



Whitby Sustainability Advisory Committee Agenda

Wednesday, December 6, 2023, 7:00 p.m.

Virtual Meeting

This Advisory Committee meeting will be held in a hybrid meeting format. Members of the public will be permitted to attend this meeting virtually or in-person. Those wishing to attend the meeting virtually are required to email clerk@whitby.ca by noon on the business day prior to the meeting in order to obtain the virtual meeting link.

Should you wish to provide comments regarding a matter being considered below, please submit written correspondence and/or a Delegation Request Form.

- **To submit written correspondence**, please email the Office of the Town Clerk at clerk@whitby.ca by noon on the business day prior to the meeting. Correspondence must include your full name, address, and the item on the agenda that your correspondence is related to.
- **To speak during the Advisory Committee meeting either in-person or virtually**, please submit a [Delegation Request Form](#) online to the Office of the Town Clerk by noon on the business day prior to the date of the meeting. Should you be unable to access a computer, please call 905.430.4315 to speak with a Staff Member in the Office of the Town Clerk.

A Revised Agenda may be published on a later date. Late items added or a change to an item will appear with an asterisk beside them.

1. **Call to Order**
2. **Declarations of Conflict of Interest**
3. **Approval of Previous Minutes**
Recommendation:
That the Whitby Sustainability Advisory Committee minutes of October 4, 2023 be approved.
4. **Presentations**
 - 4.1 Brian Kelly, Member, Whitby Sustainability Advisory Committee
Re: The Kelly Household's Journey Towards Zero Carbon and Sustainability Finance Forum
5. **Delegations**
6. **General Business and Reports**
 - 6.1 Introductions of New Members

6.2 Project Planning and Work Plan Review

6.3 2024 Sustainability Events

7. **Correspondence**

8. **Council Update**

9. **Other Business**

10. **Next Meeting**

Wednesday, January 3, 2024 - 7:00 p.m.

11. **Adjournment**

Recommendation:

That the meeting adjourn.



Whitby Sustainability Advisory Committee Minutes

October 4, 2023, 7:00 p.m.
Hybrid Meeting
Whitby Town Hall

Present: Wenda Abel
Sara Best, Vice-Chair
Andrea Cecchetto
Anahita Jami
Brian Kelly
Patti Mavins
Catherine Philogene
Bryan Widner, Chair

Regrets: Robynne Dunn
Janet Dignem

Also Present: Councillor Lundquist, Mayor's Designate
Sarah Shields, Staff Liaison, Project Manager, Sustainability and
Climate Change
Heather Ellis, Council and Committee Coordinator (Recording
Secretary)

1. Call to Order
2. Declarations of Conflict of Interest

There were no declarations of conflict of interest.

3. Approval of Previous Minutes

Recommendation:

Moved by Sara Best

That the Whitby Sustainability Advisory Committee minutes of September 6, 2023 be approved.

Carried

4. Presentations

There were no presentations.

5. Delegations

There were no delegations.

6. General Business and Reports

6.1 Whitby Sustainability Advisory Committee Annual Report

Bryan Widner advised that the draft Whitby Sustainability Advisory Committee Annual Report would be presented for review at the Committee's November meeting. He further advised that the final draft would be approved by the Committee during the Committee's December meeting.

Sarah Shields provided a copy of a previous Annual Report for the Committee to review.

Discussion ensued regarding:

- assigning sections of the Annual Report to Members for review;
- attaching the Committee's Work Plan;
- including a list of presentations received by the Committee in 2023;
- an overview of the Committee's achievements in 2023; and,
- determining actionable items and areas of focus for 2024.

6.2 Project Planning and Work Plan

Bryan Widner requested feedback from the Committee regarding areas of focus for project planning and the Work Plan. Mr. Widner advised that several Members expressed interest in tree planting and vegetation management as well as planting sustainable species. He stated that additional key priorities included establishing compost pick-up for multi-residential buildings, and education pertaining to climate change, sustainability, natural ground cover, and invasive species management.

Discussion ensued regarding:

- the United Nations (UN) recommendations for managing climate change;
- creating a framework for the Work Plan that models the 'One Planet Living Principles' framework; and,
- aligning the Committee's goals and actions to the Town's Community Strategic Plan, Sustainability Plan, and Council Goals; and,
- establishing a deadline for Members to submit their project and Work Plan ideas.

6.3 2023 Sustainability Events

Waste Reduction Week - October 16 - 22, 2023

Sarah Shields advised that several events were planned for October 21, 2023 in celebration of Waste Reduction Week including a Waste-Themed Family Storytime and Craft, Repair Cafe, Community Swap, and Drop off Difficult-to-Recycle Waste event.

7. Correspondence

There was no correspondence.

8. Council Update

Councillor Lundquist requested that the Committee provide feedback on opportunities regarding environmental issues that come before Council.

9. Other Business

9.1 Posting Information Regarding Sustainability

Wenda Abel suggested that URL links be included in the Town's media releases and social media posts for residents to access additional information regarding the Town's sustainability initiatives and activities. Ms. Abel used a recent example, 'Help Choose Whitby's Official Tree Survey', to offer suggestions for future media releases.

9.2 Sustainability Updates

Sarah Shields provided updates regarding:

- the Emergency Preparedness Survey launch; and,
- the Committee's annual budget.

10. Next Meeting

Wednesday, November 1, 2023 - 7:00 p.m.

11. Adjournment

Recommendation:

Moved by Brian Kelly

That the meeting adjourn.

Carried

The meeting adjourned at 8:25 p.m.

The Kelly Household's Journey Toward Zero Carbon

CACOR Webinar

September 27, 2023

Updated: Nov. 30/23



Four Steps so
far + one more
to come



New House Retrofit



Electric Vehicle



Photovoltaic System



Heat Pump

Base Case Conditions 2008

House:

- We bought a new house in 2008 (built in 2007)
- 2-storey, detached house, 4 bedrooms with walk-out basement
- 2,460 sq. ft.
- Natural gas furnace (Trane 94% efficient) and natural gas fireplace
- Electric water heater (rental)

Your typical suburban “code-built” house



Vehicle:

- Bought a new 2008 Toyota Prius (parallel hybrid) – about 30% more fuel efficient than a comparable Internal Combustion Engine (ICE) car
- Travelled about 22,000 km annually

Occupants:

- Brian and Ruth Kelly, empty nesters, now 76, lifelong environmentalists and “Early Adopters” of green technology



Step 1: New House Retrofit

After purchase in Summer of 2008, we added:

- Attic insulation (blown in cellulose insulation, from R32 to R45) (\$583)
- In-line, gas-fired water heater to replace electric WH*
- Heat recovery ventilator
- High-efficiency air conditioner (15 SEER) (\$3,400)
- Finished basement, added wall insulation (from R8 to R20)
- Caulking and weatherstripping to reduce air leakage
- Gas fireplace in basement (infra red)
- Electric lawn mower
- New shingles in 2018, changed from black to light brown/yellow, “high-albedo” shingles
- Waterproof membrane under shingles over *entire* roof and larger eavestroughs
- High-efficiency appliances (esp. refrigerator, clothes washer, dish washer) and lighting (incandescent to CFL to LED)





Step 2: Electric Vehicle

- Replaced previous Toyota Prius (10 years old)
- Took delivery of a Tesla Model 3 on June 6, 2018 (our 48th Anniversary)
- Included long range battery, enhanced autopilot, red colour and premium upgrades
- Total price: \$73,300 + taxes and fees = \$83,169
- Got rebate of \$14,000 from Ontario Government!
- Added a Tesla charger/connector (cost \$715) to our garage at an installation cost of \$1,271 for a total cost of \$1,986
- Received a rebate of \$858 from the Ontario Government!
- Have enjoyed fuel savings and maintenance savings for over 5 years
- **Probably the most impactful step in our decarbonization journey**

Costs and Savings from EV

- Cost of new Tesla Model 3: \$83,169 - \$14,000 in rebate = \$69,169
- Cost of comparable new ICE car: approx. \$45,000 msrp plus taxes & fees = \$51,000*
- Differential approx. \$18,000
- Fuel savings between Gasoline and Electricity about 5:1
- Travel about 17,000 km annually
- Estimated fuel saving (at today's gas costs): \$2,000 per year*
- Maintenance costs: 5-year total maintenance costs for our Tesla M3 = \$400 (including brake maintenance)
- Estimated maintenance savings: \$ 500 per year*
- Total annual savings (gas + maintenance): \$2,500 per year
- **Simple payback period 7 years** (without considering depreciation)



Step 3: Photovoltaic system (PV)

- In late June 2022 added a PV system to our house (after many years of procrastination)
- 9.9 kW system
- 22 panels (450 W each from Canadian Solar)
- Installed by TeraWatt Solar of Markham
- Designed to produce 10,708 kWh per year = 120% of our base annual electricity consumption of 8,902 kWh per year
- Actually produced just over 12,000 kWh in first year
- Net metering contract with Elexicon Energy
- Cost \$20,935 including all permits, installation and taxes





Step 4: Heat Pump

- In July 2022, we had our natural gas furnace and air conditioner (both 14 -15 years old) removed and replaced by a Mitsubishi Zuba high-efficiency, cold-climate heat pump (with a 10kW backup electric resistance heater)
- Probably the top-of-the-line heat pump
- Installed by Infiniti Home Comfort of Whitby
- Total cost: \$24,747 including installation and taxes
- Replacement cost for new furnace and AC approximately \$10,000
- Net cost of \$14,747
- House seems more comfortable than previously



Costs for Steps 3 and 4

Costs:

| | |
|--|-----------------|
| • Pre and Post Audit (Windfall Ecology Centre) | \$ 706 |
| • PV System | \$20,935 |
| • Heat Pump | <u>\$24,747</u> |
| Total | \$46,388 |

Rebates:

| | |
|--|--|
| • Federal Greener Homes Program for audit | \$ 600 |
| • Federal Greener Homes Program for retrofit | \$5,000 |
| • Durham Greener Homes Program for retrofit | <u>\$6,481</u> |
| Total | \$12,081 (26% of costs) |

Net Cost: \$34,307



Savings for Steps 3 and 4

- Comparing natural gas and electricity costs for the first year of operation to the previous year, July 1 to June 30

| \$ per Year | Base Year | First Year Operation | Saving |
|-------------|-----------|----------------------|--------|
| Natural Gas | \$1350 | \$493 | \$857 |
| Electricity | \$1573 | \$1538 | \$35 |
| Total | \$2923 | \$2031 | \$892 |

- Natural gas bills down dramatically (just water heating, small amount for fireplace and monthly “Customer Charge” of \$22.88 plus GST= \$310 annually)
- natural gas commodity costs have increased dramatically (about 65%) over the last year
- Net metering contract with Elexicon is complex but should increase savings in year 2



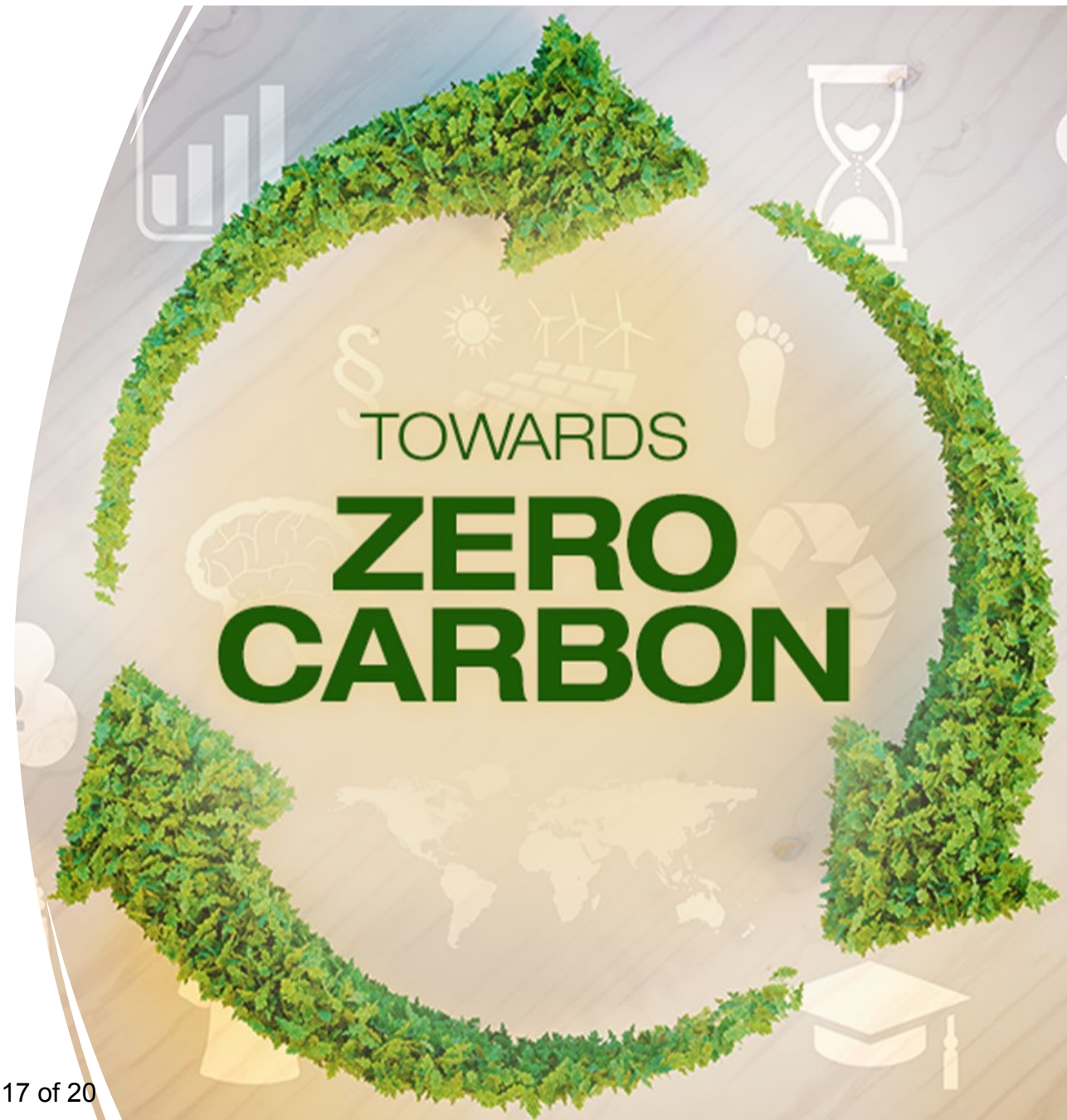
Where Do We Stand on Carbon?

Probably about a **90% emissions reduction in carbon** compared to Base Case

Step 5:

- Replace our gas-fired, in-line water heater with a heat pump water heater (**delivered Nov. 27, scheduled for installation in December**)
- Disconnect natural gas service (save \$310 per year)
- Convert one fireplace to electric

Then, **“Goodbye Fuel World!”**



Don't Forget the Carbon Fee-bate

- Federal Carbon Pollution Pricing Program in most provinces (PP talk: “The Carbon Tax”)
- Levied on fuels at retail level (at current rate of \$65/tonne) and rebated to all households at a flat rate of \$732 per year for a 2-person household (in Ontario)
- We currently pay \$32 annually (on small amount of natural gas) and receive \$732 annually in quarterly Climate Action Incentive Payments (CAIP)
- Net income of \$700 per year currently
- Will rise each year as rate rises from \$65 to \$170/tonne in 2030
- CAIP becomes Climate Action **Reward** Payment (CARP) for carbon savers

Total Financial Savings

| Savings per Year | Currently | After Step 5 |
|---------------------|-----------|--------------|
| Car (estimated) | \$2,500+ | \$2,500+ |
| House (measured) | \$892 | \$1,385+ |
| Carbon price | \$700 | \$732++ |
| Total | \$4,092 | \$4,617++ |

Lessons Learned

- Include vehicles in your carbon journey; probably half of a household's carbon emissions are from vehicle(s)
- Vehicle decision is relatively easy and quick
- Phase your home retrofits, starting with thermal shell and efficiency upgrades and ending with PV*
- Home retrofits will take time
- Government rebates are important to nudge decisions
- Don't forget climate adaptation measures
- Make optimum use of auditors, advisors and rebate programs
- Choose installers carefully
- Don't forget Carbon Charge savings
- Do it for the carbon reductions; justify it by the economics
- Become a **“Carbon Influencer”**