



Electric Vehicle Council of Ottawa

May 25, 2026

Electric Vehicle Council of Ottawa Monthly Meeting

Agenda

- ▶ The latest Heat Pump technology, with Chris from Electrify613
- ▶ An update on Tesla Self-Driving, with Craig Sweetnam
- ▶ News
- ▶ Past and Future Events
- ▶ Roundtable



Number of zero-emission buses

As of: April 8, 2026

Total ZEBs

Total ZEBs in our fleet: 90

Total ZEBs received: 109

Number of zero-emission buses

As of: May 14, 2026

Total ZEBs

By end of 2027:
354 →

Total ZEBs in our fleet: 111

Total ZEBs received: 127

Primer on latest generation of cold climate heat pumps



Chris Taggart
Electrify 613
electrify613.ca



Electrify613

Join our thriving Slack community of Ottawa homeowners and experts working together to reduce carbon emissions and electrify homes across the city.

[Join Our Slack Community](#)

[Browse Resources](#)

500+

Community Members

Find

Trusted Contractors

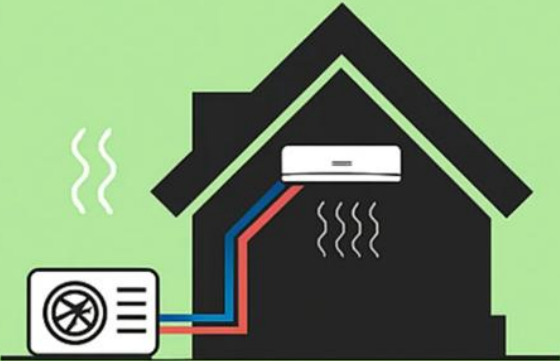
Share

Successful Retrofits

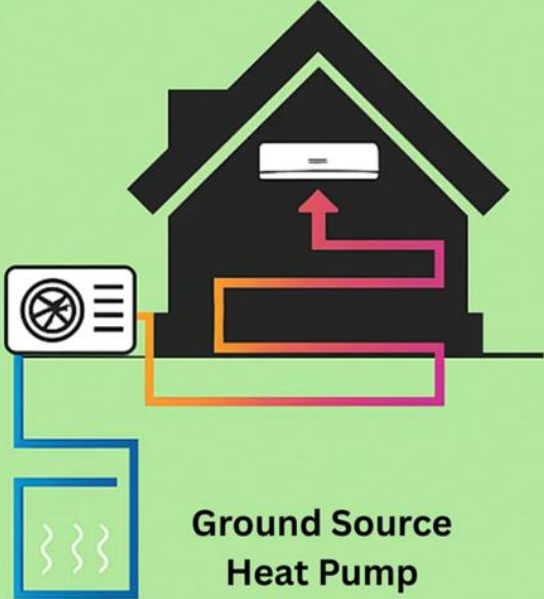
Why Join Our Community?

Connect with hundreds of Ottawa homeowners and experts who are leading the way in home electrification and carbon reduction.

Do (air source) heat pumps work in the cold?



**Air Source
Heat Pump**



**Ground Source
Heat Pump**

Do (air source) heat pumps work in the cold*?

YES

Current “cold climate” heat pumps can maintain almost full heating output down to -25C and continue operating to -30C and below.

If needed, a supplemental heat source (gas furnace, electric elements) can be integrated for extreme cold or backup.

**Canadian climate zone 5 (Ottawa)*

Do (air source) heat pumps work in the cold?

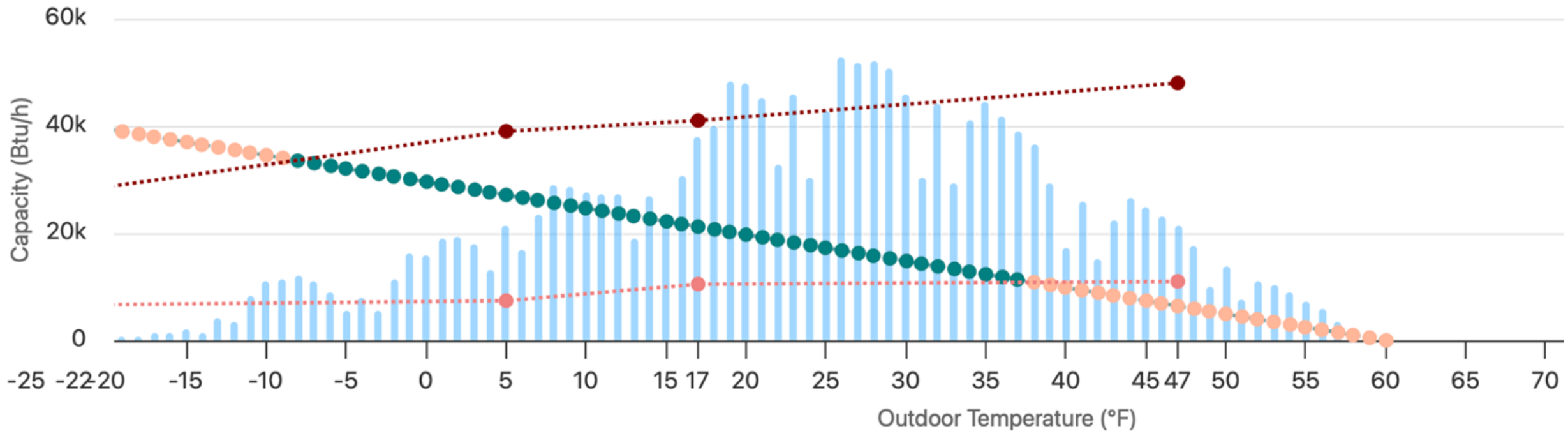
Prior to 2015 in North America, heat pumps would lose significant capacity by -15C. Energy Star released a “cold climate” heat pump certification requiring at least 70% heating capacity at -15C.

In 2021, the U.S. Department of Energy launched the Cold Climate Heat Pump Technology Challenge, including a test manufacturers could opt-in to for certifying heat pump performance at -26C.

- ***A heat pump having a test point below -15C is an indicator it is designed for cold climate operation***

Why is this difficult?

Example house heating load vs. heat pump output



- Heating Max. Cap.
- Heating Min. Cap.
- Heating Load Line (Btu/h)
- Annual Load x Hours (Btu/yr)

Technology improvements

- **Variable-Speed (Inverter) Compressors**: Instead of running at one fixed speed, these adjust continuously to match heating demand. Allows large compressors to throttle down in warmer weather while still having sufficient capacity in colder conditions.
- **Enhanced Vapor Injection (EVI)**: Injecting additional refrigerant part-way through the compression process boosts heat output and maintains capacity at very low ambient temperatures.
- **Advanced Defrost Algorithms**: Intelligent controls determine the optimal time and method for defrosting (e.g., based on humidity, temperature, and load) which improves overall efficiency and comfort.



-> Equipment cost: ~\$8,000

-> Output @ -25C: 30,400 BTU/h (**84% of rated capacity**)

-> Efficiency @ -25C: 183%

MITSUBISHI

Mitsubishi SUZ-AK36NLHZ
36,000 BTU Hyper Heat Pump
Outdoor Unit - R454B



-> Equipment cost: ~\$3,000

-> Output @ -30C: 27,800 BTU/h (**77% of rated capacity**)

-> Efficiency @ -30C: 159%

Midea EVOX 3 ton Outdoor R454B

Model#: MO1SE-H36B-2A

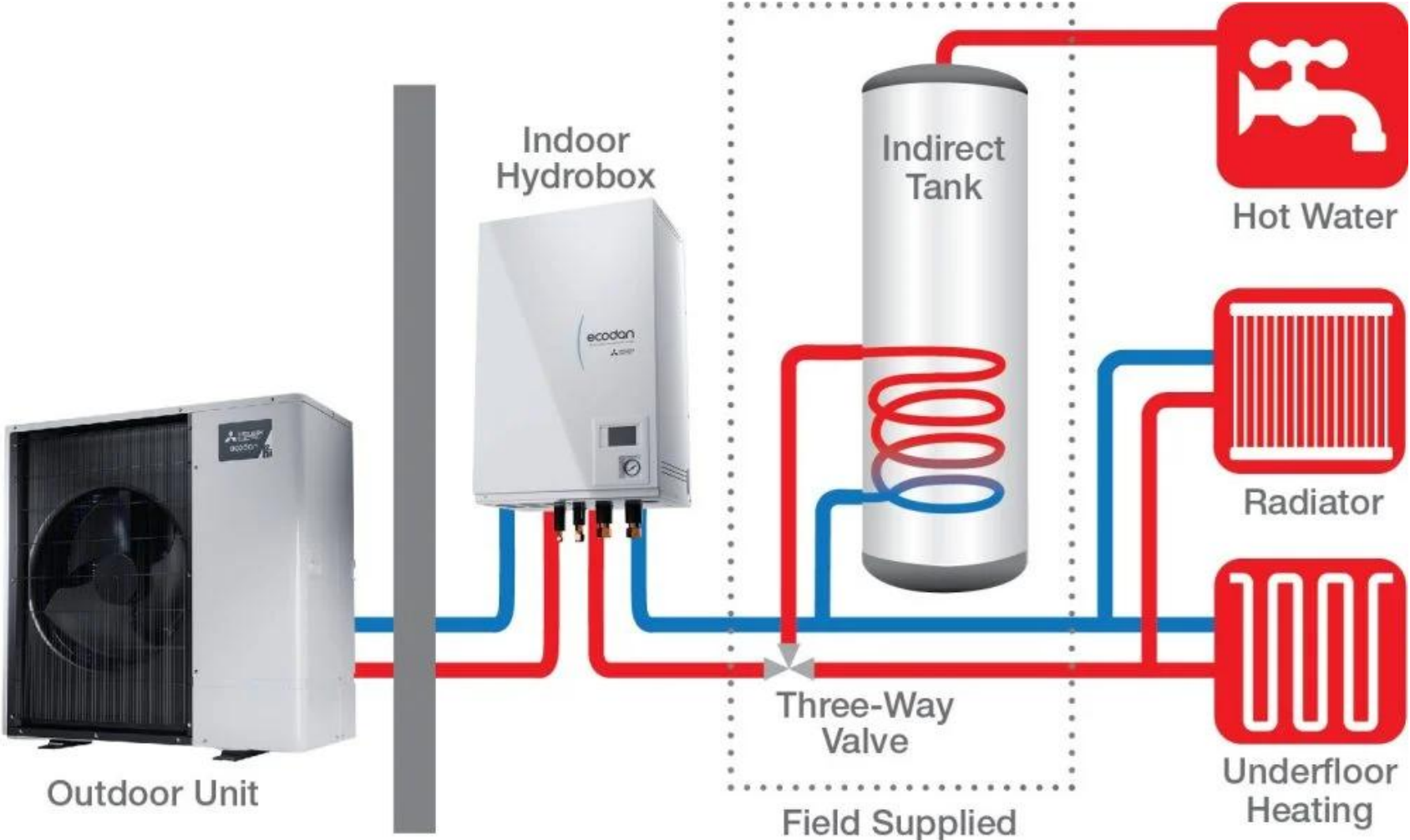
Will they get even better?

Yes, but for climates like Ottawa (and warmer) they don't really need to.

The heat pump itself is only 20-40% of the total expense of installation, so overall pricing likely not to change much. Skilled labour is the main cost.

In North America we likely will see more heat pumps in the coming years that can heat water and not just air (e.g. to replace boilers).

New EcoDan WUZ



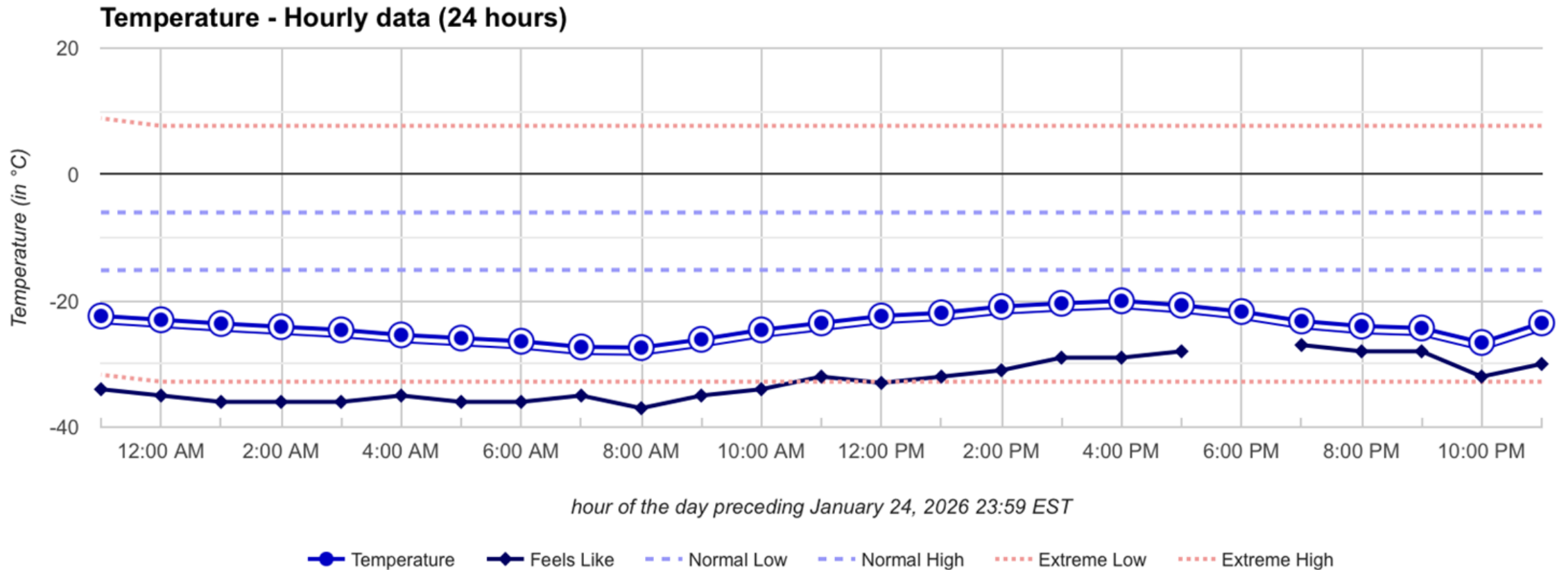
Many heat pumps still on the market with poor cold weather performance

What to watch out for

- No performance specs/measurements below -15C
- Little or no difference between minimum and maximum output
- No defrost sensor (relies on timer, often not sufficient in Ottawa)
- Not available as a fully electric system

Jan. 24, 2026 (Ottawa)

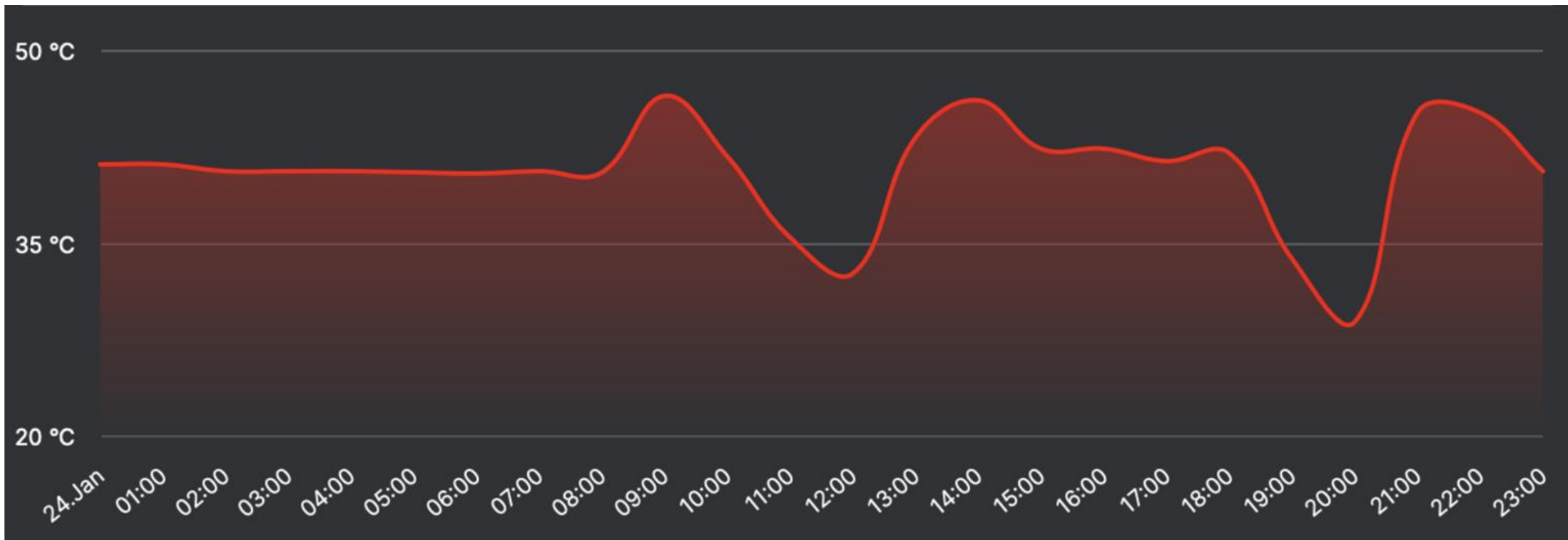
Reported air temperature was below -25C between 3AM and 10AM (low of -27.4C)



House 1 (1902 detached home): heat pump + gas furnace



House 1 (1902 detached home): heat pump + gas furnace

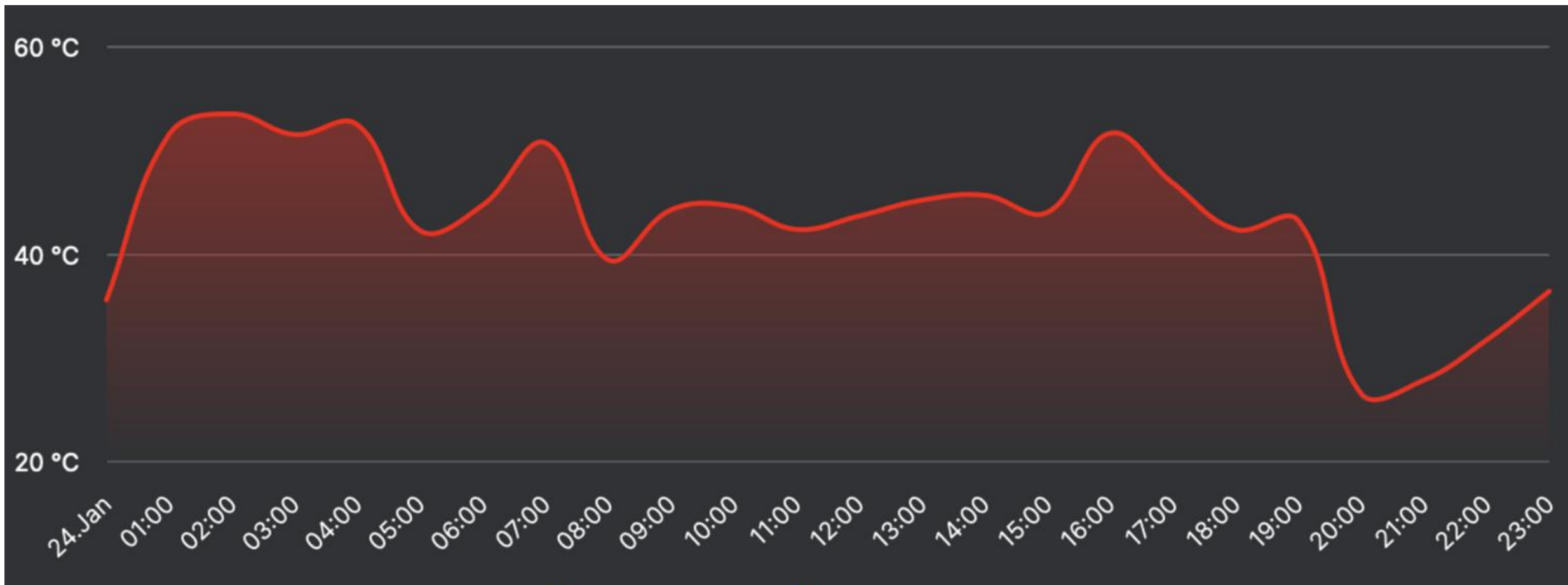


Measured air temperature at supply ductwork

House 2 (1950 detached home): heat pump + electric auxiliary heat



House 2 (1950 detached home): heat pump + electric auxiliary heat

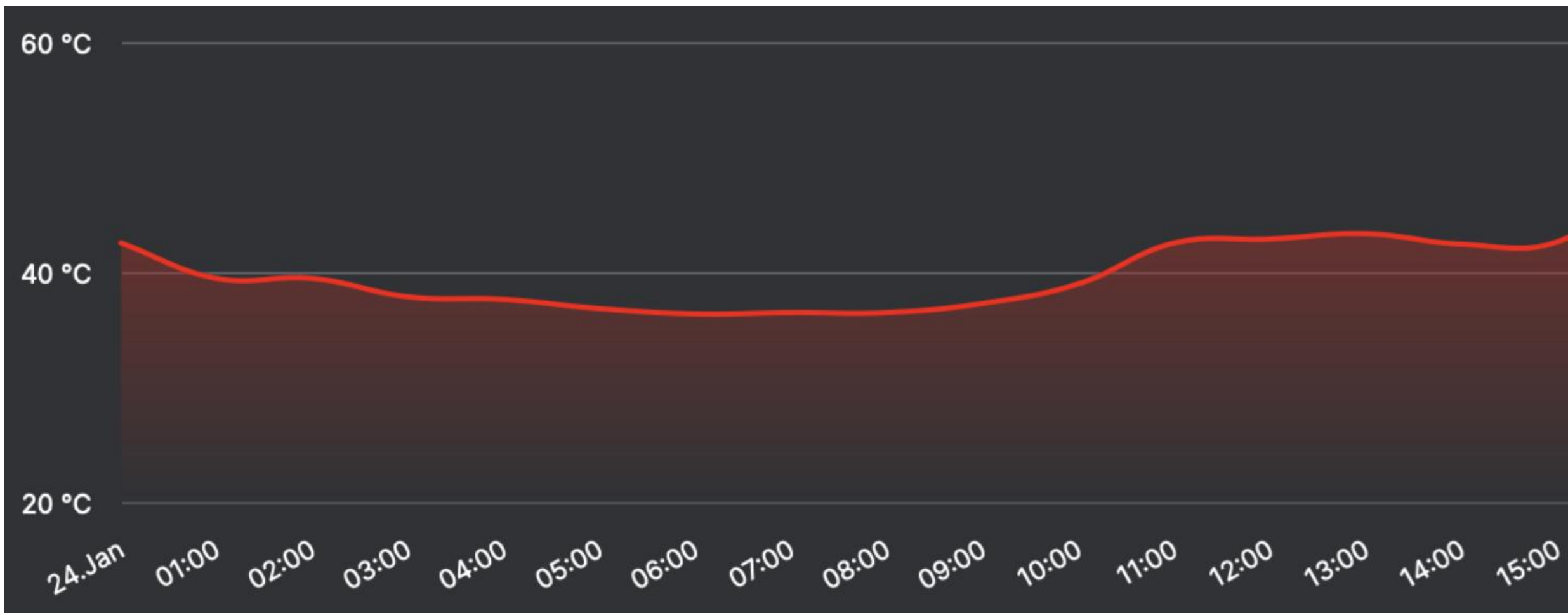


Measured air temperature at supply ductwork

House 3 (2017 detached home): heat pump only



House 3 (2017 detached home): heat pump only



Measured air temperature at supply ductwork

Non-technology factors for heat pump performance

1. System design and equipment selection
2. Installation quality and setup
3. User perception and expectations

ferncomfort.ca

chris@ferncomfort.ca

FSD, Safety, and the Future of Driving:

Why autonomy matters—even when the messenger is complicated

Electric Vehicle Council of Ottawa



The Elephant in the Room

- ▶ You can dislike Musk and still value the technology



FSD = Safety Revolution

- ▶ Already safer
- ▶ Human+FSD > Human



The Human Cost

Category (annual average)	Canada	United States	World
Deaths	~1,910	~39,100	~1.19 million
Serious injuries (hospitalization-level / severe injury)	~9,100	~302,000	~2.5 million
Total crashes / incidents (including estimated unreported collisions where possible)	~620,000	~13.6 million	~110 million

FSD Fatality Comparison

- ▶ 2 People have died from FSD
- ▶ Musk has done it again
- ▶ FSD supervised Beta is the Model 3 of the ADAS world.

A Moment That Changed My Mind

- ▶ We humans ain't good drivers
- ▶ FSD better



Electric Vehicle Council of Ottawa



“What Could You Buy, and When?”

Package	What it actually did	Availability / pricing
Autopilot (AP1)	Original highway assist (lane keeping + adaptive cruise)	Historical only (2014-2016)
Basic Autopilot	Traffic-aware cruise + lane centering	Standard on most Tesla's for years; no longer bundled the same way on newest 2026 configs with lane keeping removed.
Enhanced Autopilot (EAP)	Navigate on Autopilot (essentially FSD for controlled-access highways only), auto lane changes, highway interchanges/exits. No city-street navigation.	Optional package historically available. No longer sold new in North America. Today effectively only found on used Tesla's with grandfathered entitlement.
FSD Capability / FSD (Supervised)	Adds city streets, traffic lights, stop signs, turns, destination navigation	Historically sold as one-time purchase (~US\$8k-\$15k depending on era; roughly C\$10k-\$20k at different times). Subscription introduced later. Since Feb. 14, 2026: subscription-only in Canada & U.S.; transfer program ended.

Capability ladder

Capability	Basic Autopilot	Enhanced Autopilot	FSD / FSD Supervised
Traffic-aware cruise	✓	✓	✓
Lane centering / Autosteer	historically ✓ 2026 ✗	✓	✓
Auto lane change	✗	✓	✓
Navigate on Autopilot	✗	✓	✓
Autopark / Summon	✗	✓	✓
City streets	✗	✗	✓
Promised future unsupervised driving	✗	Promised on major highways only	Promised for Highway and streets.
Requires human supervision today	✓	✓	✓

Hardware Evolution

Hardware	Approx era	Reality
HW1	2014-2016	Mobileye-based highway driver assist
HW2	2016-2017	Tesla begins own autonomy stack
HW2.5	2017-2019	Incremental compute improvement
HW3 (FSD Computer)	2019-2024	First real mass-market FSD hardware; majority of FSD buyers today
HW4 / AI4	2023-present	More compute + improved cameras
HW4.5 / AI4.5 (assumed)	late 2026	Refinement extra compute
HW5 / AI5 (assumed)	~2028	Major next-gen compute platform

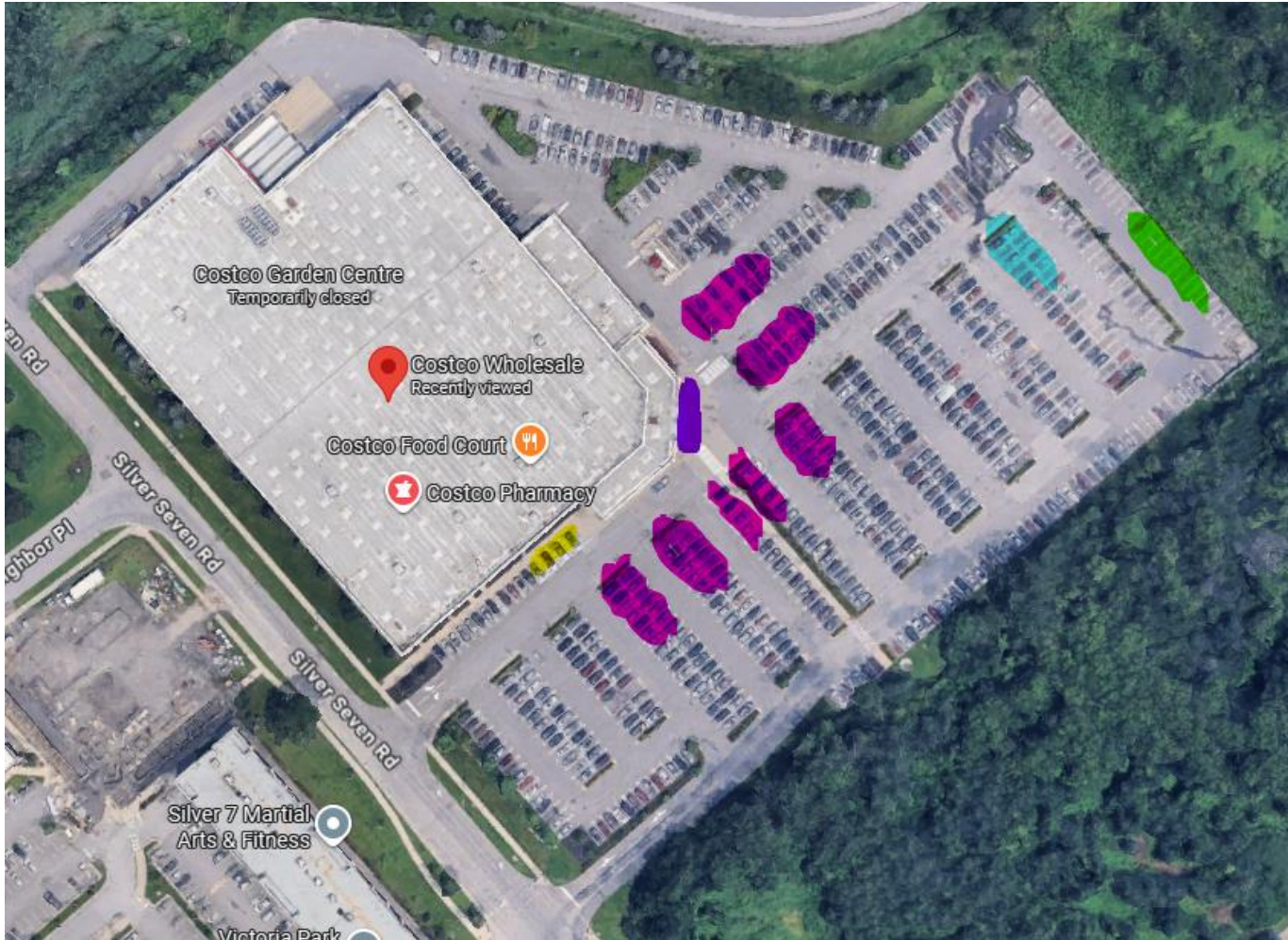
Software Evolution by Hardware

FSD Version	Approx timing	HW3	HW4	Significance
v8-v10 (Beta)	2021-2022	✓	N/A	Early city-street beta
v11	2022-2023	✓	Early support	Unified highway + city stack
v12	2024-2026	✓ Main branch	✓ Main branch	Neural-net rewrite; “Beta” branding fades
v13	2025-2026	✗ Maybe some day	✓ Primary branch	HW4 begins materially pulling ahead
v14+	2026 onward	Reportedly not planned	✓	Musk comments suggest future focus is HW4+

Where we are now.

- ▶ Tesla's FSD story is not one product launch. It is a rolling software program, updated repeatedly over years.
- ▶ A Tesla owner's ADAS experience is now determined by both software version and hardware generation.
- ▶ Tesla went from pushing "buy it for the life of the car" to pushing "subscribe monthly." to "you can't buy it for life of car, and you can't transfer it"
- ▶ Tesla iPhone analogy

We all don't want the same thing



Electric Vehicle Council of Ottawa



FSD vs EV Skepticism We are doing it again!

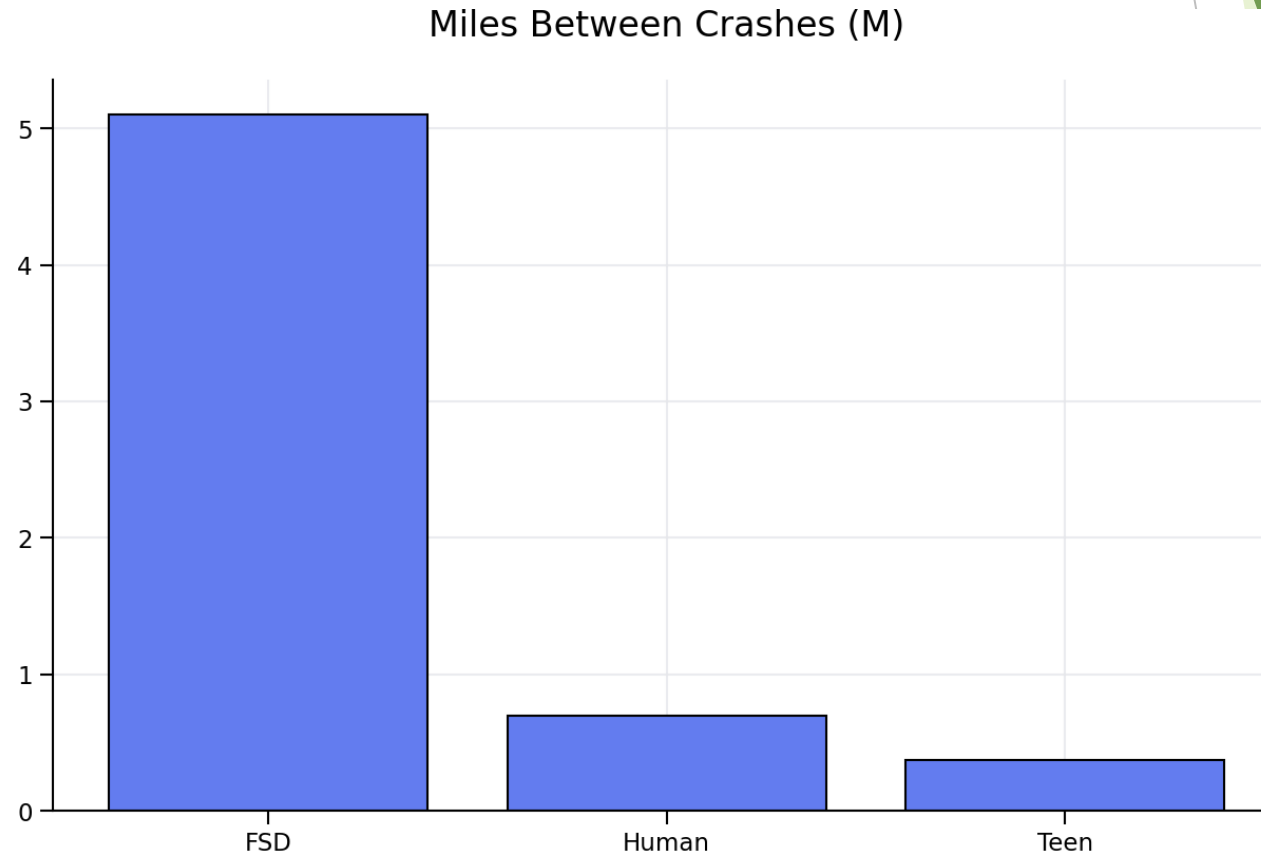


Electric Vehicle Council of Ottawa



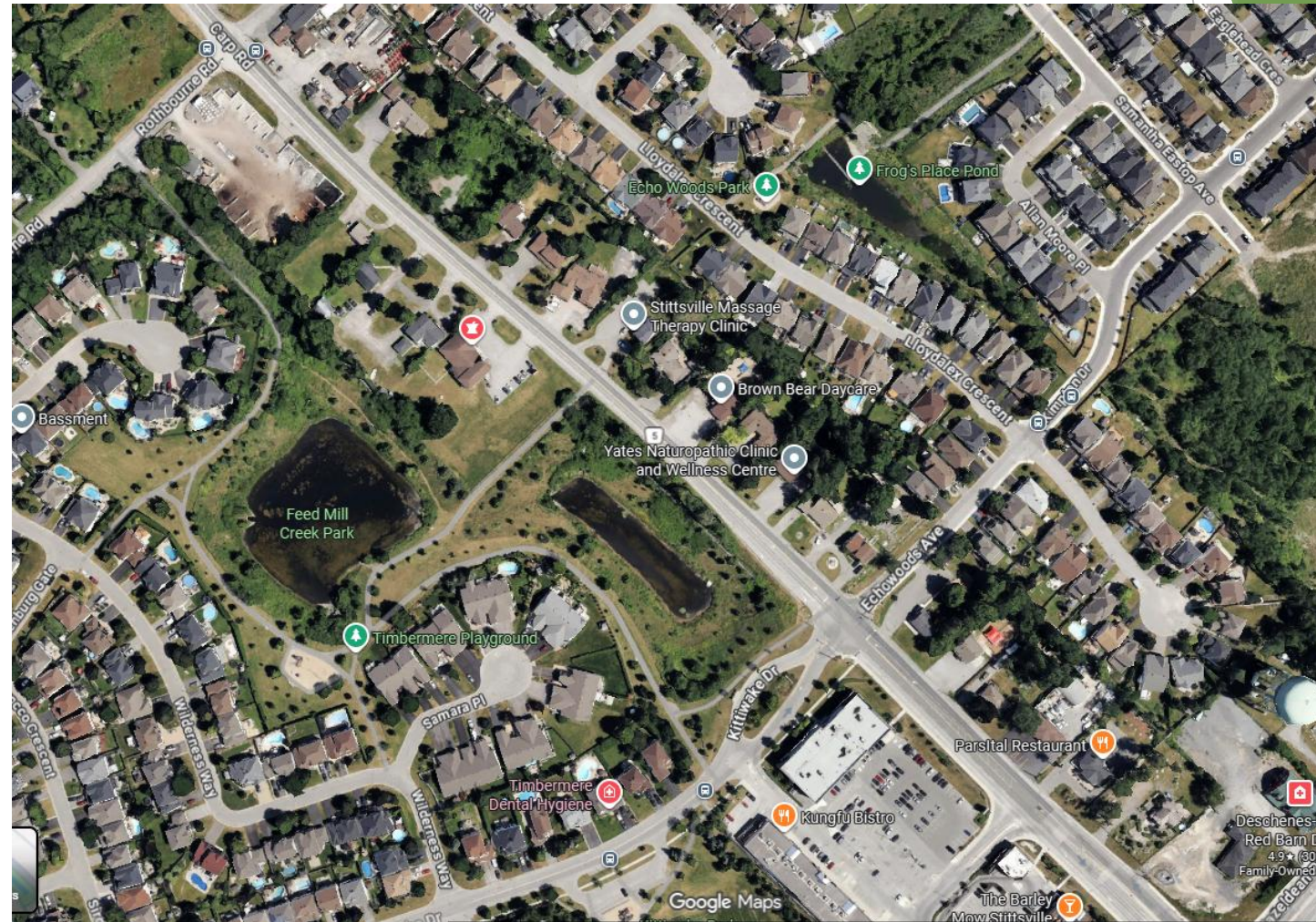
Miles Between Major Crashes

- ▶ FSD on HW 3 & 4:
5.1 million miles between major crashes.
- ▶ Average human driver:
699,000 miles between major crashes.
- ▶ Teen drivers: 370,000 miles between major crashes.
- ▶ Two lifetime FSD fatalities?
Older, HW3 FSD. Today's FSD v13+ on HW4? Zero fatalities.



Moral Imperative and My Mom

- ▶ This saves lives
- ▶ Able to process complex situations better and faster than we can



Competition

- ▶ They are only trying to compete with Enhanced autopilot.
- ▶ They are better than nothing but no one else is trying city streets.
- ▶ Even rural highways like HWY 7 from Carleton Place to Peterborough no one else is trying.



Hard Truth

- ▶ Don't let perfect block good
- ▶ Consider
- ▶ Push
- ▶ Advocate
- ▶ It's about lives



The News

May 2026

Electric Vehicle Council of Ottawa (EVCO)



Michael Banks
Vice President, EVCO

Global Wind and Solar Generate More Power Than Gas For First Time

- ▶ For the first time ever, wind and solar generated more electricity globally than gas for the full month of April.
- ▶ According to new analysis by energy think tank Ember, in April wind and solar combined produced 22% of the world's electricity while only 20% was produced from gas.
- ▶ Together, the two renewable sources produced 531 TWh of electricity, 54 more TWh than gas plants produced.
- ▶ Wind and solar increased in every major market in April with combined average output up 13% year over year.





IEA: Global EV Sales Set for Another Record Year

- According to the new International Energy Agency's Global EV Outlook, EV sales are expected to hit 23 million vehicles in 2026 or 30% of all new cars sold worldwide.
- Global EV sales in 2025 were 20 million representing around 25% of all new cars.

Just 1% of EVs Accounted for Huge Amount of Sales in 2025

- Just five EV models made up 20% of all global market share according to IEA statistics.
- Leading the group was the Tesla Model Y which made up 8% of all EV sales.
- The Model 3 accounted for 3.6% of EV market share.
- The Geely Geome Xingyuan 3.5%
- Wuling HongGuang Mini 3.1%
- BYD Seagull 3.0%
- All three non-Teslas start under \$10k USD.



93% of Electric Truck Operators Say They're Not Going Back to Diesel

- A German study from the German Institute of Applied Ecology found that the vast majority of electric truck operators are extremely satisfied with their vehicles.
- Owners reported high reliability, high driving comfort, and low operating costs.
- Respondents include 57 companies that own over 200 electric trucks in total.
- 93% of owners were satisfied or very satisfied with their electric trucks.
- 40% of the truck fleets cover over 500 kms per day.



Chinese EVs are Landing in Canada. More Than Half of Canadians Would Buy One

- The first handful of Chinese-branded electric vehicles from Jaecoo, Omoda, and Exelantis have appeared in Toronto, likely for testing.
- In a new survey from AutoPacific, over half of Canadian car buyers would consider buying a Chinese-made car.
- 67% percent of Canadian new vehicle shoppers are very or somewhat familiar with Chinese auto brands and 55% will consider buying one if available.
- Price, quality, and value for money were quoted as being the biggest reasons for considering a Chinese made car.

Canada Set to Receive First Batch of Chinese EVs from Lotus

- The Geely-owned brand has shipped its batch of 18 Eletre SUVs to Canada from its Shanghai port on May 7th.
- The shipment is the first under the new trade agreement with China.
- The Eletre was officially launched in Canada on April 24th and start at \$119,900 CAD.



This Could Be Lucid's Answer to the Tesla Model Y



- The Lucid Cosmos looks to be about the size of a Model Y but with a lower, sleeker body.
- The Cosmos will be Lucid's least expensive model with a promised starting price below \$50k USD.
- Lucid hasn't confirmed whether it will be RWD or AWD but efficiency and charging speed will likely be major selling points.
- The vehicle in camouflage was spotted at the Lucid factory testing next to a Model Y.

Subaru Indefinitely Postpones In- House EVs

- Subaru has dropped 2028 as the target year for launching its own, in-house developed electric vehicles.
- The Japanese automaker's new "EV" factory will instead produce gas and hybrid models.
- The decision comes after Subaru's operating profits fell 90% for the fiscal year with tariffs alone costing the company \$1.4 billion USD.
- The company pointed to US market conditions as driving the decision.
- Subaru joins Mazda and Honda in retreating from EV investment and Subaru will continue to depend on Toyota for building competitive EVs.



Honda Shelves \$15 Billion Canadian EV Plant Amid “Slowing Demand”

- Honda has indefinitely halted plans to build EVs in Canada as it points to supposedly sputtering US demand.
- The company was expected to invest \$15 billion in the Ontario plant with a planned capacity of 240,000 vehicles per year.
- The company acquired land and was expected to receive financial support from the government.
- Honda also ended production of the Prologue EV that was co-developed with GM and cancelled both planned EVs it was developing with Sony.
- Honda now has no EVs in its lineup with no plans to build any as Chinese competition is set to enter the Canadian market.





Volvo Will Replace Canceled EX30 With A New Affordable EV

The compact EX30 was supposed to be Volvo's mainstream EV in North America but when tariffs increased its price the Swedish brand pulled the EV from the US.

Volvo has not released any details yet but President of Volvo Cars America said a new car is coming next year that will be larger than the EX30.

The EX30 is still available in Canada and a new price drop has made it eligible for the EVAP rebate.

It is the only Volvo eligible for the rebate.

2027 Volvo EX60 Is Cheaper Than PHEV XC60

- The 2027 Volvo EX60 Electric Crossover is now on sale in North America and has a lower starting price than the popular XC60 plug-in hybrid.
- All EX60 versions can cover over 480km on a full charge.
- The vehicle comes with a NACS charge port and can charge from 10-to-80% in 16 minutes with a peak charge rate of 370kW.





VW ID Buzz Returns With New Trims and Fixes

- After skipping the 2026 model year, the Buzz is back for 2027 with a dedicated camping trim factory installed.
- The Buzz also gets one-pedal driving, new colours, and updated software.
- “Overnight mode” can use the high-voltage battery to run climate control while off.

VW Golf EV Gets Pushed Back To End of Decade

- VW's electric version of the popular Golf was supposed to debut in 2028 but VW CEO says the company "doesn't need it" that soon.
- The electric Golf is now delayed to the end of the decade and is based on the Group's new SSP platform being developed in partnership with Rivian.
- VW facelifted the ID3 hatchback calling it the ID3 NEO which is roughly the same size as the Golf.
- The Golf EV will likely now debut sometime in 2030.



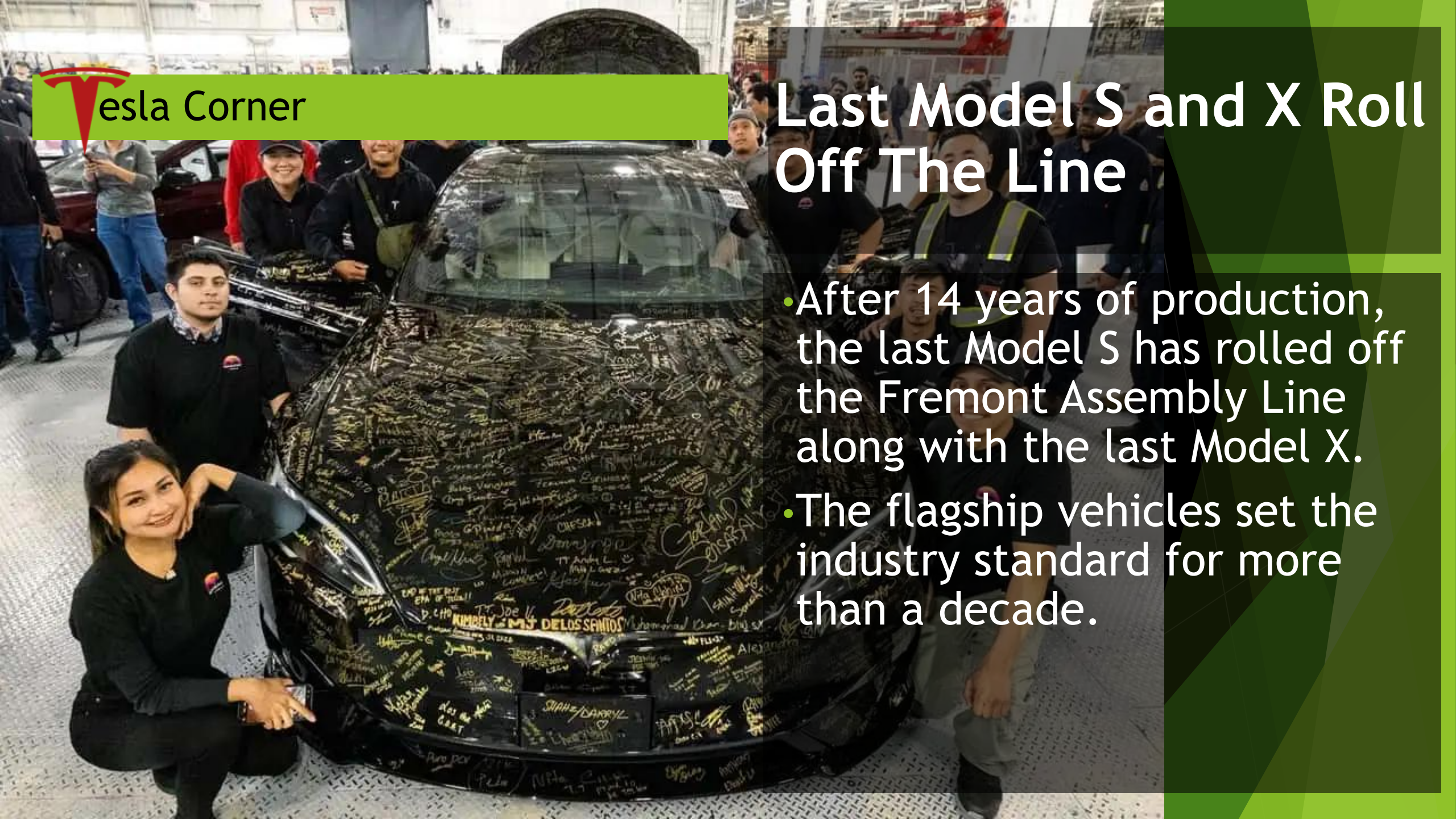
Mazda Delays 1st Real EV Project, Admits It Barely Started On the Hard Part



- Mazda was supposed to launch its first long-range EV next year but has just delayed it to 2029 or later.
- Not only did they delay the project but Mazda's CEO admitted the company has not taken any steps toward production.
- Mazda's previous EV, the MX-30 was launched in 2021 with 2011 specs and was unsurprisingly a flop lasting less than two years on the market before being cancelled.

Last Model S and X Roll Off The Line

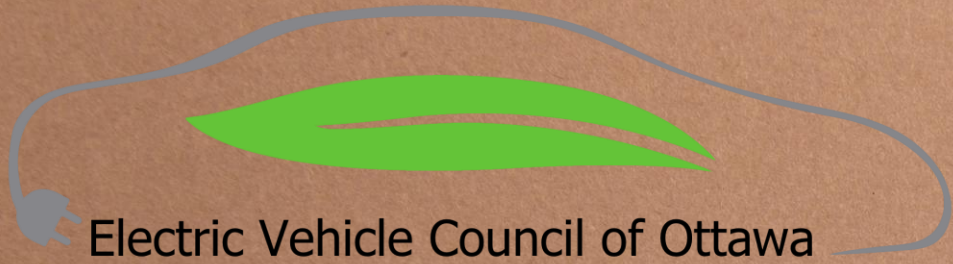
- After 14 years of production, the last Model S has rolled off the Fremont Assembly Line along with the last Model X.
- The flagship vehicles set the industry standard for more than a decade.



Past Events

Reaching outside the bubble!





Electric Vehicle Council of Ottawa

EVCO Kilowatts & Coffee

Saturdays, 10am-noon

May dates and locations:

- May 2nd – Café Latte Cino, 2020 Tenth Line Rd. Orleans
- May 9th – Ten Toes, 1109 Cyrville Rd, Gloucester
- May 16th – Second Cup, 1715 Merivale Rd, Nepean
- May 23rd – EV Event, no kW & Coffee
- May 30th – LUNA Crepes & Café, 110-329 March Rd, Kanata



May 23rd – Westport EcoFest

Only 3 volunteers requested...got 7



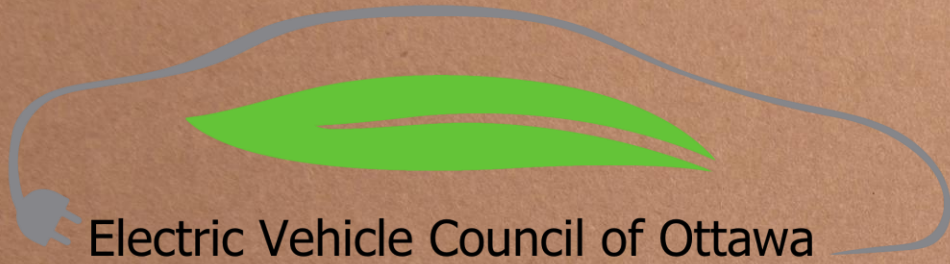
Upcoming Events



Monthly Meeting

- Jun 29th

- ▶ Will also have a Teams meeting for those who can't be there in person and to record
- ▶ **Blackburn Community Hall**
 - ▶ **190 Glen Park Dr, Gloucester**
 - ▶ Free parking
- ▶ No Refreshments



Electric Vehicle Council of Ottawa

EVCO Kilowatts & Coffee




Saturdays, 10am-noon

June dates and locations:

- May 30th – LUNA Crepes & Café, 110-329 March Rd, Kanata
- Jun 6th – Ten Toes, 1109 Cyrville Rd, Ottawa
- Jun 13th – EV Event, no kW & Coffee
- Jun 20th – EV Event, - location close to event??
- Jun 27th – Café Latte Cino, 2020 Tenth Line Rd, Orleans



Monday, June 8; 7 – 9 pm; 50 Bellman Drive

- ***Community Conversation: Electrification & Our Renewable Energy Future***
- *Join neighbours for an engaging conversation about electrification and renewable energy! ⚡ 🌱*
- *In a guided conversation, led by Angela Keller-Herzog of CAFES Ottawa, we'll hear from:*
 - *Ottawa Renewable Energy Coop (OREC)*
 - *Electric Vehicle Council of Ottawa (EVCO)*
 - *A Trend Arlington homeowner who has electrified their home and vehicle*
  

June 13

- Test drives
- Static display
- Booth
- Working with dealers



 **CAFES Ottawa**
Community Action for
Environmental Sustainability

Green Fair Ottawa

INNOVATION + EV SHOWCASE

**SAT 13 JUN
2026**

**10 AM - 4 PM
200 COVENTRY RD**



- FREE public event
- EV test-drives
- Chef-led cooking demonstrations
- Local sustainability innovators
- Indoor and outdoor vendors
- Family-friendly fun
- Educational workshops
- Easy access: Short walk from O-Train and 400+ free parking spots

Canada Cup East – June 19-21

Showcasing ability to power

Booth only

3-day period

Light requirements

- 2 V2L vehicles

- 3 volunteers/shift

2 shifts each day

3 choices:

- No

- Yes - V2L power

- Yes - Volunteer



Canada Cup East

Registration Starts
March 15th!

Coupe de Canada Est

Les Inscriptions
Débutent le 15 Mars!

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1					
2	Event Title	CAFES Sustainability Fair and EV Showcase	Canada Cup East 2 Archery		
3	Location	Ottawa Conference and Event Centre 200 Coventry Rd, Ottawa	Twin Elm Rugby Park Ottawa Archers 4075 Twin Elm Rd, Richmond Hill		
4	Date	Saturday, June 13th	Friday June 19th		Saturday June 20th
5	Times	10AM-4PM	8:30AM-12:30	12:30PM-6:30PM	7:00AM-12:30PM
6	Cars - test drives	4/8		0/0	0/0
7	Cars - static	4/20		0/0	0/0
8	Cars - test rides	1/0		0/0	0/0
9	Cars - V2L Power	0/0		1/2	1/2
10	Volunteers	9/20		2/3	1/3
11	Names			Should be used to provide power	V2L Power means your EV would be used
12	Adam Manzer (amanzer@gmail.com)	Yes - test drives			
13	Ahmed Aded				
14	Ahmed Hammad (ahmed.hammad@gmail.com)				
15	Allan Poulsen	Yes - test drives			
16	Alpesh Patel				
17	Art Hunter				

No

Yes - V2L power

Yes - volunteer

Coming up this year

- June 8 – Community Conversation: Electrification & Our Renewable Energy Future
 - Evening – Raymond only
- June 13 – CAFES – EV Showcase
- June 18-21 - Archery - Canada Cup East for 2026 - Twin Elm Rugby Park in Richmond
 - 18 is only evening
- July 18th Westport Car Show - 9:00 a.m. to 3:00 p.m
- 15 August – Avalon Family BBQ
- 22 August – 10-4PM – Queenswood Heights Family Fun Day and Music Festival
- 29-30 August – Pride
- Sept 19 – “A Taste of Wellington” (third Saturday in September)

Membership

- ▶ Please sign up
- ▶ Helps us with insurance and other expenses
- ▶ <https://Evco.ca/membership>

Plugged In

\$30/year

- Attend EVCO monthly meetings
- Voting privileges (first meeting in January)
- EVCO email newsletter

Subscribe

Charging

\$50/year

- Attend EVCO monthly meetings
- Voting privileges (first meeting in January)
- EVCO email newsletter
- Discounts with select partners (including UNDOR – please email us for the code)

Subscribe

Fast Charging

\$100/year

- Attend EVCO monthly meetings
- Voting privileges (first meeting in January)
- EVCO email newsletter
- Discounts with select partners (including UNDOR – please email us for the code)
- Free EVCO/EVX merchandise and other giveaways

Subscribe



EVCO

@EVCOTtawa · 123 subscribers · 57 videos



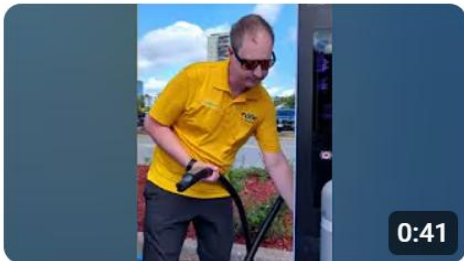
The Electric Vehicle Council of Ottawa (EVCO) is dedicated to promoting the use of electri...more

evco.ca

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Home Videos Shorts Playlists 🔍

Videos we think you should also watch ▶ Play all



Roundtable!!

Volunteer spreadsheet at [EVCO](#)
[Volunteer Availability -](#)
[Google Sheets](#)





Electric Vehicle Council of Ottawa