by land use, land-use change. and forestry activities. Research: - Assuming that 500 trees are planted per acre and Halton Hills has a land area of 273 km2, planting 50,000 trees would roughly cover 1.3% of Halton Hills' land coverage area.
32. Natural areas	No change.	15% increase in land under sustainable soil management practices by 2030 (i.e., no-till farming).	Precedent: - Sustainable soil management is advocated by the Government of Ontario as an emissions reduction method.

33. Spatial distribution of new buildings	According to Town projections 30,203 additional dwellings will be built in the Town by 2029. (Source: Environics Analytics, 2019. Demo Stats, 2019.)	All new developments, apart from Vision Georgetown, are infill (i.e., no greenfield development).	Precedent: - Infill development is currently influenced through the Official Plan, through limits to the Georgetown/Acton Urban Growth Boundary, and by increasing maximum density limits for residential areas. Land-use regulations reduce emissions (Leibowicz, 2017). Note: - Vision Georgetown makes up the vast majority of planned greenfield development before 2030. The development will have a more significant impact on emissions after 2030.

Renewable Energy Procurement

Action Category	Reference Scenario	Net-Zero Scenario (NZS)	Notes/Sources/Key Stakeholder Input
34. Purchases of renewable electricity certificates (RECs)	None.	Currently, additional solar capacity modelled offsets any central grid demand, and therefore, no RECs are necessary to achieve net-zero. The Town may want to consider the purchase of RECs should solar capacity not meet expected model projections.	Current status: - The Town of Halton Hills does not currently purchase RECs. Precedent: - Bullfrog Power is one of Ontario's largest REC services, and works with residents, businesses, and governments. Note: - Each REC represents the environmental benefits of 1MWh of renewable energy generation. When you purchase RECs, it is guaranteed that renewable energy has been generated on your behalf and sent to the electrical grid, which is the network that delivers electricity from suppliers to consumers. However, once it enters the grid, it is impossible to distinguish where or how that electricity is being delivered.
35. Renewable natural gas (RNG)	None.	Will be procured to replace remaining natural gas demand starting in 2030.	Current status: - There are several potential sources of RNG production in Halton Hills, including farm manure and residues, wastewater solids, separated organics, and food waste. - Enbridge is expected to launch its Voluntary RNG Program pilot for customers in 2021. Research: - Ontario Energy Board and Enbridge are actively exploring increased RNG integration. A 2019 Ontario Biogas and RNG Market Potential study conservatively projects that RNG energy production in Ontario has the potential to grow five-fold by 2029,with the most important source of supply being organic waste diverted from landfill. Communities in Ontario are increasingly diverting their organic waste to anaerobic digestion facilities.