

Energy Evolution: Ottawa's Community Energy Transition Strategy

Technical Briefing

October 9, 2020



Agenda

- Staff Report Recommendations
- Council Directions
- Overview of Energy Evolution:
 - Energy and emissions model outputs
 - Financial analysis
 - Proposed projects
- Consultation and Engagement
- Reporting and Next Steps



Staff Report Recommendations

That the Standing Committee on Environmental Protection, Water, and Waste Management recommend that Council:

1. Receive the final report for Energy Evolution: Ottawa's Community Energy Transition Strategy and supporting documents attached as Document 1 through Document 9 and summarized in this report;
2. Receive the list of projects identified in Documents 7 and 8 to be more fully developed by staff and brought before Standing Committee and Council for approval, where required;
3. Direct staff leading new or updates to City plans, strategies and policies to take into consideration the energy emissions model and the City's GHG reduction targets in the development of such plans, strategies and policies; and
4. Approve that the 2019 Hydro Ottawa Dividend Surplus of \$2.6M be used to fund the proposed spending plan attached as Document 11 and summarized in this report.



Council Directions (2015-2020)



Climate Change Master Plan

Mitigation

Reduce greenhouse gas emissions

Emissions
reduction
targets

Emissions
inventory

Energy
Evolution

Adaptation

Build climate resilience

Climate
projections

Vulnerability
assessment

Climate
resiliency
strategy



Ottawa's GHG emission reduction targets

Community

2012 baseline

2025

43%

2030

68%

2040

96%

2050

100%

Corporate

2012 baseline

2025

30%

2030

50%

2040

100%



Energy Evolution: Ottawa's Community Energy Transition Strategy



2050: POWERED BY CLEAN, RENEWABLE ENERGY



Energy Evolution Process and Timelines

Draft Reports

14 Pathway Studies
Draft Energy and
Emissions Model

2016-2019

Final Report

Final Energy and
Emissions Model
Financial Analysis
20 priority projects

2020

Implementation

Ongoing engagement
Committee and
Council approvals
Budget approvals

2021 - 2025



Final Energy Evolution Strategy

- Describes:
 - What it will take to achieve the 100% scenario
 - Co-benefits
 - Financial analysis
 - 20 projects to be implemented over the next five-years (2020-2025)
 - Risks to implementation
- Staff report includes COVID-19 considerations and proposed spending plan for Hydro Ottawa dividend surplus



The benefits of Energy Evolution



Reduce the impact of climate change



Improved local economy and job creation



Healthier public



Energy security and resiliency



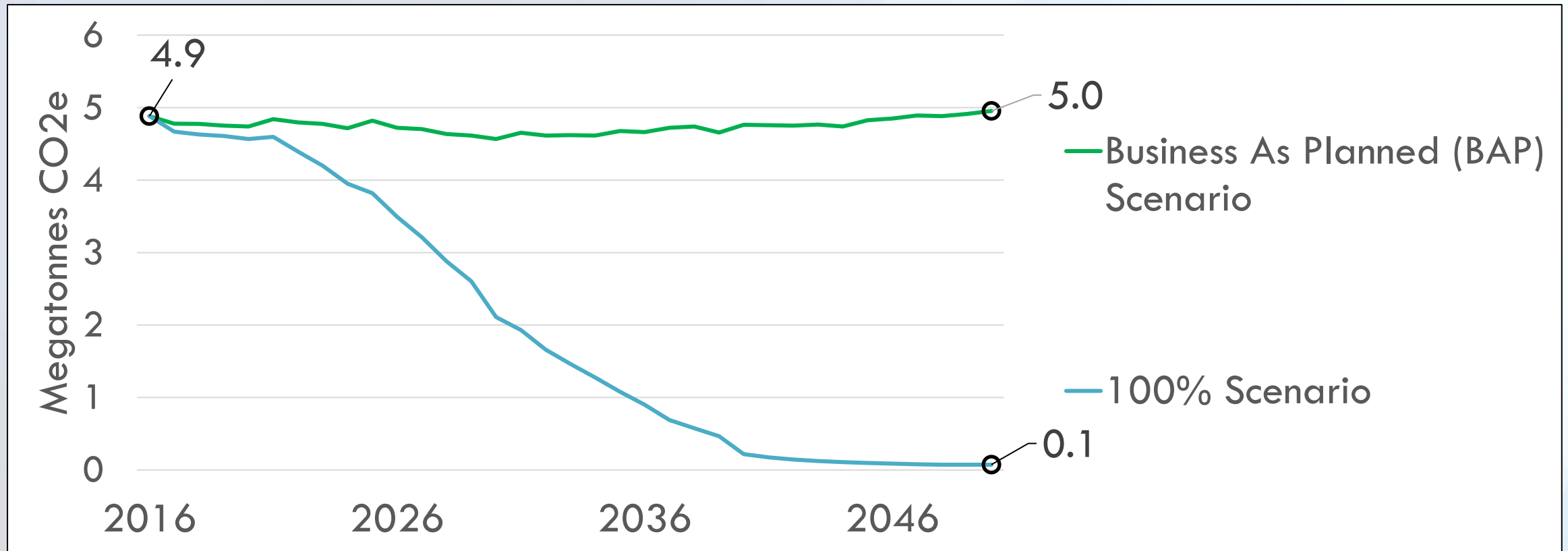
Equity and inclusion



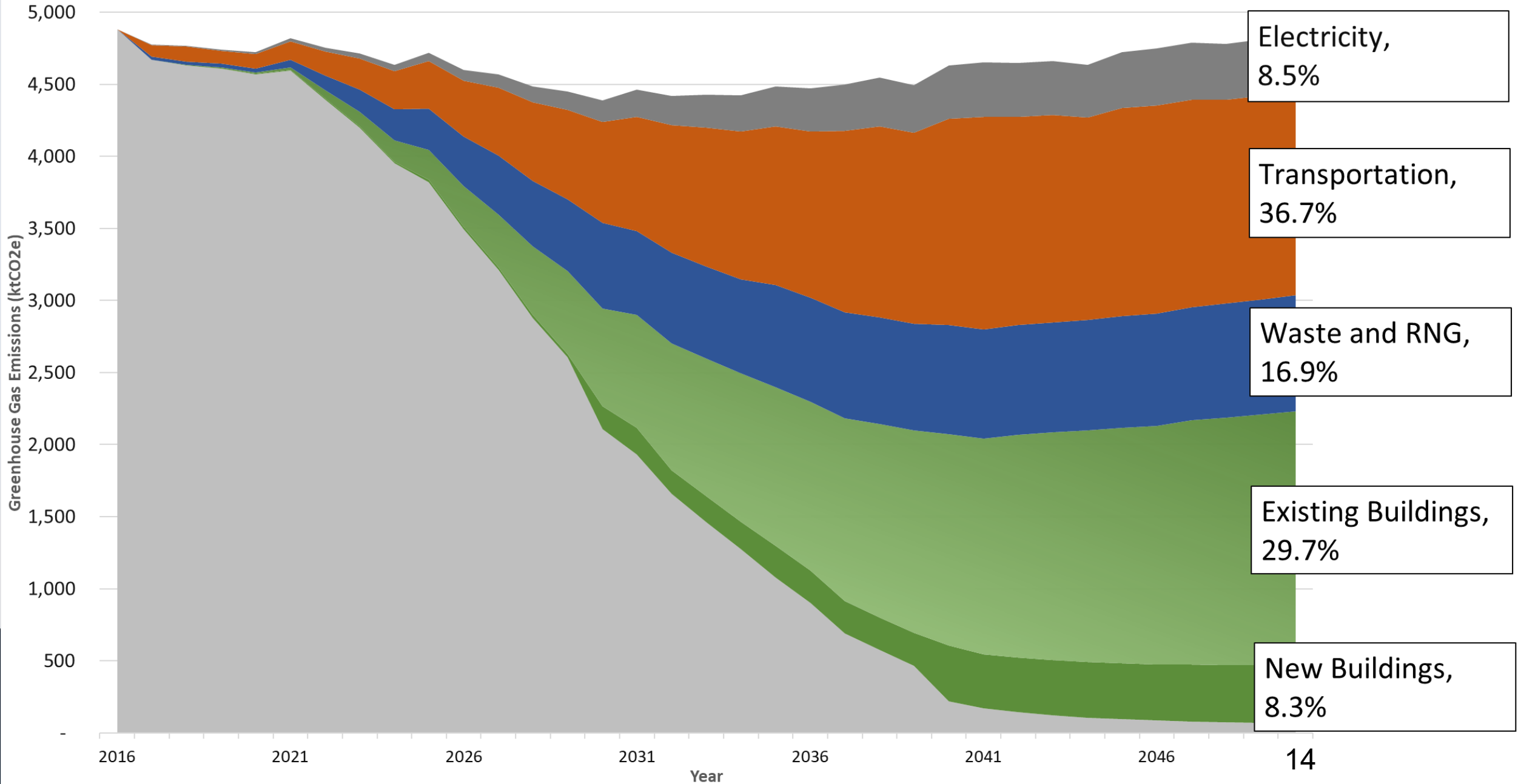
What will it take to achieve Ottawa's GHG emission reduction targets?



BAP Scenario vs. 100% Scenario



What it will take to achieve the 100% scenario (by sector)



Top Five Actions from the Model



1. ELECTRIFY PERSONAL VEHICLES



2. RETROFIT EXISTING RESIDENTIAL BUILDINGS



3. DIVERT ORGANICS AND CREATE RENEWABLE NATURAL GAS



4. RETROFIT EXISTING COMMERCIAL BUILDINGS



5. TRANSITION TO ZERO EMISSION COMMERCIAL FLEETS



What actions are proposed over the short-term (2020-2025)?



Priority Projects (2020-2025)

- 20 community and municipal projects over the next five years
- Two to five page project overviews were developed for each project and identifies:
 - ☐ Co-benefits
 - ☐ Advocacy
 - ☐ Timelines
 - ☐ Risks
 - ☐ City partners
 - ☐ Resources
 - ☐ Project Metrics
 - ☐ Community partners
 - ☐ Financials
- Projects are contingent on future Standing Committee and Council approval and future staff and budget pressures



Proposed Projects – Land Use & Buildings

Sector	Proposed Projects
Land Use	<ul style="list-style-type: none">• Integration of energy and climate mitigation priorities into the new Official Plan and supporting master plans (City)
Buildings	<ul style="list-style-type: none">• Residential Building Retrofit Accelerator Program (City/Comm)
	<ul style="list-style-type: none">• Commercial Building Retrofit Accelerator Program (City/Comm)
	<ul style="list-style-type: none">• Building Retrofits through Local Improvement Charge Program (City)
	<ul style="list-style-type: none">• Energy Community Improvement Plans (City)
	<ul style="list-style-type: none">• Community Building Heating Strategy (City)
	<ul style="list-style-type: none">• High Performance Development Standard (City)
	<ul style="list-style-type: none">• Municipal Buildings Renewal and Retrofit Program (City)
	<ul style="list-style-type: none">• Update Municipal Green Building Policy (City)

Proposed Projects – Transportation & Waste and RNG

Sector	Proposed Projects
Transportation	<ul style="list-style-type: none">• Personal Vehicles Electrification Strategy (City/Comm)• Zero Emissions Commercial Vehicles Strategy (City/Comm)• Municipal Green Fleet Plan Update (City)• Alternative Energy Sources for Transit (City)• Transportation Mode Shift (City)
Waste and Renewable Natural Gas	<ul style="list-style-type: none">• Organics Resource Recovery Strategy (City/Comm)• Renewable Natural Gas Strategy (City)



Proposed Projects – Electricity & Enablers

Sector	Proposed Projects
Electricity	<ul style="list-style-type: none">• Electricity Resource Strategy (City)
Enablers	<ul style="list-style-type: none">• Climate Ambassadors Network (City/Comm)• Climate Change Education and Outreach Program (City/Comm)• Fund the Evolution (City)



Model Metrics to be Achieved by 2025 (Examples)

Sector	Proposed Projects	Model Metrics
Buildings	<ul style="list-style-type: none">Residential Building Retrofit Accelerator Program	<ul style="list-style-type: none">17% of existing residential buildings renovated or replaced
	<ul style="list-style-type: none">Commercial Building Retrofit Accelerator Program	<ul style="list-style-type: none">20% of existing commercial buildings transition to heat pumps
Transportation	<ul style="list-style-type: none">Personal Vehicles Electrification Strategy	<ul style="list-style-type: none">7% of personal vehicle sales are EVs in 2025
Waste	<ul style="list-style-type: none">Eliminate Organics from Landfill	<ul style="list-style-type: none">Significant increase in organics diversion starting in 2023

What will it cost to achieve Ottawa's GHG emission reduction targets?



Financial Analysis

- Community-wide financial analysis of actions
- Represents investments required and potential savings for Ottawa
- High level estimates that are currently uncommitted and unfunded capital and operational needs
- Analysis does not commit the City or partners or recommend how to address funding gaps



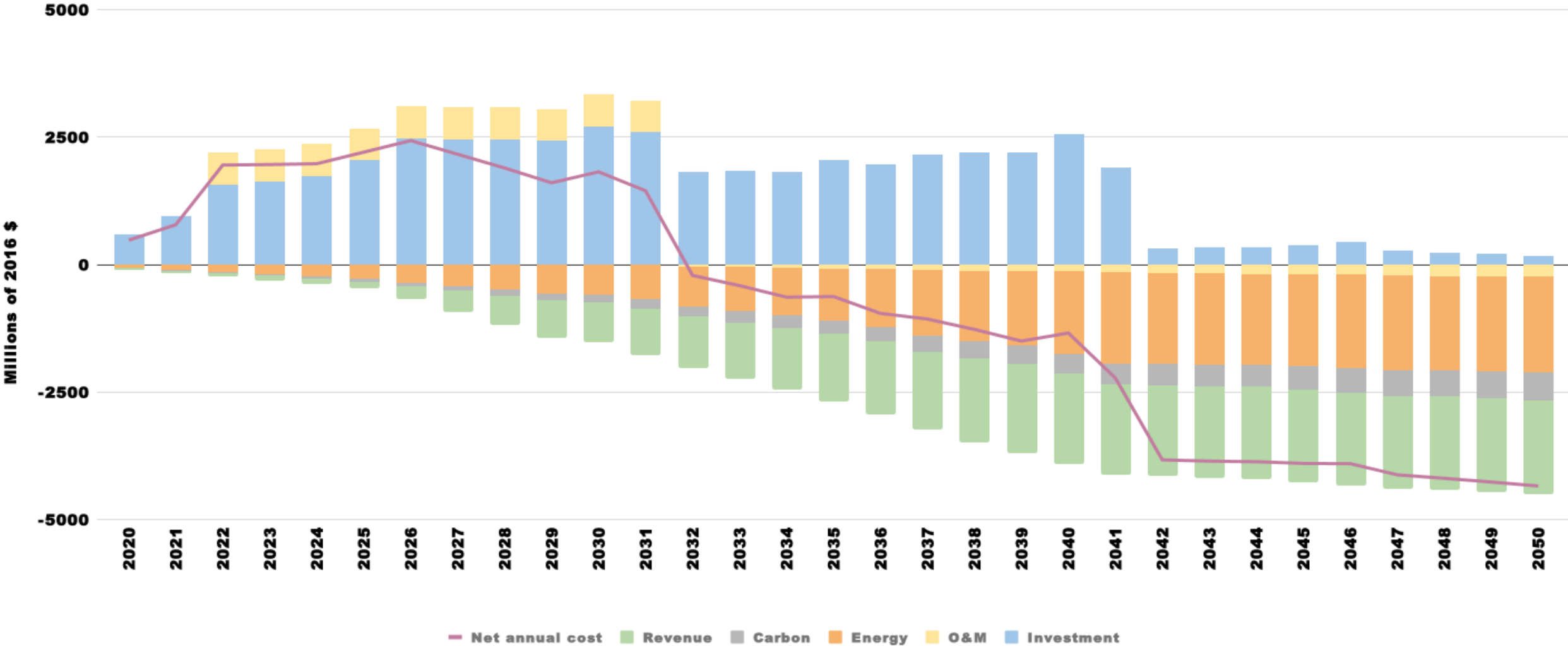
Financial Net Value to Society

- Billions

	Undiscounted	Present value In \$2020
Capital investments	(-\$57.4)	(-\$31.8)
Operations and maintenance savings	\$22.6	\$9.0
Energy savings	\$70.9	\$18.1
Carbon price savings	\$13.4	\$4.0
Revenue from local generation	\$38.2	\$13.1
Community-Wide Net Return	\$87.7	\$12.4



Year-over-year Investment and Returns



Financial Breakdown by Sector

- \$2020 Billions

Sector	Estimated Cost	Estimated Net Return by 2050	Estimated Net Return over Life of Investment
Land Use and Growth Management	\$0	\$0	\$0
Buildings (New and Existing)	(-\$17.7)	(-\$6.0)	\$0.4
Transportation	(-\$7.9)	\$3.9	\$4.8
Waste and Renewable Natural Gas	(-\$0.2)	\$0.01	\$0.02
Electricity	(-\$6.0)	\$4.8	\$7.2
Total	(-\$31.8)	\$2.7	\$12.4



Collective Effort to Fund the Evolution

- City alone will not accomplish the scale of investment required
- Need for future revenue, private capital and funding from senior levels of government
- Need for future annual City funding to expand staffing and resources
- City will help residents and industry in a cost-effective way and catalyze private investment



Current Funding Proposals

Approved

- Natural Resources Canada funding for the installation of 26 electric vehicle chargers

Awaiting decision

- Federation Canadian Municipalities funding to launch a proposed Better Homes Loan Program

To be Submitted

- Independent Electrical Systems Operator (IESO) Grid Innovation Fund to support development of High-Performance Development Standard for new subdivision requirements



Hydro Ottawa Dividend Surplus Spending Plan

- \$2.6M to advance 13 of the 20 Energy Evolution projects across three departments (PIED, RCFS, and PWES)
- Will be used to leverage federal and provincial funds, where possible
- Examples of projects include:
 - Municipal building energy conservation, efficiency and fuel switching projects
 - Staffing to support EV work, including new charging infrastructure
 - Energy projects at ROPEC
 - Communication, education and engagement programs



Risks to Implementation

- Insufficient financial support
- Higher capital and operating costs, or lower saving and revenues
- Regulatory barriers and compliance issues
- Lack of uptake or buy-in from residents, businesses, industry
- Diverging interpretations on how best to achieve the 100% scenario
- Competing Council or departmental priorities
- Lack of alignment between model and plans/strategies that directly relate to Energy Evolution
- Aggressive implementation timelines
- Changes in behavior, policy, and best practices related to COVID-19.



Climate change and COVID-19

- COVID-19 demonstrates the potential to mobilize significant resources and take widespread action based on scientific evidence
- Small decline in GHG emissions due to pandemic
- Not a significant impact on what we need to do to achieve targets
- Staff will continue to monitor trends and advocate for stimulus funding



To mitigate risks, the project team will:

- Continue to work with City staff at all levels across the corporation, community partners, other levels of government, and the public to build out projects
- Share information and recommendations with the Tiger Team, the Climate Change Council Sponsors Group, the Environmental Stewardship Advisory Committee, a community-wide governance structure, and community partners
- Continue to work with municipal colleagues across the country to share information, best practices, and lessons learned.



Who did we work with to develop Energy Evolution?



Thank You to Our Partners and Our Consultants!

Our Partners

- Energy Evolution Sounding Board and technical working groups
- Council Sponsors Groups
- Mayor's Office
- City Manager's Office
- City Departments
- Ottawa Public Health

Our Consultants

- Sustainability Solutions Group
- whatIf? Technologies Inc
- Leidos Canada



City of Ottawa Engagement – Quick Facts

Since 2016:

3

Council
Sponsor
Groups

7

ESAC
presentations

6

City
departments

Countless
meetings
and one-on-
one
discussions

- 40+ key City staff from across the corporation assisted in the development of the project overviews and review of the strategy
- Creation of the General Manager Tiger Team

Community Engagement – Quick Facts

Since 2016:

200+

Private and
public
stakeholders

90+

organizations

9

technical
working
groups

45+

meetings

Since August 2020:

2

Sounding
Board
meetings

2

Public
information
sessions

450+

Participants

310+

unique
questions

Engage Ottawa webpage

Energy Evolution: Ottawa's Community Energy Transition Strategy

Energy Evolution: Ottawa's Community Energy Transition Strategy is the action plan for how Ottawa will meet the targets to reduce greenhouse gas emissions from the community by 100 per cent by 2050. Its vision is to transform Ottawa into a thriving city powered by clean, renewable energy. Realizing Energy Evolution's vision will require concerted efforts and collaboration across all sectors of the community.

Energy Evolution is one of eight priorities in the [Climate Change Master Plan](#). The Climate Change Master Plan is the City's overarching framework to reduce greenhouse gas emissions and respond to the current and future events of climate change.

Energy Evolution will be presented to the Standing Committee on Environmental Protection, Water and Waste Management in the fall. We will be using this page to keep you up to date on Energy Evolution and upcoming engagement opportunities. Sign up for updates to be notified by email when new information and opportunities are added.



Who's Listening

[Energy Evolution](#)

Climate Change and Resiliency
City of Ottawa

Email energyevolution@ottawa.ca

EE

Upcoming events

[Energy Evolution public information session](#)
August 19 2020

[Energy Evolution public information session](#)
August 20 2020

Quiz

[UPDATES](#)

[INFORMATION SESSIONS](#)

[ENERGY EVOLUTION SURV...](#)

engage.ottawa.ca/energy-evolution



What are our next steps and how will we report back?

Climate change legislative agenda

Agenda Item	Committee Date	Council Date
Energy Evolution Final Report <ul style="list-style-type: none">• Energy Evolution Strategy• Hydro Ottawa dividend surplus spending plan	October 20	October 28
Annual Update on the Climate Change Master Plan to SCEPWWM <ul style="list-style-type: none">• Update on CCMP priorities• 2019 GHG Inventories	December 15	January (TBC)



Reporting

Annually:

- Bring forward status update on the Energy Evolution projects and recommendations to advance projects as part of the Climate Change Master Plan annual updates

In five years:

- Rerun energy and emissions model to assess how the City and community are tracking towards the 100% scenario
- Complete full review of Climate Change Master Plan in 2025



Next Steps

- Continue working with internal and external stakeholders to implement Energy Evolution projects and create a multi-year budget for implementation project spending
- Continue advocating for funding and policy changes at senior levels of government
- Start shifting focus to climate lens and governance discussions to embed climate considerations across all City and community business
- Deliver department specific presentations starting in early 2021 to support on-going alignment of priorities, workplans and budgets



Thank you for attending the technical briefing.

Questions for the Energy Evolution project team?

Please reach out at energyevolution@ottawa.ca