

Hamilton Community Energy Plan

Community Stakeholder Advisory Committee

Baseline & Business-as-Planned Webinar and Actions Mapping Exercise

Meeting Summary

Date & time: June 15, 2020, 9:30-11:30 am

Location: Zoom conference call

Contents

Attendees	2
Webinar Objectives	3
Description	3
BASELINE & BUSINESS-AS-PLANNED RESULTS	3
SUMMARY OF ENGAGEMENT TO DATE	4
ACTIONS MAPPING EXERCISE	5

Attendees

1. Kyra Bell-Pasht (SSG)
2. Yuill Herbvert (SSG)
3. Marcus Williams (WiT)
4. Andrea McDowell (City of Hamilton, Public Health)
5. Tom Chessman (City of Hamilton, Energy Office)
6. Trevor Imhoff (City of Hamilton, Public Health)
7. Christine Newbold (City of Hamilton, Planning)
8. Alissa Mahood (City of Hamilton, Planning)
9. Joanne hickey-evans ((City of Hamilton, Planning)
10. Omar Shams (City of Hamilton, Transportation)
11. John W. Lane (City of Hamilton, Buildings Division)
12. Justin Waud (City of Hamilton, Planning)
13. Arlen Leeming (City of Hamilton, Public Works)
14. Heather Travis (City of Hamilton, Planning)
15. Steve Malloy (City of Hamilton, Transportation)
16. Sebastian Stula (City of Hamilton, Transit)
17. Shannon McKie (City of Hamilton, Planning)
18. Heidi Levitzky (Hamilton Industrial Environmental Association)
19. Kate Flynn (Centre for Climate Change Management at Mohawk College);
20. Ryan Hoeksma (Hamilton Wentworth Catholic District School Board)
21. Chris Hamilton (Enbridge)
22. Eric Roehl (Hamilton Health Sciences)
23. Lynda Lukasik (Environment Hamilton)
24. Bianca Caramento (Hamilton Chamber of Commerce)
25. Tony Cupido (Mohawk College)
26. Chris Shilton (CityHousing Hamilton)
27. Peter Hole (Stelco)
28. Andrew Sebestyen (Stelco)
29. Rafiq Dhanji (Sustainable Hamilton Burlington)
30. Vick Lakhian (former Post-doctorate Researcher McMaster Institute of Energy Studies)
31. Sara Yonson (Hamilton Port Authority)
32. Ankur Mehrotra (Hamilton Community Energy Inc.)
33. Mike Frisina (Alectra Utilities)
34. Alvin Baldovino (McMaster University)

Webinar Objectives

- To inform the City and SAC about the results of the business-as-planned scenario modelling and what they imply for achieving the community-wide net zero target
- To consult with City staff and stakeholders about their insights about potential opportunities and challenges in regards to likely key low-carbon actions

Description

A webinar that will provide:

- An overview of the business-as-planned scenario modeling results
- An introduction to the gap between BAP and net zero and the breadth and scope of key actions likely to be included in Hamilton's low-carbon scenario
- A review of survey feedback to date

The webinar will end with a group whiteboard activity to discuss the opportunities and challenges for Hamilton surrounding each key low-carbon activity.

BASELINE & BUSINESS-AS-PLANNED RESULTS

[See webinar PPT slides for summary of results]

Participant Questions & Comments

- Will the stakeholders get to see the BAP report?
 - It will be shared when it is finalized - we hope to incorporate any major feedback we might here today
- With COVID-19, are there concerns that intensification trends will stagnate or reverse?
 - A brief analysis of the COVID impacts will be included in the final CEP report
- With regards to modelling modelling - if the city has indicated preferred directions, for instance, regarding urban expansion, are these factored into your analysis? I'm thinking of the Elfrida urban boundary expansion - not yet approved - but significant with regards to impacts on this analysis.
 - The team used the Council directed growth projections by transportation zone.
- How strong are the correlations between employment increases with energy increases in commercial and industrial sectors?
 - Employment increases drive spacial increases in the commercial sector - so it is a direct link

- The correlations are close- however we reflect different commercial and industrial sectors which have different energy intensities, the sector mix influences the trajectory
- How does public transportation and active transportation help with transportation emissions? Is that in a coming slide?
 - The impact of public transportation and active transportation will be reflected in more detail in the Low Carbon scenarios. We are also missing the impact of the BRT
 - In general, however, public transit and active transport have a bigger impact in the near term to the extent that they displace gasoline or diesel powered vehicle trips. As the personal vehicle fleet shifts to electric, and if the electricity is clean, the GHG impact decreases over time as active and transit trips are displacing clean EV trips. That said, the benefit than shifts to energy and financials- every avoided EV trip is a bit less renewable energy that must be generated and therefore less pressure on the grid.
- Does the report take into account the expected rollout of natural gas and closing of nuclear on the electricity grid?
 - Current IESO projections indicate that the grid could become much more GHG intensive, I think from 20 kgCO₂e/kwh to 80 by 2030
- I was wondering what the anticipated "lowest hanging fruit" were for carbon reductions that had the biggest impact for the city from the results of the scenario analysis?
 - Participant discussion:
 - From a participant: my personal opinion for low hanging fruit would be residents converting gas furnaces to heat pumps!
 - Another participant: Yes!!! I agree - this would be a huge shift in the right direction!!
 - Another participant: I completely agree! My "pie-in-the-sky" dream is where we have a cluster of 6 houses or so all connected to a single geo-field and use it as a source for the heat pumps - this would bring down the personal installation costs and allow them to operate efficiently even in the coldest winters. It isn't even a technological challenge, but more of a societal challenge and hoping people get along well with their neighbours!
 - Per City Team: These will be discussed further as we undertake the next stage of modelling.
- Is the information being shared here confidential? Is it allowed to share with co-workers? I missed the first meeting and am not sure if there was an NDA
 - To be answered in follow-up email

SUMMARY OF ENGAGEMENT TO DATE

[See webinar PPT slides]

ACTIONS MAPPING EXERCISE

- Participants were broken into facilitated breakout groups that were assigned a subset of 19 archetypical low-carbon actions (listed below).
- Groups were asked to decide where to place each action on the 'effort vs. impact' matrix, provide any relevant concerns, as well as any thoughts on how the action could be made more impactful.
- The larger group was also given an opportunity to provide feedback.
- Feedback on each action is summarized below.
- Screen captures of the 6 group's action mapping is provided at the end of the document

Impact Vs. Effort Matrix

Objective:

Place the archetypical low-carbon actions on the "Impact vs. Effort" matrix.

Discuss why you placed them there, and note any major concerns



1. Retrofit 90% of homes, built before 1980, by 2050

- The level of ambition of this action is just right
- - 90% makes it tough
- Hard because it requires understanding of which retrofits will bring the best results -and make a sound business case for a homeowner
- - support is need to make business case for homeowners - incentives, programs from several sources, levels of govt and organizations/utilities
- - requiring people to do more than one thing is the hard part
- Cost of NOT doing it is part of the business case-

2. Retrofit 90% of institutional, commercial, and industrial (ICI) buildings, greater than 50,000 ft² by 2050

- The level of ambition of this action is just right
- Magnitude, needs to have a business case, huge investments
- regulation

3. Improve Industrial process efficiency 50% by 2050

- May be challenging
- Industry is already seeking to maximise efficiencies and there may not be much room to further enhance efficiencies
- Watching technology transitions carefully, such as hydrogen for steel manufacturing pilot in Europe

4. Switch 90% of residential homes to electric heating through heat-pumps by 2050

- The level of ambition seems too high
- - costly but not as large \$\$ output as an EV
- - magnitude may be too high (90%) but easy relative to other actions
- - Good impact for the investment
- - recognize that furnaces will have to be replaced anyway - need to make the economics work - subsidies, low/no interest programs to get uptake

5. 100% of new multi-family developments, and new subdivisions meet Net-zero, Passive House, or equivalent standard by 2030.

- The level of ambition of this action is just right
- Issue of regulations making it easier.
- Affordability is key to success.

6. 100% of new commercial buildings meet Net-zero, Passive House, or equivalent by 2030

- The level of ambition of this action is just right
- With regulations it will be easier.
- Canadian winters using grid power impacts results.
- Cost of electricity vs nat. Gas.

7. Add Solar PV to 50% of residential rooftops by 2050

- Just right

8. Add Solar PV to 50% of non-residential rooftops by 2050

- Just right/conservative
- PV prices are declining quickly and likely this will be possible
- Challenges include older building stock with roofs that are not structurally able to support solar PV installations.

9. 65% of internal trips (within Hamilton) are made by walking, cycling, and

transit by 2050

- Within jurisdiction of municipality
- Need to clarify scope of action to better understand
 - (issues with whether we are dealing with rural areas...implying that rural areas make this goal challenging)

10. 100% of the municipal fleet is electric by 2030

- The level of ambition of this action is too high/just right
- Light duty vehicles are appropriate. Heavy duty options do not exist - we hope they are in future.
- Act immediately on light duty and support/monitor heavy duty (or pilot) for options in coming years.

11. 80% of municipal buildings are Net-Zero by 2035, 100% by 2050

- The level of ambition of this action is just right
- Consider 2030 vs 2035

12. 100% of transit in Hamilton is electric by 2050

- The level of ambition of this action is too high
- Current municipal direction to Natural Gas
- Would need to start implementing now to get the infrastructure in place

13. Hamilton adds 5 MW of community-scale solar PV per year from 2022-2050

- Easier to do behind-the-meter/net meter than grid supply/export permitting
- Technology is there; more challenge with red tape.
- Broaden the appeal with cost support
- Storage would make this action more impactful

14. Hamilton has a fully operational 300 MW Wind Farm inside or outside the city boundary by 2050

- Level of ambition is too low
- NIMBY makes it tougher, turbine concerns (harder than rooftop PV)
- Locations and siting? Wind potential?
- Cost of land in GTHA is high
- Wind cost per kwh higher than solar; may require an incentive

15. By 2040, 90% or greater of personal vehicle sales in Hamilton are electric

- Need to be more specific on the technology to identify feasibility
- High impact and tough, battery range and infrastructure need to be improved
- Advocating to higher level of government to provide clear direction (e.g. Sweden and Norway identifying no imports and/or manufacturing of combustible vehicles)

16. By 2050, 50% of commercial / heavy vehicles are electric

- In between just right & too low
- Vehicles will likely electrify more quickly/or introduce hydrogen.
- The challenge could be the distribution system; there are already challenges with electric charging stations

- Vehicle to grid technology could support the introduction
- Shipping has a net zero by 2050 by the International Maritime Organisation- exploring fuels such as bio LNG

17. BY 2050, 95% of organic waste is re-routed to an anaerobic digester where methane is captured and converted to biogas / renewable natural gas.

- The level of ambition is too low
- scale it up by including human/sewage as well as organic waste
- Likely not too challenging to acquire over the timescale required, but questions around cost, technology, consistency, reliability, third-party contracts
- What is the ROI?
- Large institutions supposed to be organic waste-free by 2025, but no incentives or changes in market, lots of legislative uncertainty; need legislative guidance at municipal or provincial level to facilitate this action
- Education of residents required re: waste separation
- Landfills are sited in areas of low socioeconomic capital and are relatively disempowered; need to apply equity lens to this work
- Potential for income stream by accepting waste/streams from other municipalities?

18. By 2050, a 25% reduction of water consumption / wastewater generation (behaviour change, landscaping improvements, leak detection)

- Just right
- Scale of GHG reductions is unclear from other jurisdictions
- Is there a way to make this action more impactful?
- City needs to set a good example; many flower beds in medians are excessively watered, road is watered as well as soil
- Royal Botanical Gardens looked at soil/mulch/plants to experiment with the amount of watering required for different combinations; can the city replicate or learn from this example?
- Pair this work with other kinds of projects, eg. energy retrofits for homes to reduce effort required and find a good entry point

19. By 2050 all district energy systems are fuelled with renewable energy sources

- Would be more impactful if there were an expansion plan

Participant Questions & Comments

- Modelling team comment: Corporate actions were listed as high GHG impact, but in relation to the entire City's emissions profile, they are actually low. However, they are high impact in terms of the city's role as a moral leader, and as an example of what can be achieved.

Group 1

Actions Bank

GHG Impact

<p>Big & Easy</p> <p>Activities that give the best return based on the effort. They are valuable and fundamental to your success</p> <p>Switch 90% of residential homes to electric heating through heat-pumps by 2050</p>	<p>Big & Tough</p> <p>Activities what provide long term returns but may be more complex to execute</p> <p>Retrofit 90% of ICI buildings, +50,000 ft2 by 2050</p> <p>Retrofit 90% of homes, built before 1980, by 2050</p>
<p>Small & Easy</p> <p>These actions are easy and important, but won't get us far in the long run</p>	<p>Small & Tough</p> <p>These activities are time-consuming and require resources that may be spent on other things</p>

Effort

Group 2

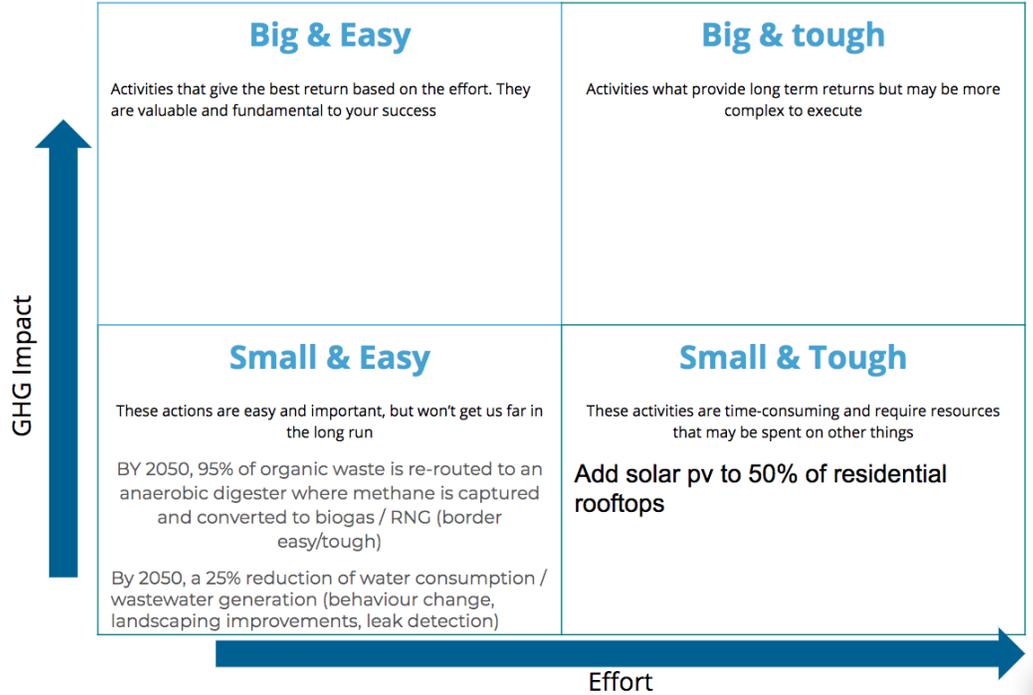
Actions Bank

GHG Impact

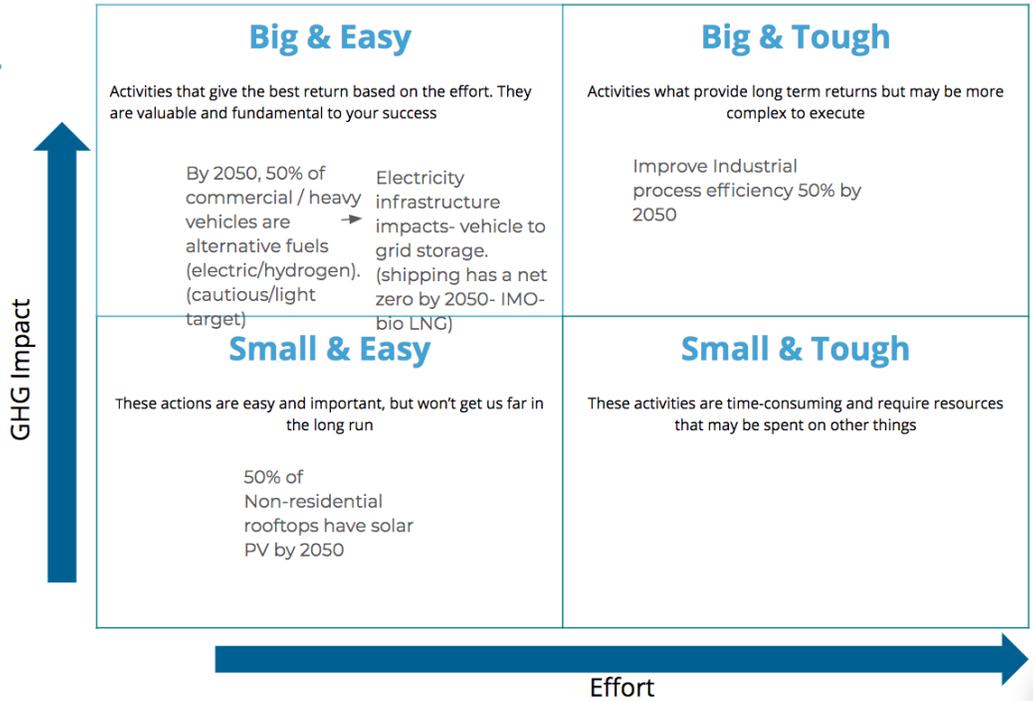
<p>Big & Easy</p> <p>Activities that give the best return based on the effort. They are valuable and fundamental to your success</p> <p>100% of the municipal fleet is electric by 2035</p> <p>100% of new commercial buildings meet Net-zero, Passive House, or equivalent by 2030</p>	<p>Big & Tough</p> <p>Activities what provide long term returns but may be more complex to execute</p> <p>80% of municipal buildings are Net-Zero by 2035, 100% by 2050</p>
<p>Small & Easy</p> <p>These actions are easy and important, but won't get us far in the long run</p> <p>100% of new multi-family developments, and new subdivisions meet Net-zero, Passive House, or equivalent standard by 2030.9</p>	<p>Small & Tough</p> <p>These activities are time-consuming and require resources that may be spent on other things</p>

Effort

Group 3
Actions Bank



Group 4
Actions Bank



Group 5

Actions Bank

GHG Impact ↑

<p>Big & Easy</p> <p>Activities that give the best return based on the effort. They are valuable and fundamental to your success</p> <p>65% of internal trips (within Hamilton) are made by walking, cycling, and transit by 2050</p>	<p>Big & Tough</p> <p>Activities what provide long term returns but may be more complex to execute</p> <p>100% of transit in Hamilton is electric by 2050</p> <p>By 2040, 90% or greater of personal vehicle sales in Hamilton are electric</p>
<p>Small & Easy</p> <p>These actions are easy and important, but won't get us far in the long run</p>	<p>Small & Tough</p> <p>These activities are time-consuming and require resources that may be spent on other things</p>

Effort →

Group 6

Actions Bank

GHG Impact ↑

<p>Big & Easy</p> <p>Activities that give the best return based on the effort. They are valuable and fundamental to your success</p> <p>By 2050 all district energy systems are fuelled with renewable energy. Hamilton adds 5 MW of community-scale solar PV per year from 2022-2050</p>	<p>Big & Tough</p> <p>Activities what provide long term returns but may be more complex to execute</p> <p>Hamilton has a fully operational 300 MW Wind Farm inside or outside the city boundary by 2050</p>
<p>Small & Easy</p> <p>These actions are easy and important, but won't get us far in the long run</p>	<p>Small & Tough</p> <p>These activities are time-consuming and require resources that may be spent on other things</p>

Effort →