



Electric Vehicle Council of Ottawa

January 30, 2022

Electric Vehicle Council of Ottawa Monthly Meeting

Agenda

- ▶ AGM
- ▶ News
- ▶ EVs in winter
- ▶ EV Mandate in Canada
- ▶ Past and Future events
- ▶ Roundtable



AGM - Jan 30, 2023

- ▶ Board is composed of up to 8 directors elected for 2-year terms
- ▶ Returning for their second year
 - ▶ Mike Banks - Vice President
 - ▶ Darren Robichaud - Corporate Secretary
 - ▶ Mitchell House - Director
 - ▶ Robert Borowski - Director
 - ▶ Sam Lapierre - Director
- ▶ Persons previously elected in 2021 for a two-year term who are seeking re-election
 - ▶ Raymond Leury - President
 - ▶ Craig Sweetnam - Treasurer
 - ▶ Nicolas Leury - Director

The News

January 2023

Electric Vehicle Council of Ottawa (EVCO)



Michael Banks
Vice President, EVCO



Vancouver's TransLink to buy 600 ZEBs by 2030

- ▶ TransLink announced in December that they will be rapidly accelerating their plans to decarbonize their fleet as part of a newly released Climate Action Plan.
- ▶ The company will add 155 electric buses by 2025 and an additional 460 by 2030.
- ▶ TransLink did not confirm which brand of bus it will be purchasing but is currently running a four-bus pilot with NovaBus electric buses (pictured) and will be adding 15 more NovaBuses over the next few months.

Mercury Unveils New Outboard Motor; 100% Electric

- ▶ The Avator 7.5e is a fully self-contained all-in-one outboard motor and includes propulsion motor, swappable battery, and electronics.
- ▶ Designed as a drop-in replacement for transom mounted outboard motors.
- ▶ A 1kWh battery is housed under a water-tight lid and designed to be swapped out without needing to stop.
- ▶ The 48V battery is good for roughly 45 mins of run time when used flat out and weighs 16lbs.
- ▶ The Avator 7.5e is equivalent to a 3.5hp gas motor.





“ID Golf GTI” May Become a Thing

- ▶ VW boss Thomas Schafer said the company will not be retiring the “GTI” nameplate when the current eighth-generation Golf platform is retired in 2027-2028.
- ▶ Instead it could become part of the ID line-up. He said the ID models don’t always have to have a number after them, like the ID Buzz. “We might have an ID Golf” that would fit below the ID 3 which is seen as more of a “Golf Plus”



VW Seeking to Build Battery Gigafactory in Canada

- ▶ What will become the company's first battery cell factory outside of Europe, VW is reported looking at locations in Canada to build its newest facility.
- ▶ Francois-Philippe Champagne, Minister for Innovation, Science and Industry signed an addendum to the non-binding MoU with the company on December 1st.
- ▶ VW plans to produce 40 GWh per year by 2030 at the new site, enough for 550,000 vehicles.
- ▶ Construction of a cathode material plant by Umicore will start this year near Kingston with deliveries to partners planned to start in 2027.



VW May Partner with Foxconn to Build Scout EVs

- ▶ VW plans to bring Scout brand EV SUVs to the North American market by 2026 with the latest rumours indicating it may partner with Foxconn to make it happen quickly.
- ▶ While Foxconn is most famous for being the builder of iPhones for Apple it is also the company building the Lordstown Endurance pickup truck at its factory in Lordstown Ohio.

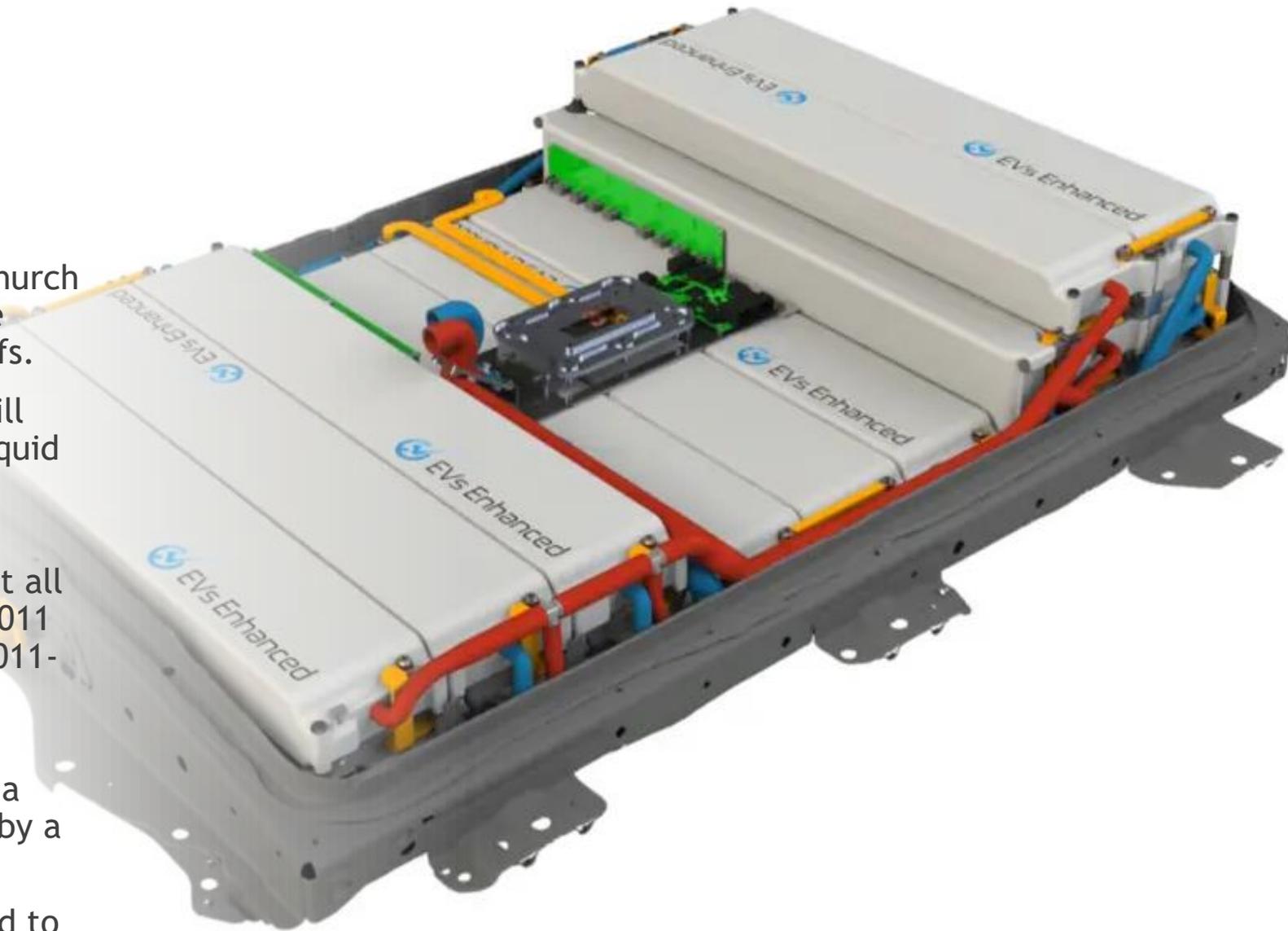


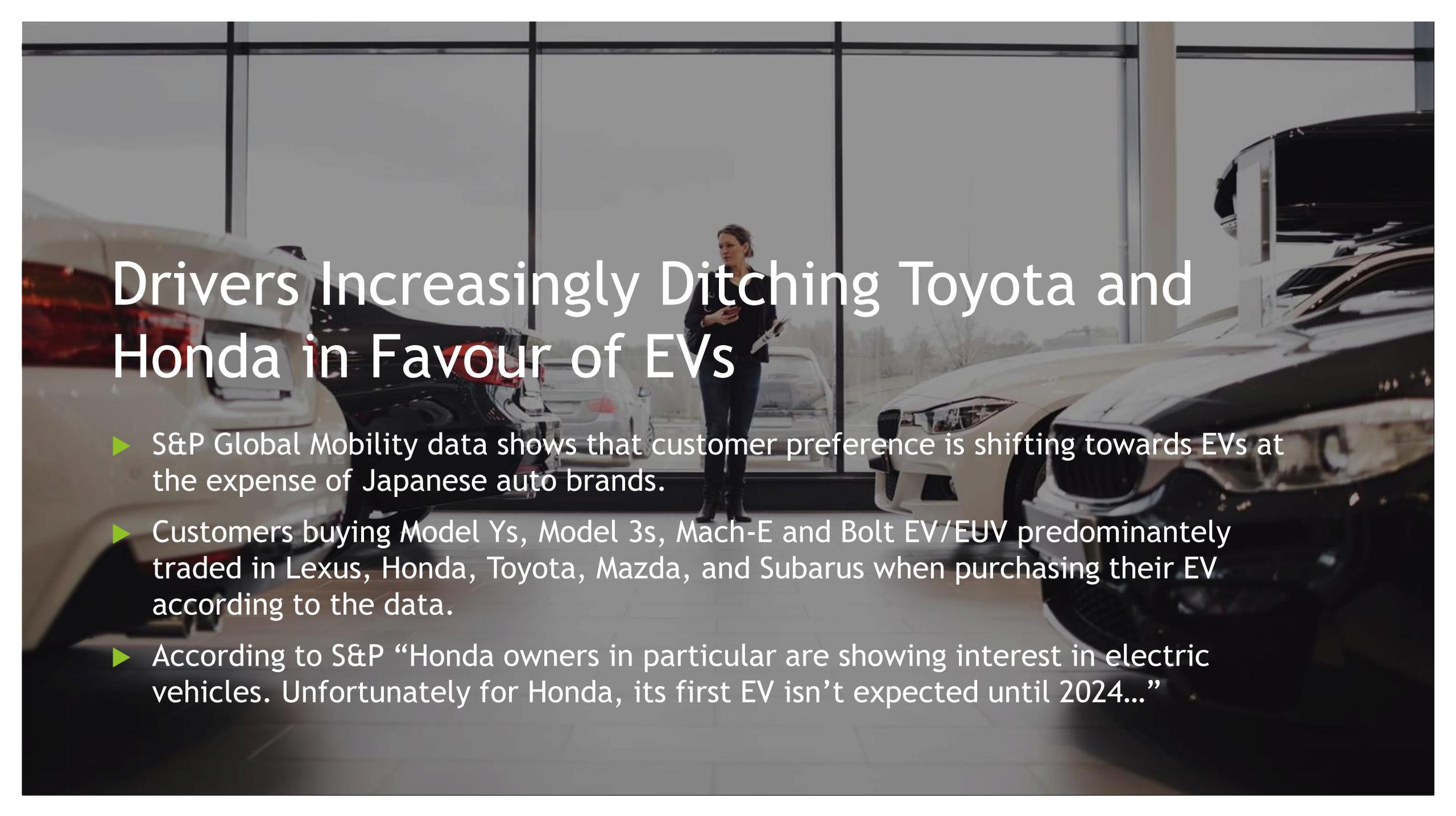
Lordstown Endurance Pickup is Homologated and Approved for Sale

- ▶ After a rocky start and questions about its very survival Lordstown has received EPA approval and has begun deliveries of its Endurance pickup making it yet another startup to beat Tesla to market with an EV pickup truck.
- ▶ The Foxconn-built truck is different in that it uses hub-based motors rather than more conventional axel-based motors.
- ▶ Limited production to start, only 500 units expected for delivery this year.

New Zealand Company to Introduce LFP Replacement Packs for Old Leafs

- ▶ EVs Enhanced, a company from Christchurch New Zealand has developed a complete replacement battery for old Nissan Leafs.
- ▶ Starting in March, 2023 the company will sell 16 Blade, LFP battery packs with liquid cooling that fit within the confines of original Nissan Leaf pack enclosures.
- ▶ The 16 Blade battery will be made to fit all 24, 30, and 40 kWh Leaf models from 2011 through to 2022 although support for 2011-2012 model years won't be available at launch.
- ▶ Target sale price is “a third the cost of a new 40 kWh Leaf” and will be covered by a 160,000 km, 3 year warranty.
- ▶ Availability will be only for New Zealand to start but the company is looking for international partners once production capacity allows.





Drivers Increasingly Ditching Toyota and Honda in Favour of EVs

- ▶ S&P Global Mobility data shows that customer preference is shifting towards EVs at the expense of Japanese auto brands.
- ▶ Customers buying Model Ys, Model 3s, Mach-E and Bolt EV/EUV predominantly traded in Lexus, Honda, Toyota, Mazda, and Subarus when purchasing their EV according to the data.
- ▶ According to S&P “Honda owners in particular are showing interest in electric vehicles. Unfortunately for Honda, its first EV isn’t expected until 2024...”

Aftermarket V2L Adapters Now Available for Hyundai/Kia/Genesis Vehicles

- ▶ Lectron has introduced its own vehicle-to-load (V2L) adapter for E-GMP-based vehicles.
- ▶ It does the same job as the OEM V2L adapter but is much less expensive.
- ▶ The Hyundai adapter sells for \$550+ while the Lectron unit sells for \$150 US.





Mercedes Announces “High Power” Charging Network for Canada.

- ▶ The German automaker announced it will start building out an EV fast-charge network with over 400 stations in Canada and the US this year.
- ▶ It plans on having 10,000 350kW chargers worldwide by 2030.
- ▶ By 2027 it wants 400 stations and 2,500 stalls in North America
- ▶ ChargePoint is already a partner and is expected to help launch the new network.
- ▶ The network will be accessible to all CCS EVs and will support ‘Plug & Charge’ technology.
- ▶ Locations will have from 4 to 30 stalls with speeds of 350kW.





Measurement Canada Now Accepting Applications For Per kWh Billing

- ▶ In August it was reported that Measurement Canada would soon allow per kWh billing.
- ▶ They are now accepting applications from charging companies with Tesla being reported as one of the first to apply with approval expected sometime early this year.

CHarIN Says 'Nah' to NACS

- ▶ The Charging Interface Initiative (CHarIN) said in a statement that North America already has a clear universal standard, CCS, and that moving to another connector at this time would disrupt and delay the EV transition.
- ▶ Tesla is one of the 155 “Core Members” of CHarIN.
- ▶ CCS is already used by over 50 vehicle models, NACS is used in only 4.
- ▶ CCS chargers already outnumber Superchargers, 61,000 to 40,000 worldwide and 18,800 to 18,405 in NA.

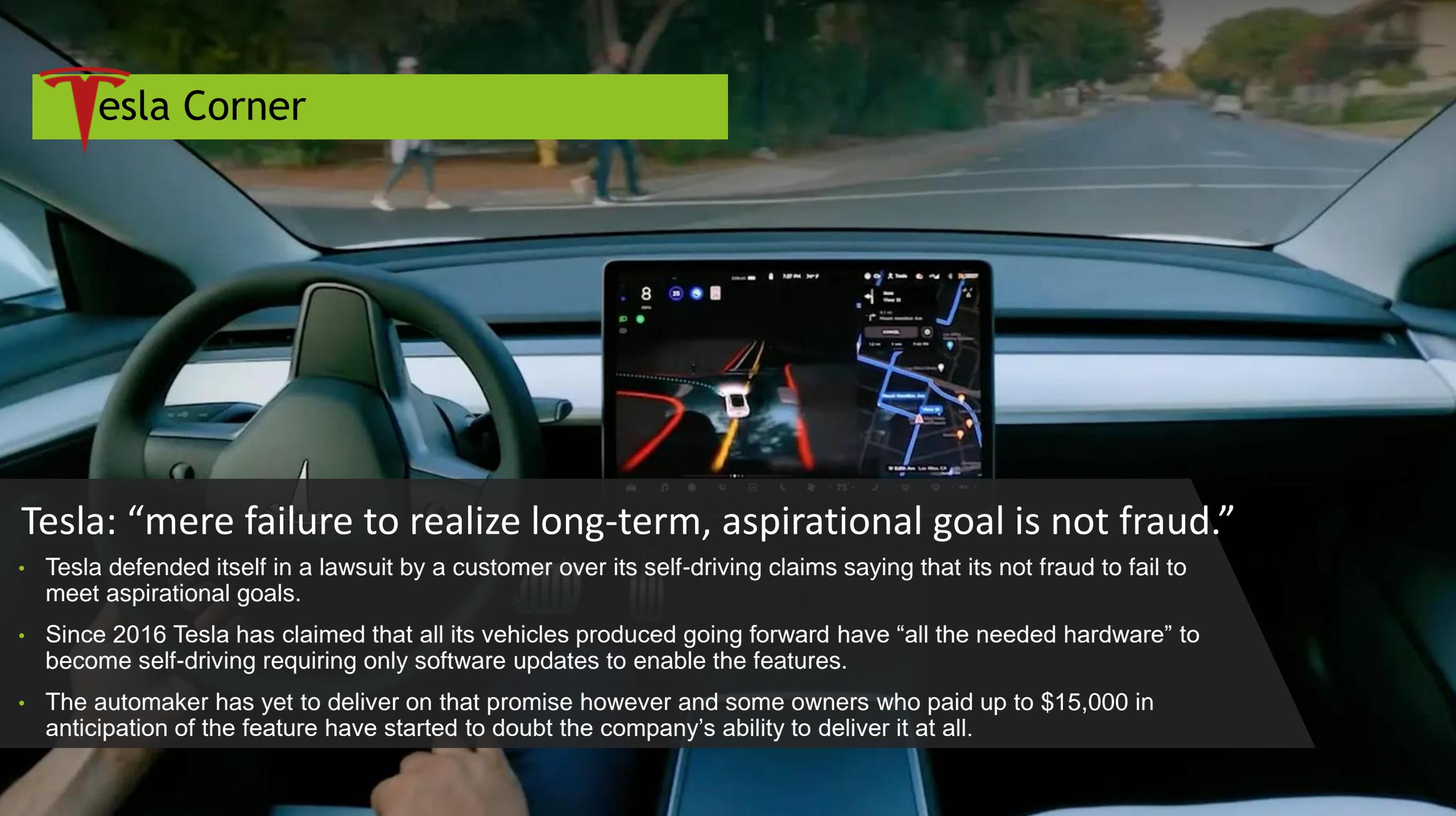


- ▶ There are 178,926 public J1772 connectors compared to just 15,529 Tesla destination chargers.
- ▶ Nearly all car makers have invested in and agreed to use CCS.
- ▶ NACS has not passed through the established standardization process via ISO, IEC, and/or SAE - CCS has.



Tesla Starts Getting Canada Ready For Semi.

- Tesla has sent proposals to the Deputy Minister and Minister of Finance Chrystia Freeland regarding Canada's need to invest in EV infrastructure including the electrification of medium and heavy-duty transportation.
- The company would like the Federal Government to identify which routes should receive incentives and support the deployment of charging infrastructure needed for MHDZEVs.
- Tesla also proposed that the government provide grants to freight haulers to support power upgrades in order to facilitate the transition to electric trucks.
- "Charging facilities must be in place when the trucks arrive so they can enter service immediately." writes Tesla.



Tesla: “mere failure to realize long-term, aspirational goal is not fraud.”

- Tesla defended itself in a lawsuit by a customer over its self-driving claims saying that its not fraud to fail to meet aspirational goals.
- Since 2016 Tesla has claimed that all its vehicles produced going forward have “all the needed hardware” to become self-driving requiring only software updates to enable the features.
- The automaker has yet to deliver on that promise however and some owners who paid up to \$15,000 in anticipation of the feature have started to doubt the company’s ability to deliver it at all.



Fisheries and Oceans adds fleet of Model 3s and Lightnings

- DFO has begun the transition to electric by ordering a fleet of Model 3s and F150 Lightnings.
- The Department has purchased three Model 3s, all of which have already been delivered, and six Lightnings.
- The Teslas are stationed on Vancouver Island and are being used by employees of the Pacific Biological Station for travel between sites.
- The Lightnings are located in Vancouver, Winnipeg, Mont-Joli, Moncton, Dartmouth and St John's and are used by multiple DFO and Coast Guard programs.
- DFO also already has two Bold EVs that were purchased last year.

Evs in Winter



How cold weather affects EV



This presentation will cover...

Introduction

Myths of winter and EV

Advantages of driving EV in the winter

Disadvantages of EV in the winter

What to do to enhance your EV experience in winter

Myths of winter driving

Myth: EV can't do road trips in cold weather.

A: Ev's are for the most part able to do road trips without any problems.

Myth: Your car will die if your stuck in traffic

A: Any car will die if it idles too long. EVs might last longer when not in movement.

Myth: Batteries will fail because they freeze.

A: I don't think I need to comment on this one...

Advantages of driving EV in the winter

On demand Heat Pump

Weight distribution is way better than
ICE

Give better traction even without AWD

“Full tank” of electricity every morning



Disadvantages of EVs in winter



Disadvantages of EVs in winter

- Range reduction
- Ice build up
- Charging time increased
- Frozen charge door or charger handle



Battery and cabin preconditioning

What is battery preconditioning?

Does all EV have it?

What is cabin preconditioning?



Things to do in winter

- Have good winter tires!!!
- Carry an extra jug of windshield washer
- Make sure to remove snow and ice from your cars
- Using snow mode can be useful
- Knowing how to remove traction control can also be useful
- Using battery regenerative braking can be tricky in snow and ice
- Keep battery charge high but not too high... (between 20-80%)



So to resume this presentation:
EVs are very good in winter!

Thank you for listening! Any Questions???



EV Mandate in Canada





EVCO – EV Sales Mandate

January 20, 2023



Federal Government Sales Mandate

- Requirement for automakers to ensure EVs represent an increasing number of sales in a given model year.
- Begin in 2026, and reflect 100% EV sales in 2035

Sales Targets

Model Year	ZEV Sales Target (%)	Growth from previous year
2026	20	-
2027	23	3%
2028	34	11%
2029	43	9%
2030	60	17%
2031	74	14%
2032	83	9%
2033	94	11%
2034	97	3%
2035	100	3%

Workings of Regulations

- If company exceeds given sales requirement, they earn credits
- If company doesn't meet given sales requirement, they incur a compliance deficit
- Deficits can be addressed using banked credits, purchasing credits from other companies, or creating credits from contributing to ZEV activities (installing EV Charging infrastructure)

Manufacturer Input

- Preferred alignment with US Fleet Average GHG emission standard
- All manufacturers investing in ZEVs and ZEVs would be primary technology to comply with future GHG standards
- Strongly against development of a national sales mandate, and not in position to comply
- Advocated for more consumer rebates, accelerating deployment of charging infrastructure, worker upskilling and consumer education programs
- Match US Inflation Reduction Act new Advanced Manufacturing Production Tax Credit (per-vehicle subsidies)

NGO Comments

- ZEV Sales targets to accelerate GHG reductions to make Canada less dependent on changes in US regulations
- Divided on inclusion of PHEVs, but if they are included they should be treated as a transitional technology.
- Agreed that PHEVs should constitute only a small number of new ZEVs by end of decade.

Province/Territory Comments

- PHEVs would serve remote and northern communities which will likely be last to accommodate fast charging infrastructure
- No regional requirement, and national requirement would give automakers flexibility to respond to markets with high consumer interest and infrastructure readiness

Assumptions

- ZEVs assumed to have additional cold-weather and AWD
- Incremental ZEV prices (savings) for select vehicles in select years

Type of Zero Emission Vehicles	2026	2030	2035
Battery Cars	\$3,300	\$985	(\$795)
Battery Light Trucks	\$7,150	\$3,450	\$655
Plug-in Cars	\$3,950	\$3,175	\$2,550
Plug-in Trucks	\$5,700	\$4,500	\$3,600

Costs and Benefits

- \$9.1 billion on home charging stations
- \$15.4 billion on higher incremental cost of ZEVs
- \$55.8 billion on higher electricity purchases

- \$89.7 billion savings on reduced fossil fuel purchases
- \$19.2 billion savings in emission reductions
- ~25% reduction in select air pollutants

Other Qualitative Benefits/Challenges

- Maintenance: \$0.02 savings per km driven
- Refueling: Less time spent refueling (80% charging at home)
- Increased DCFC installations: Incentivize business model for EV adoption
- More kilometers traveled due to lower operating costs
- Increased congestion, accidents, noise
- Overall increase in electrical demand by 2.6% to 4.8%, with challenges for public parking lots
- Costs of retraining mechanics
- Gas stations lose traffic
- More demand for batteries across the supply chain

Monetized Cost and Benefits

Monetized Impacts	Undiscounted – 2026	Undiscounted – 2036	Undiscounted – 2050	Discounted – 2026 to 2050	Annualized
GHG Benefits	8	887	2,839	19,180	1,101
Net Energy Savings	15	1,719	4,630	33,905	1,947
Total ZEV Costs	396	1,611	694	24,446	1,404
Total net benefits (costs)	(373)	995	6,774	28,639	1,645



Sensitivity Analysis

- 50% higher or lower fuel costs
 - 50% decrease: Net cost = \$16.2 billion
 - 50% increase: Net benefit = \$73.5 billion
- Cost of ZEV Trucks
 - Towing needs would purchase a PHEV with a towing package rather than a BEV
 - Significantly higher manufacturing cost for BEV compared to PHEV
 - \$17,000 higher price for BEV truck compared to PHEV in 2026, so all BEV trucks are not considered to have a towing package

Greatest Impacts of Regulations

- Low-income households: Non-ZEV costs will increase due to decreasing supply of these vehicles, ZEV not attainable due to higher prices
 - Harder for low-income households to purchase ZEVs until early 2030s
- Low income households: More likely to live in rental accommodations, not suitable for home EV charging
 - Negative impact on EV adoption

Impacts of Regulations

- Rural and Northern Communities: Longer periods of cold weather affect battery range
 - Lower levels of public charging infrastructure
 - Higher electricity prices make these options less affordable
- Those who are lower income and also live in rural/northern communities are most at risk at missing out on lower cost of ownership and improved air quality

EVX Update



Electric Vehicle Council of Ottawa

EVX Update

- ▶ Starting to book events for next year!
- ▶ See at upcoming events section



Past Events

Reaching outside the bubble!





Electric Vehicle Council of Ottawa

EVCO Kilowatts 'N Coffee

Saturdays, 10am-noon.

December and January dates and locations:

- Dec 3rd - Ten Toes Cyrville Rd 1109 Cyrville Rd, Ottawa
- Dec 10th - Caf ē Late Cino 2020 Tenth Line Rd Unit #2, Orl ē ans, ON
- Dec 17th - Second Cup on Merivale 1715 Merivale Rd, Nepean
- Jan 7th - Little Victories Coffee, 44 Elgin
- Jan 14th - Little Victories Coffee, 44 Elgin
- Jan 21st - Le Moulin de Provence, 30 Metcalfe
- Jan 28th - Le Moulin de Provence, 30 Metcalfe



Past Events

- ▶ Jan 14 - EVCO Board Planning Meeting
 - ▶ Looking forward to a busy year again
 - ▶ Hoping for less, but bigger events
 - ▶ October Show at EY will be the highlight
- ▶ Jan 27 - Transit Commission Special Meeting
 - ▶ Reconsideration of the e-bus decision and plan
 - ▶ Raymond presented - see <https://youtu.be/MjqkvzFlSnQ?t=4652>
 - ▶ Staff report was adopted
 - ▶ 26 buses purchased this year for 2024
 - ▶ Total of 350 by 2026
 - ▶ Should be another 100 in 2027, but can't secure funding from Feds that long in advance

Upcoming Events





Monthly Meeting - Feb 27th

- ▶ Will also have a Teams meeting for those who can't be there in person and to record
- ▶ Institut canadien-français d'Ottawa
 - ▶ 316 Dalhousie, Ottawa
 - ▶ Free on-street parking after 5:30PM
- ▶ Refreshments will be available (at your expense)

Upcoming Events

- ▶ Feb 3rd - 1-2:30PM OC Transpo site visit - e-buses
 - ▶ Open to anyone who is an EVCO member in good standing
- ▶ Feb 9th - 7:30-9:30 Joint meeting HEVA (Houston EVA) and VEVA (Vancouver EVA)
- ▶ Feb 15th - 5:30-8:00 EVX event
 - ▶ 6-7:00 Presentation on charging at work
 - ▶ 7-8:00 Networking and answering questions
 - ▶ Need owners with as many different models as possible
- ▶ Feb 22nd - EVX lunch event - Virtual only

Upcoming Events

- ▶ Mar 31st-Apr 2nd - Salon Gatineau
 - ▶ Same promoter as last fall's show in Gatineau
 - ▶ Looking for Teslas
 - ▶ Volunteers for test drives - will be run by AVEQ
- ▶ Apr 16th (Sunday) - Kemptville Sustainability Fair
- ▶ Oct 26-29 - EV and Lifestyle Show at EY Centre
 - ▶ Working with Gatineau promoter
 - ▶ Please mark this on your calendar now as we will need lots of help that weekend for test drives in particular



Electric Vehicle Council of Ottawa

EVCO Kilowatts & Coffee

Saturdays, 10am-noon.

Free heated parking at World Exchange with
free EV Charging!

February dates and locations:

- Feb 4th - Le Moulin de Provence, 30 Metcalfe
- Feb 11th - Le Moulin de Provence, 30 Metcalfe
- Feb 18th - Le Moulin de Provence, 30 Metcalfe
- Feb 25th - Le Moulin de Provence, 30 Metcalfe



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Roundtable!!





Electric Vehicle Council of Ottawa