



Electric Vehicle Council of Ottawa

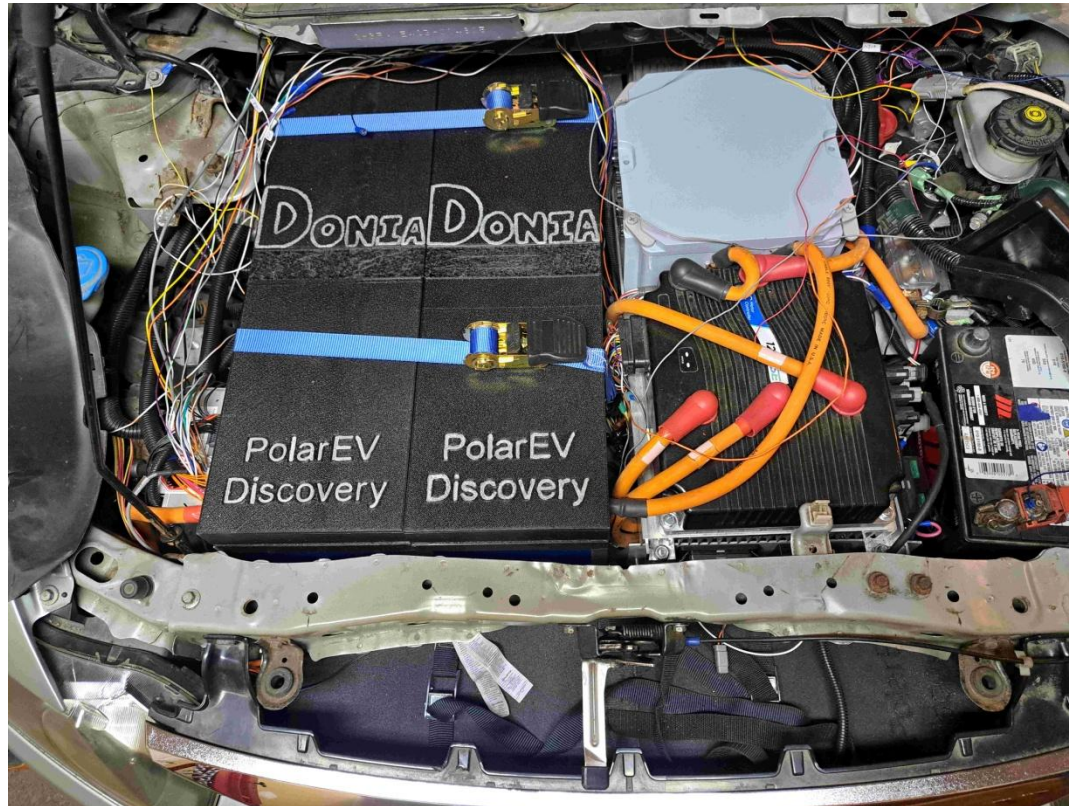
September 28, 2026

Electric Vehicle Council of Ottawa Monthly Meeting

Agenda

- ▶ 7:00 – Show and Tell EV Conversion
- ▶ 7:30 - Start of online
- ▶ EV Conversion
- ▶ News
- ▶ Past and Future Events
- ▶ Roundtable

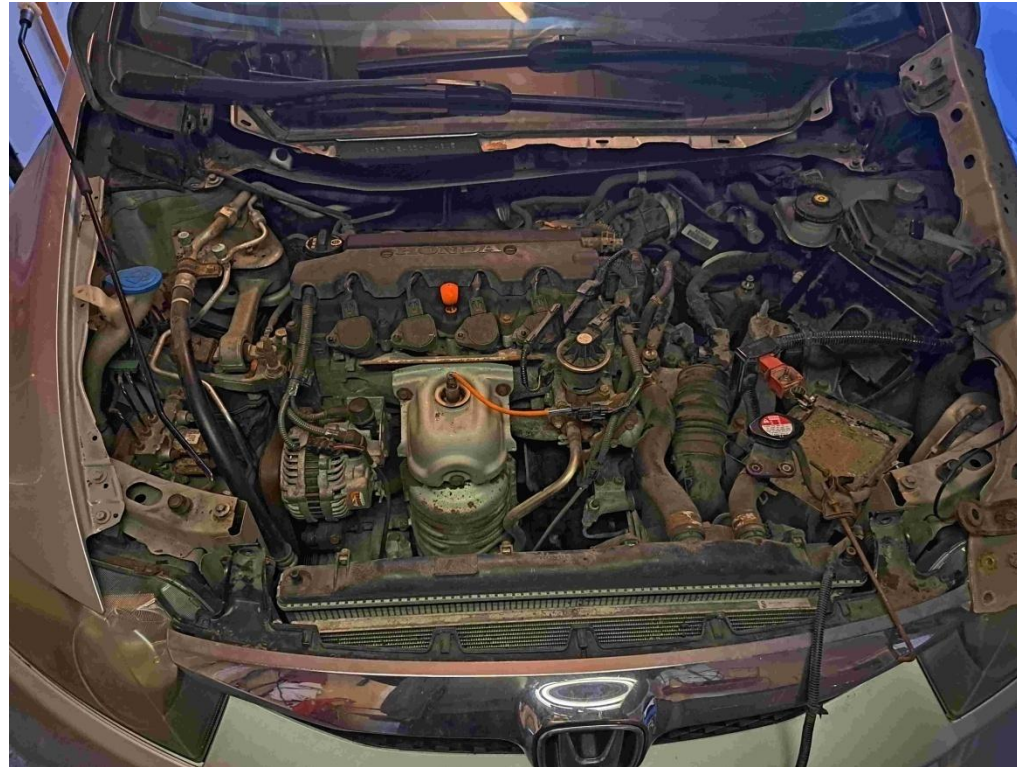
EV Conversion from A to Z



M. Samy Hosny
shosny3s@gmail.com
613-255-4647

My Gas Engine

- Power: 140 HP
- Efficiency: ~33%
- Net Power: ~ 46.2 HP
- Torque : 128 lbs-ft
- Weight : 140 Kg



- Stuff that I don't need anymore: Alternator, starter, Engine oil, radiator, AC compressor, Intake Manifold, Muffler: ~ 50Kg

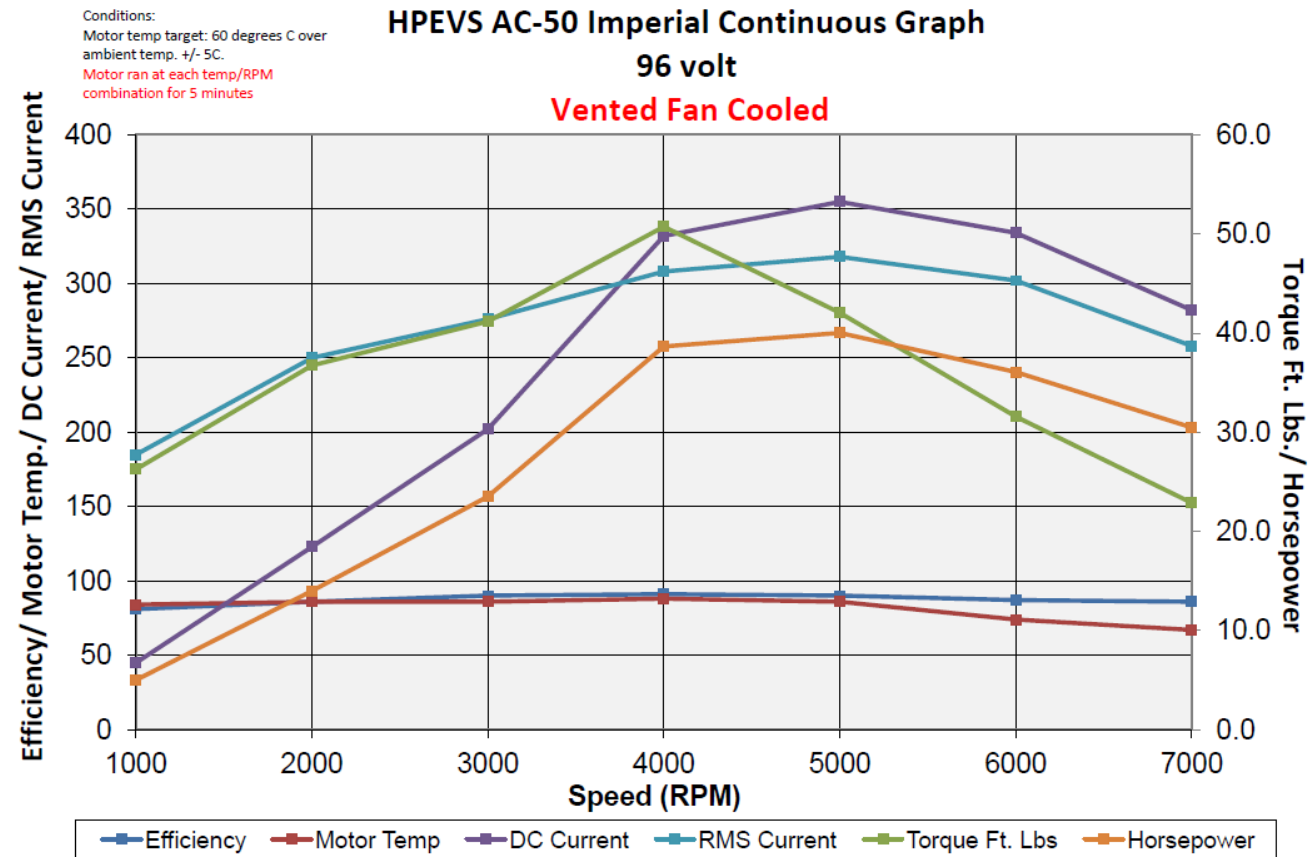
Total Target Weight ~ 190 Kg

Electric Motor selection

Motors	Type	HP Peak	KW Peak	HP Cont	KW Cont	Voltage	Torque (lbs-ft)	efficiency	Weight (Kq)	Length (cm)	Regen. Breaking
1 HPEVS AC-35	Brushless 3Phase AC Induction	63.00	46.94	39.00	29	96V	129.00	88%	38.50	32.00	Yes
2 HPEVS AC-50	Brushless 3Phase AC Induction	72.00	53.69	42	31.2	96V	120.00	88%	52.00	35.00	Yes
3 Netgain-Hyper9	Brushless 3Phase AC SRIPM	120.00	89.40	50.0	37.25	96V	175.00	95%	54.00	35.00	Yes
4 Netgain-Warp9	Brushes - DC	65.0	48.43	34.00	25.33	96V	135.00	85%	70.00	40.00	No
5 ME1507	Brushless 3Phase AC IPM	65.00	48.43	19.5	14.53	96V	88.50	94%	22.00	25.00	Yes

1HP = 745W

Battery capacity/Range



Rpm vs speed
 (Km)

	1000	2000	3000	4000	5000	6000	7000	8000
first gear		16.3	24.5	32.7	40.8	49.0	57.1	65.3
second gear		27.8	41.7	55.7	69.6	83.5	97.4	111.3
third gear		39.7	59.5	79.3	99.2	119.0	138.8	158.7
4th		59.5	89.2	119.0	148.7	178.5	208.2	238.0

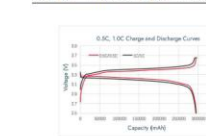
Battery selection

- Type: LiFePO₄
- Configuration: 30 battery cells
- Voltage: 3.2V
- Target capacity: 250 A.hr – 300A.hr
- Total target Weight : ~ 140 Kg

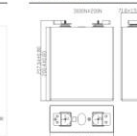
Specifications

	Dimension (Screw terminal)	71.8mm x 173.5mm x 217.1mm
	Weight	max. 5.8kg
	Min. capacity	277Ah(1C) (25±2) °C
	Min. energy	886.4Wh(1C) (25±2) °C
	SOC window	10 ~ 90%
Terminal	Impedance (1kHz)	Screw terminal and stud for BMS
		50.4mΩ
Voltage	Max.	3.65V
	Nominal	3.2V
	Min.	2.5V(0~60°C) / 2.0V(-20~-0°C)
Current	Maximum continuous charge	1C
	Maximum continuous discharge	1C
Energy density	Gravimetric	152Wh/kg
	Volumetric	343Wh/L
Temp. Condition	Operation (Charge)	0~60°C
	Operation (Discharge)	-20~60°C
Self-Discharge Rate	Count after fresh cell need Standard Charge to 50%SOC and storage at 25±2°C for 3 months	≤3.5%
Cycle Life	1C/1C, 80% DOD 35°C	≥3000cycles
Service Life	25°C average temperature	Years/20000km
Abuse test	Overcharge, Over-discharge, Short, Heat	GB/T 31485-2015
	Peak Charge Rate: 277A	Peak Discharge Rate: 831A @ 60 sec

Charge and discharge curve



Dimensions



Certification



Battery	Weight	Capacity (Ah)	Dimensions (mm)
LFP-206	4.20	206.00	7.2x17.5x21.8
LFP-228	4.20	228.00	7.2x17.5x21.8
LFP-277	5.40	277.00	7.2x17.5x21.8
LFP-302	5.80	302.00	7.2x17.5x21.8

Initial Battery layout

- 5 battery packs x 6 cells



The shopping list

- Motor: HPEVS- AC50 3 Phase AC with Curtis Controller
- Batteries: LiFePO4, 30 cells 3.2V each
- Transmission (reuse the original manual transmission)
- Adopter plate to bolt the motor into the transmission
- 12V DC Inverter
- Battery Management system (BMS)
- Vacuum pump for the brakes
- Heaters for the batteries and the cabin
- Power steering pump (not needed for Honda civic 2011)
- High Voltage cable
- Contactor and Fuse box
- HV 800A Fuse
- HV Battery disconnect switch

Total Weight ~ 250 Kg

Where do I start !!



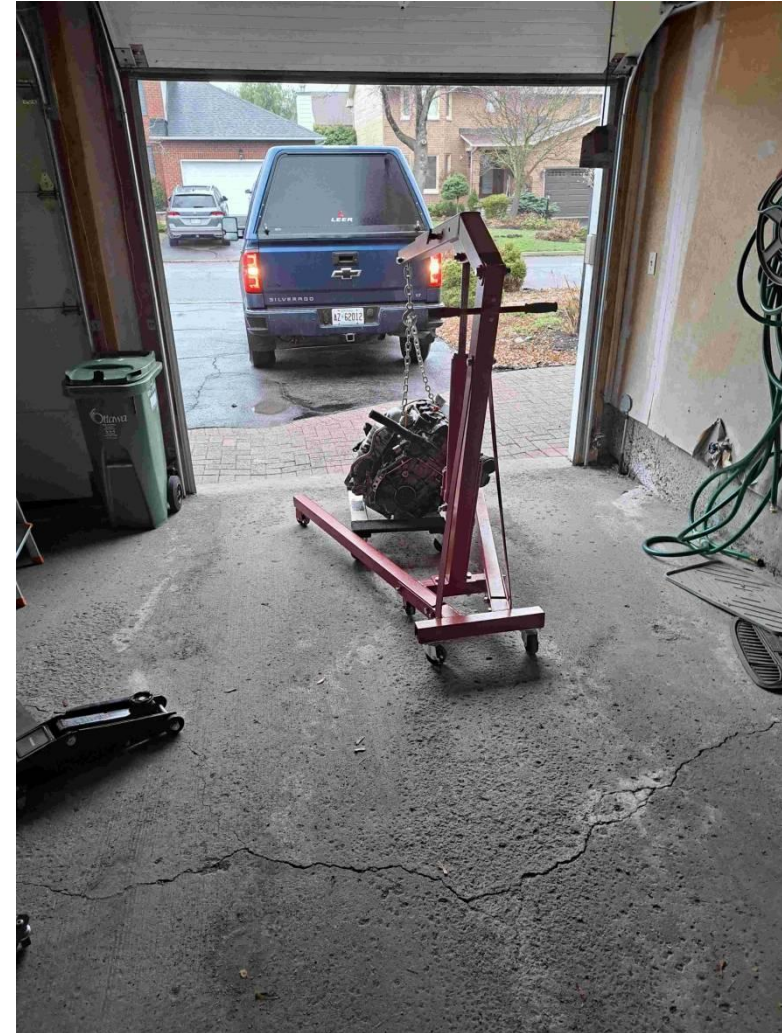
The point of no return ... Oct 2024



Chances of success: 10%

Risk items

- Batteries don't fit in engine bay
- coupling of electric motor to the transmission
- Electric motor actually not working
- Unknown issues

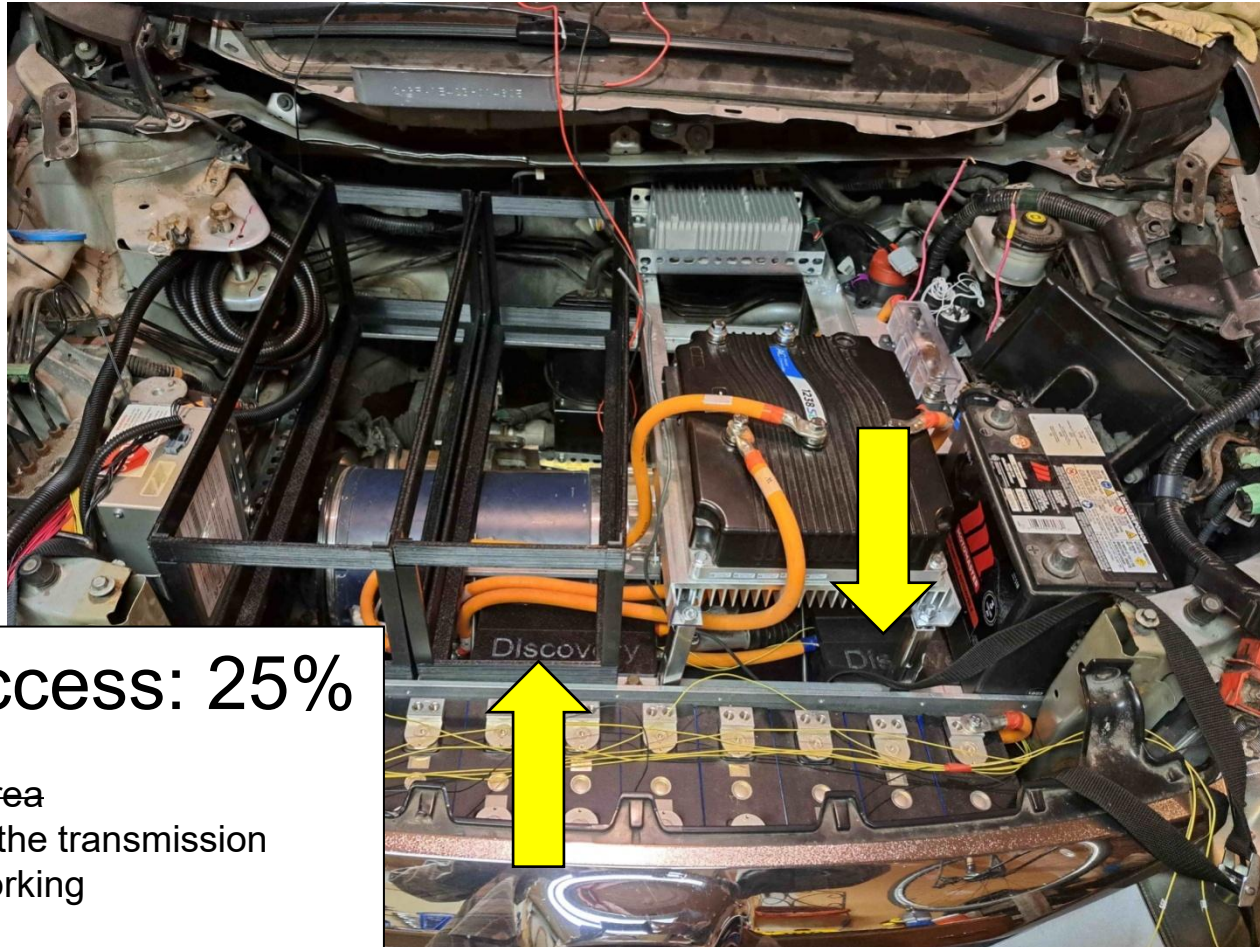


Original space assigned for the batteries doesn't work



Final Battery layout

- 2 battery packs x 8 cells + 1 battery x 10 cells + 2 battery packs x 2 cells

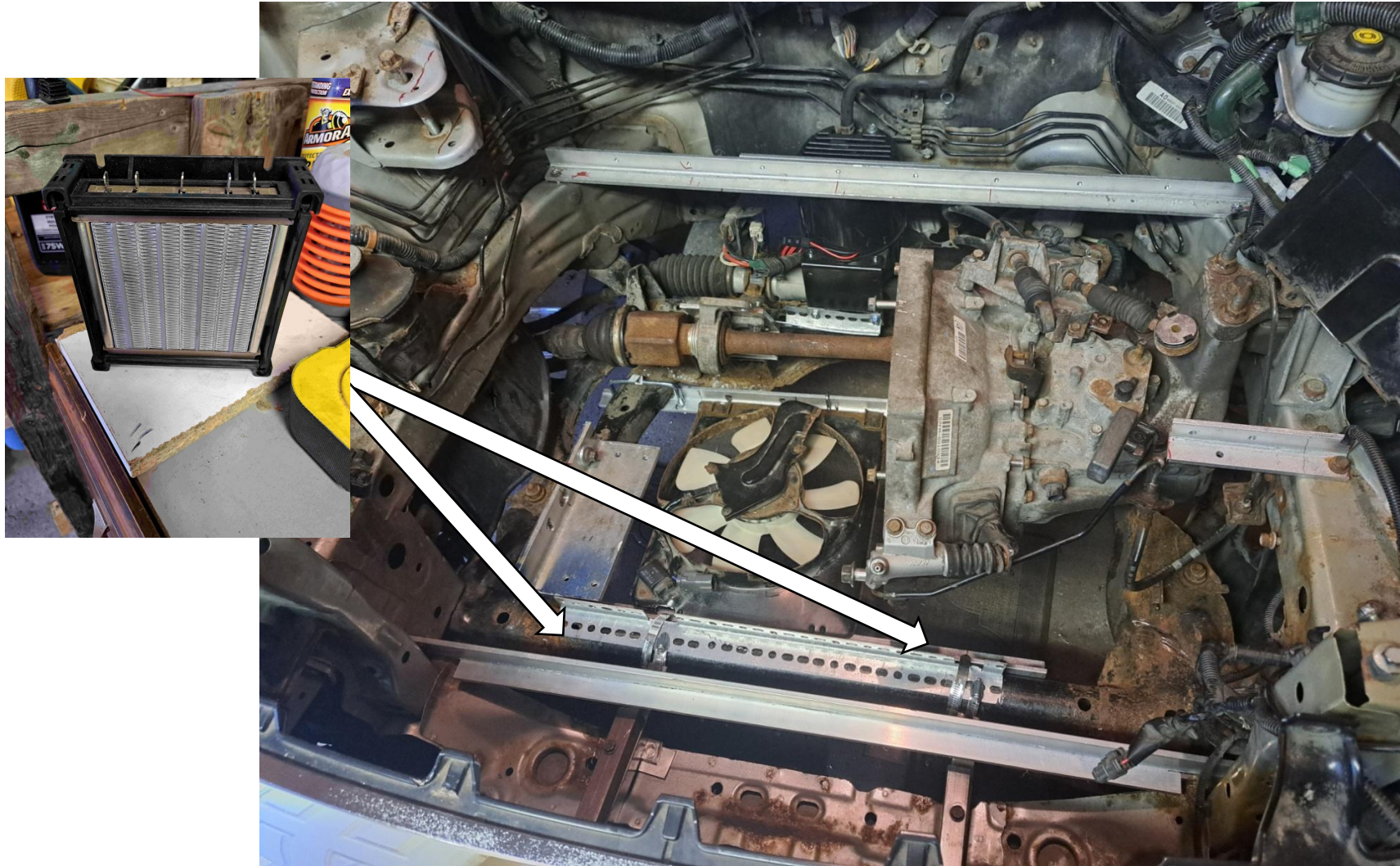


Chances of success: 25%

Risk items

- ~~Batteries don't fit in engine area~~
- coupling of electric motor to the transmission
- Electric motor actually not working
- Unknown issues

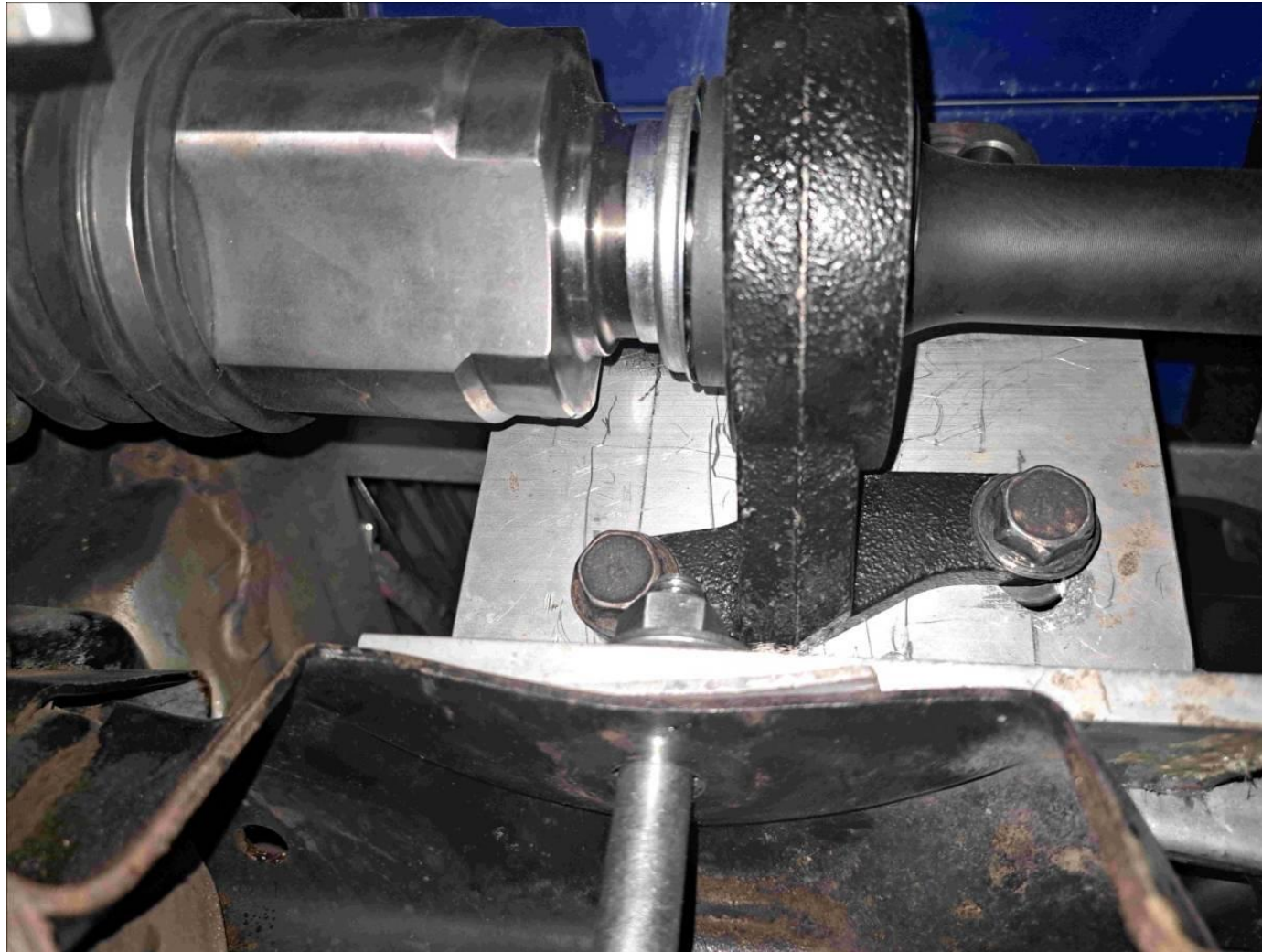
Thermal Management



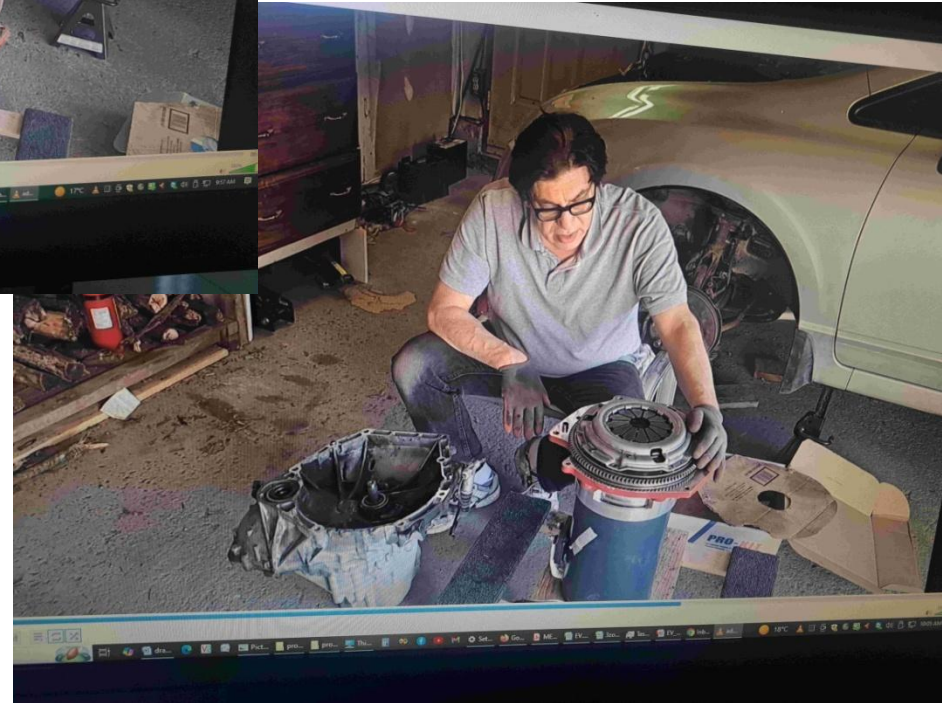
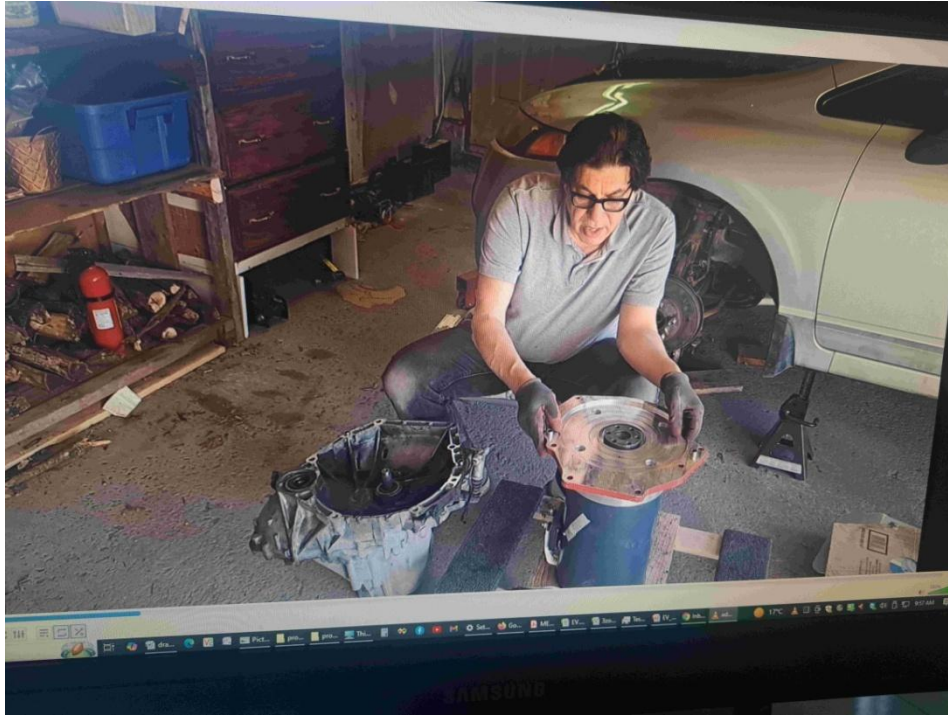
Bolting the Intermediate Axle into the subframe



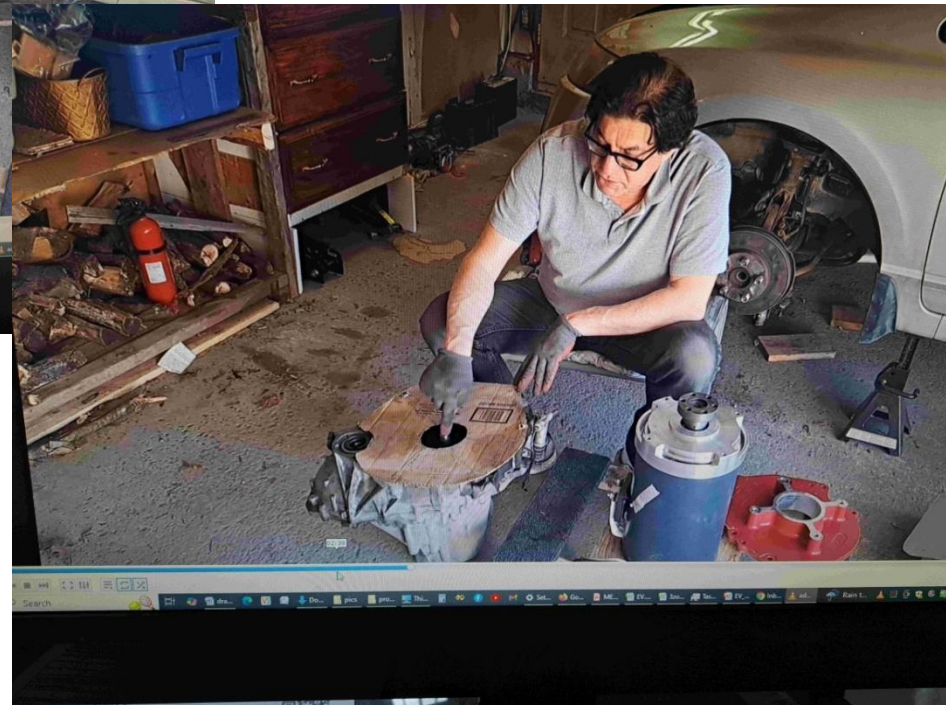
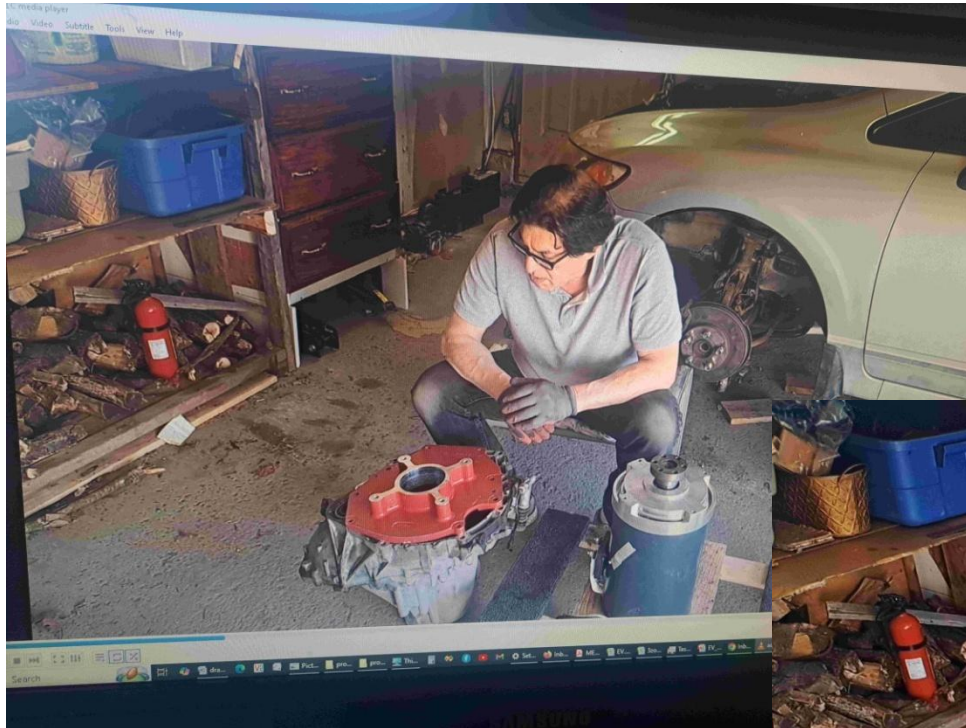
Bolting the Intermediate Axle into the subframe



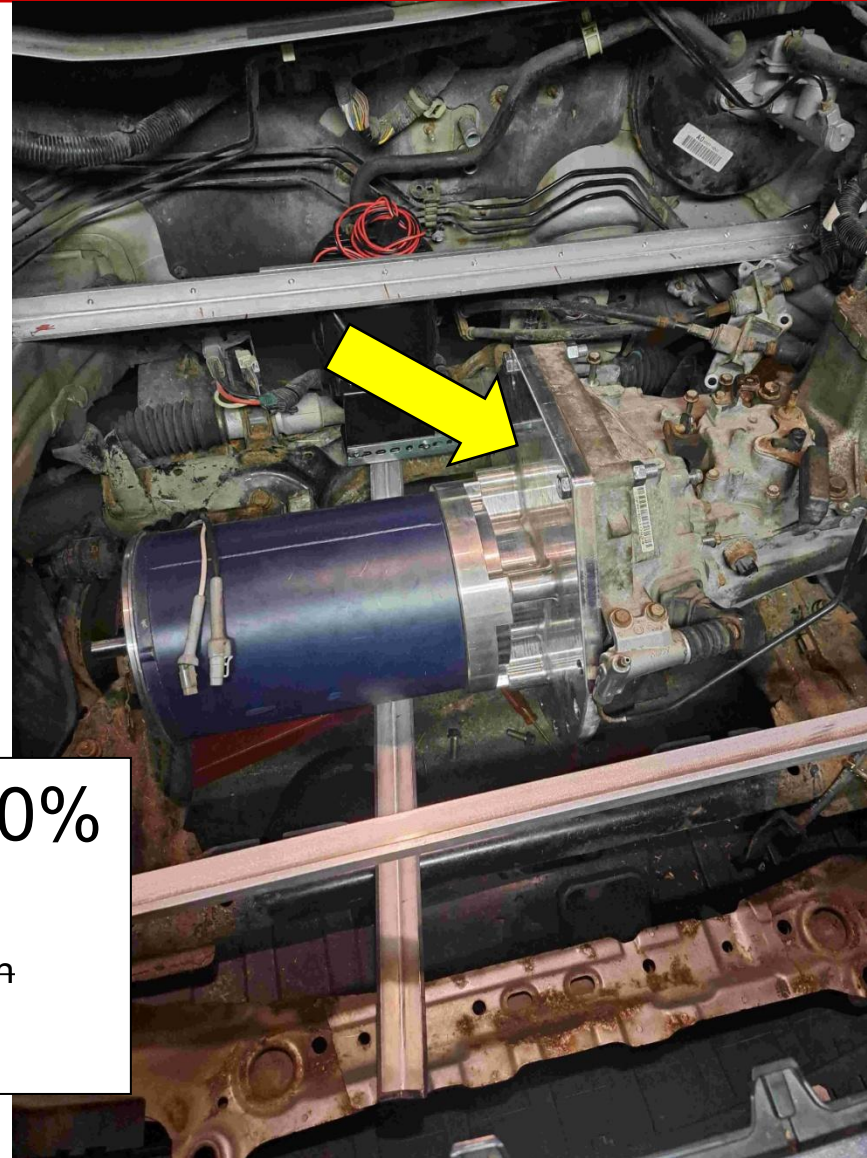
The adaptor plate



The adaptor plate



Bolting the motor into the Transmission



Chances of success: 50%

Risk items

- Batteries don't fit in engine area
- coupling of electric motor to the transmission
- Electric motor actually not working
- Unknown issues

The Magic of AI and ChatGPT



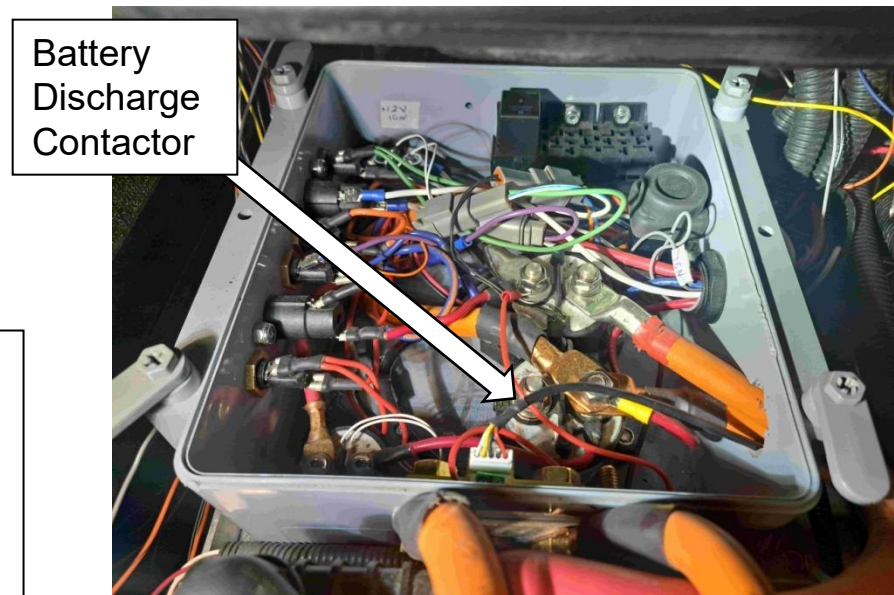
Testing the Motor

- Initial programming of the motor controller
- Motor turning in the reverse direction
- BMS is not properly controlling the Battery Discharge Contactor

Chances of success: 75%

Risk items

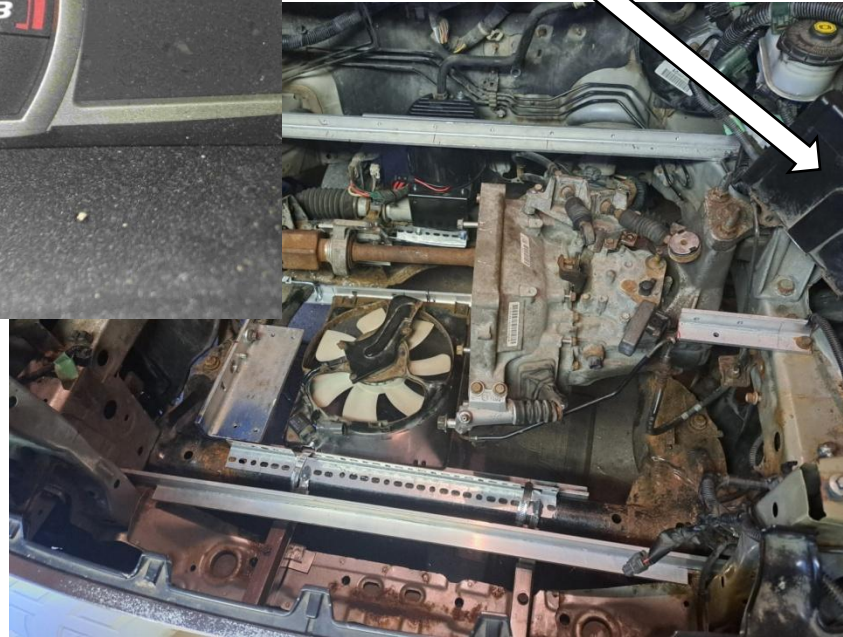
- Batteries don't fit in engine area
- coupling of electric motor to the transmission
- Electric motor actually not working
- Unknown issues



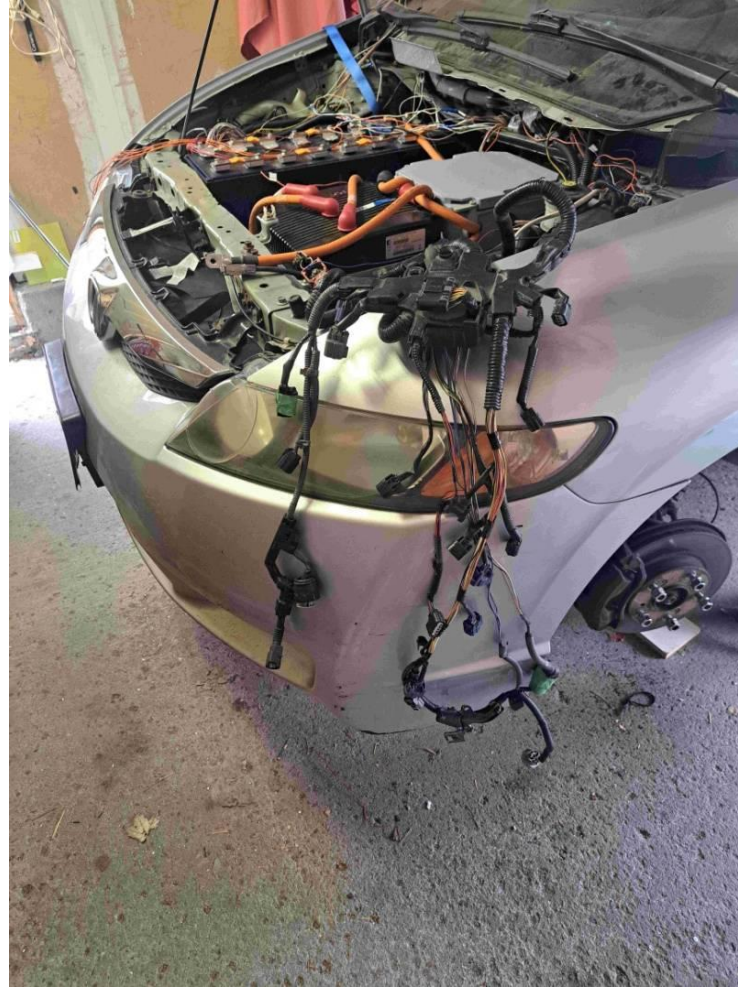
No Digital display works with the Curtis Controller



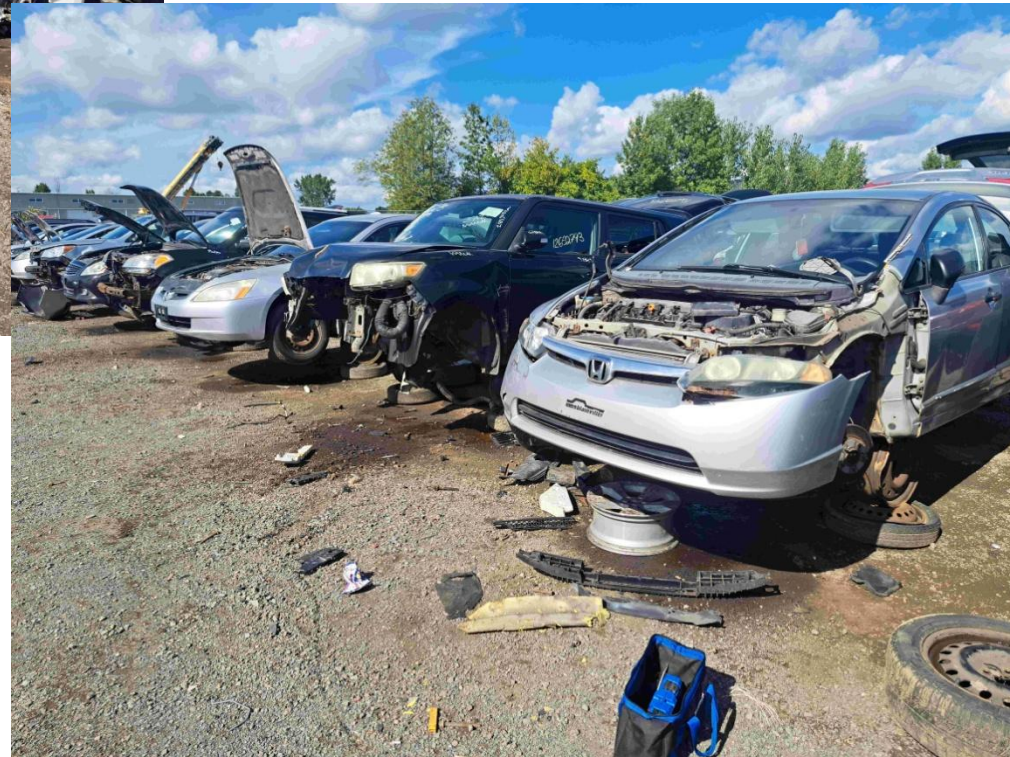
ECU (Engine Computer Unit)



The dashboard was dead and had to bring up the ECU



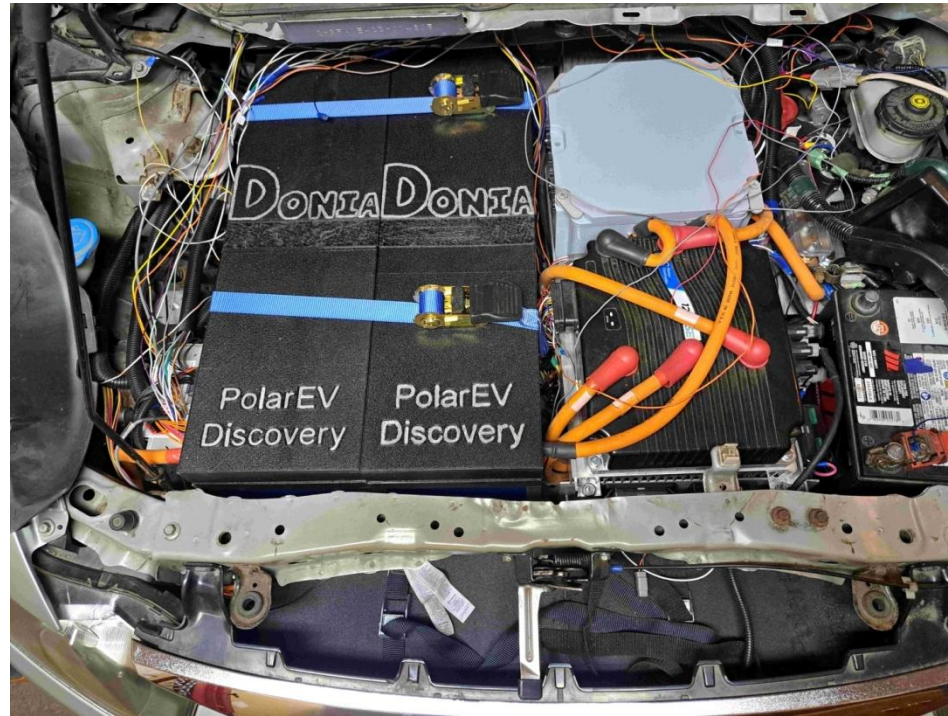
A day at the junk yard



ECU is back online and dashboard is alive!!



The Road Test



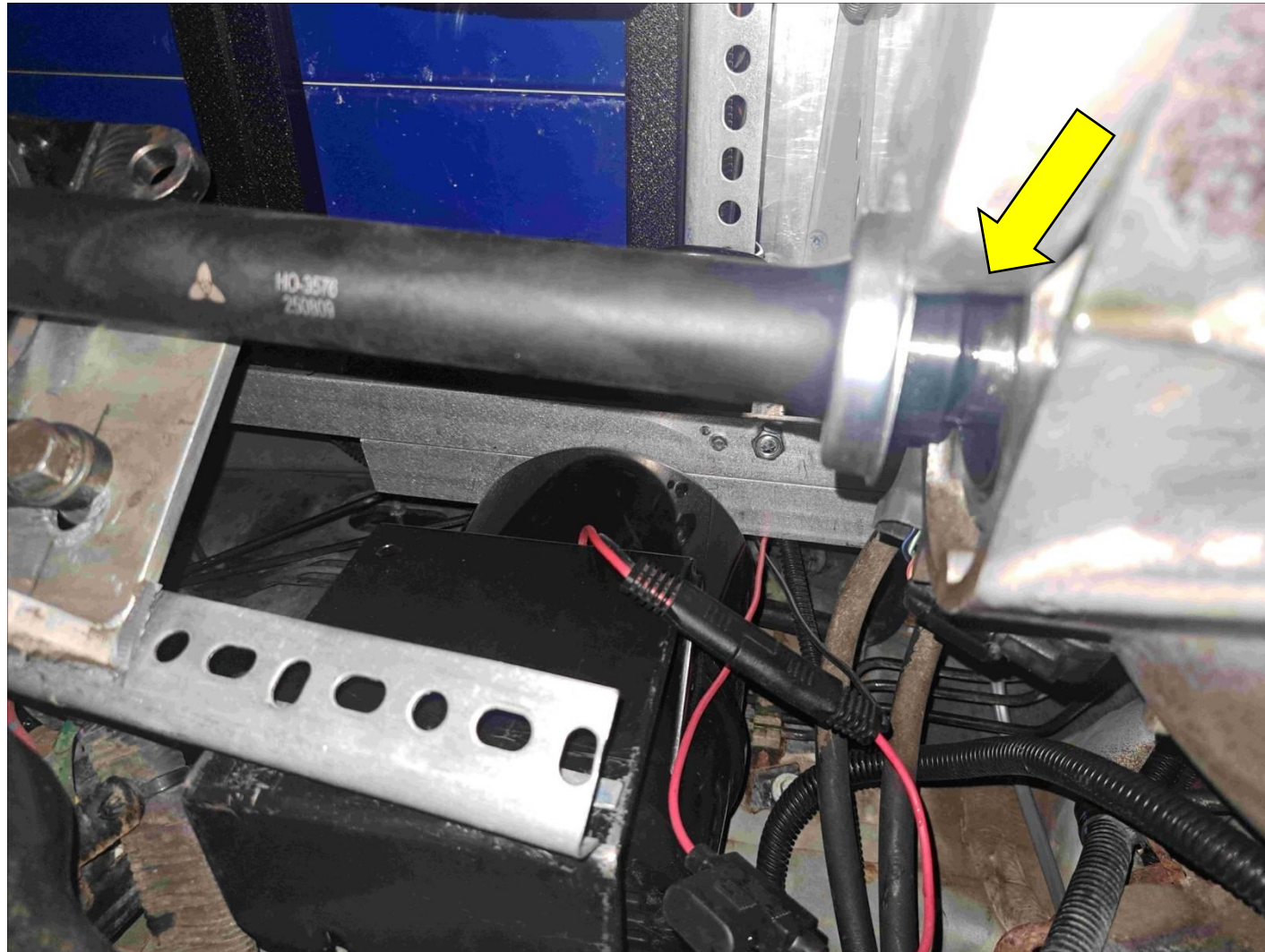
First Problem Front wheels sinking in



New struts fixed 50% of the problem



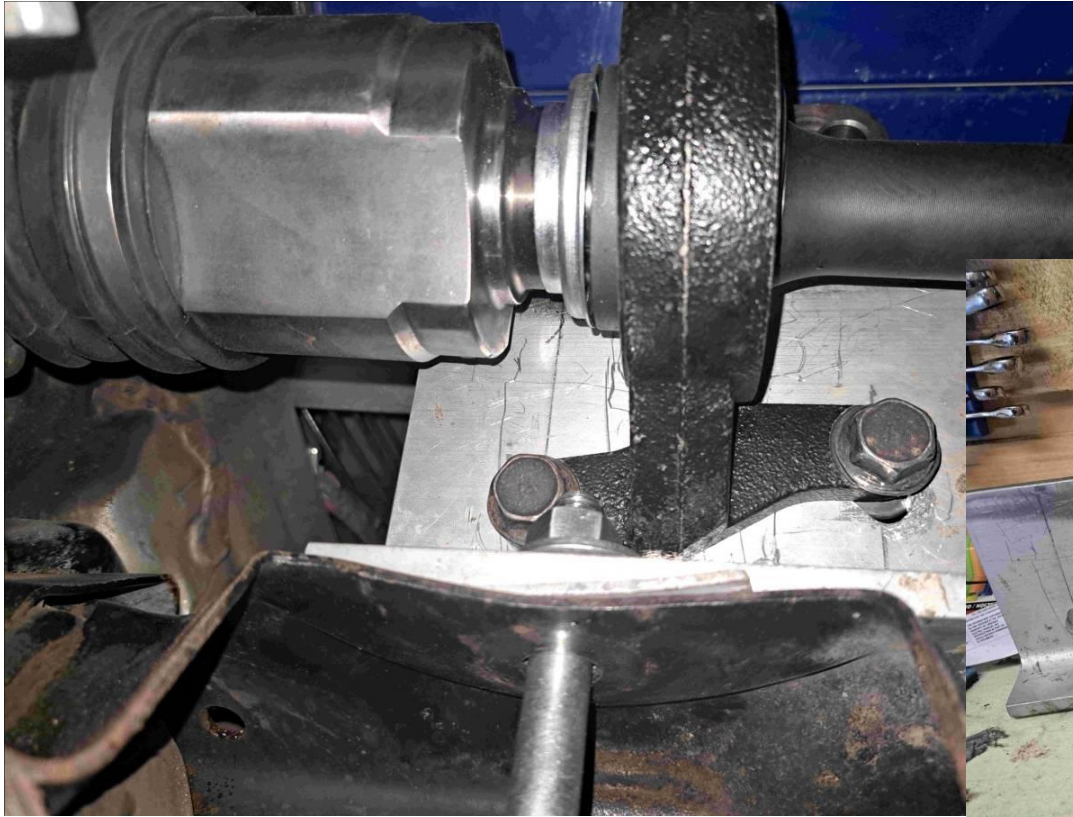
Axle popped out from the gearbox



Beefing up motor support

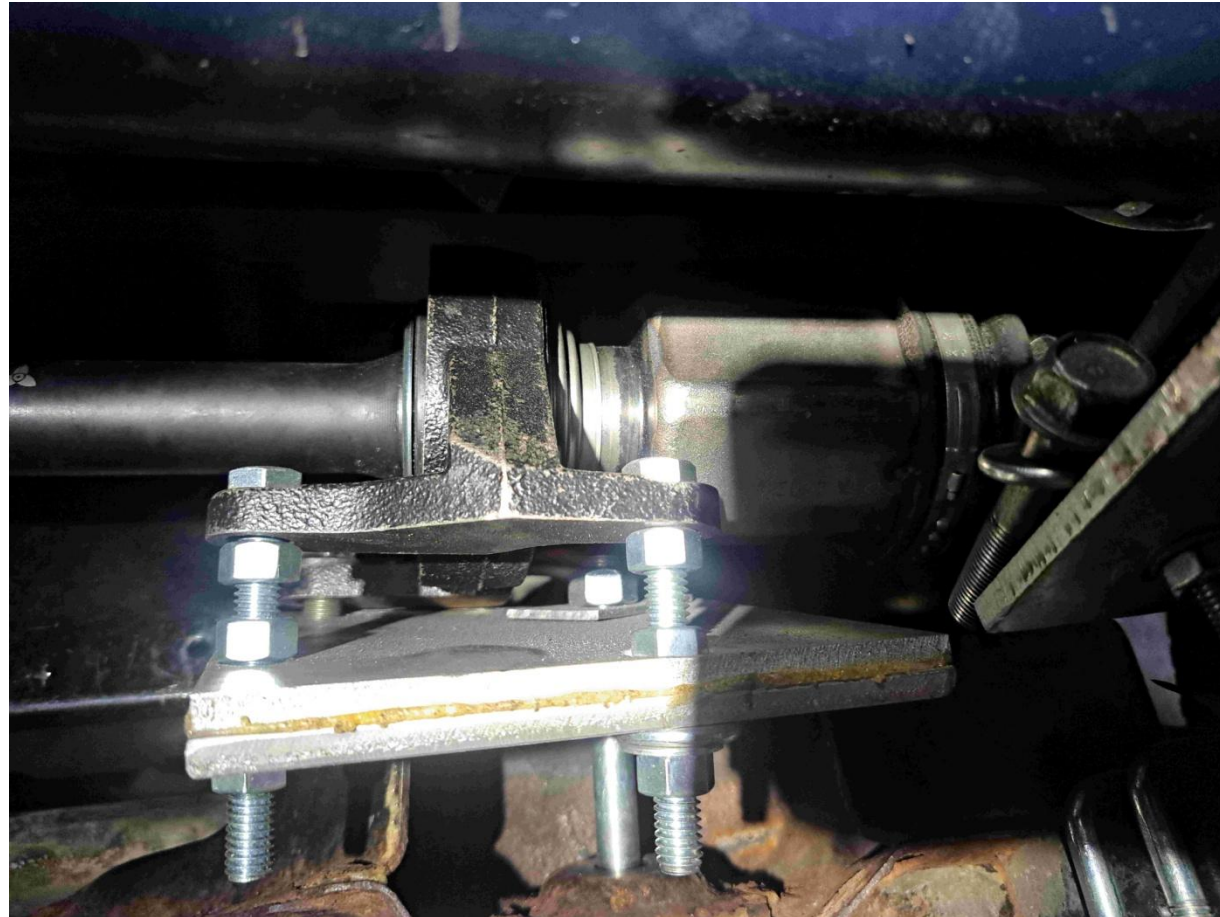


stronger Axle bracket

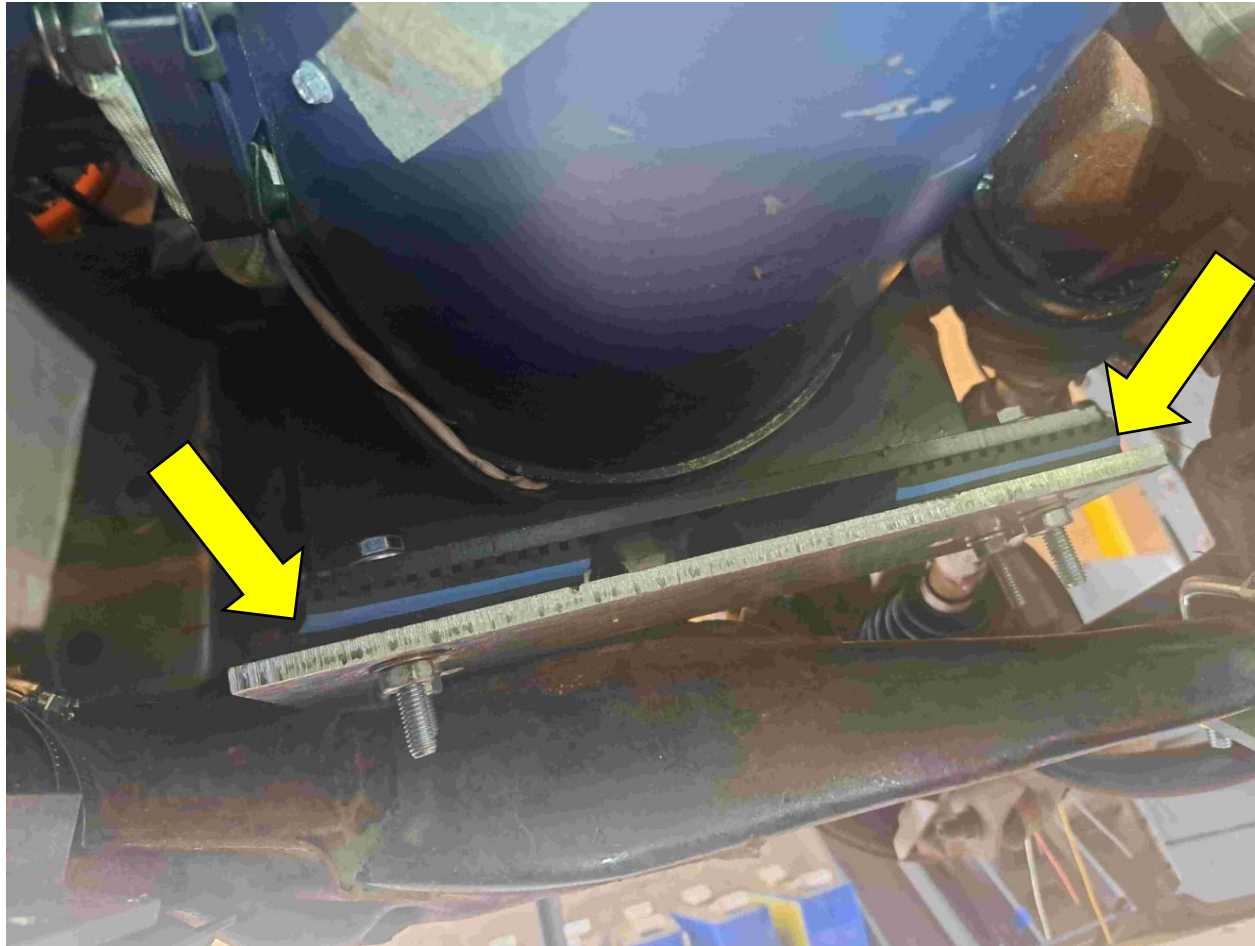


Persistent ABS Alarm and Oil leak !!

Adjustable Axle bracket

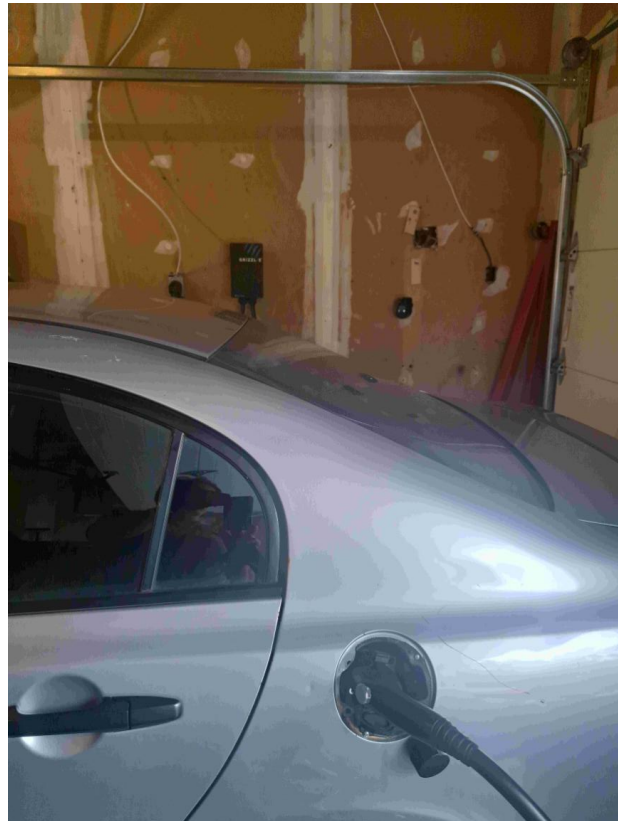


Rubber pads to reduce vibrations



Charging the Batteries

- Charging Time:
 - from 0 to 80% ~2hr
 - full charge ~4hrs



Putting the car on the Road

- Safety Certificate: Canadian Auto Mall 613.831.3332
- Appraisal : Grampa's Garage 613.729.3907
- Auto Insurance: Brokerlink. 800.665.7283x83116
- Economics:
 - Charge cost per 100Km: \$2 based on \$0.12/KWh
 - Annual cost:

	EV	Gas
Charge/fuel cost	\$400	\$3,000
maintenance	-	\$500
Insurance	\$1,800	\$900
Total	\$2,200	\$4,400

Return on investment: ~15 years

Car drives well but not perfect!!

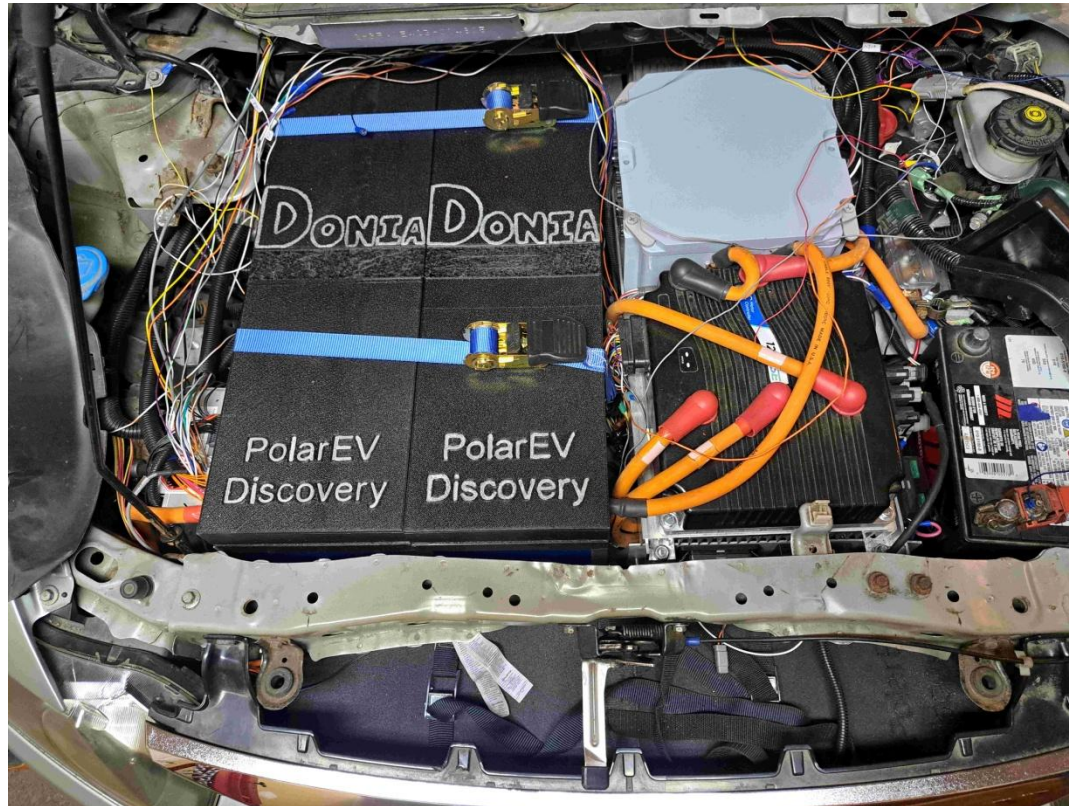
- Steering wheel is heavy at the beginning
- Some vibration when driving > 2000rpm
- Won't start in -20C° if it is not plugged in
- Clunky noise at low speed → need to be fixed
- No cover for the gas tank



If I would do this again ...

- Motors:
 - Dana TM4 Electric motors based in Boucherville Quebec
 - EV Batteries:
 - NextStar Energy (LG): Based in Winsor Ontario, started production last year with annual production capacity of 49.5GW.h
 - PowerCo SE (VolksWagen): Based in St Thomas ON, starting production in 2027 with annual capacity of 90GW.h
-

Thank you



Video Clip

Vehicle speed vs motor Speed

- EV Speed (Km) vs motor speed (rpm)

rpm	1000	2000	3000	4000
1 st gear	10	18	25	31
2 nd gear	16	30	41	58
3 rd gear	22	45	65	88
4 th gear		58	85	100*
Range	<u>~170Km</u>			

* rpm = 3600

- Gas Engine

Rpm vs speed (Km)		1000	2000	3000	4000	5000	6000	7000	8000
first gear			16.3	24.5	32.7	40.8	49.0	57.1	65.3
second gear			27.8	41.7	55.7	69.6	83.5	97.4	111.3
third gear			39.7	59.5	79.3	99.2	119.0	138.8	158.7
4th			59.5	89.2	119.0	148.7	178.5	208.2	238.0

The News

September 2026

Electric Vehicle Council of Ottawa (EVCO)



Michael Banks
Vice President, EVCO

BYD, Jaecoo, Omoda Launch Websites for Canada

- ▶ Three Chinese brands have launched websites for Canada with Jaecoo and Omoda saying sales will start by the end of this year.
- ▶ BYD's Canadian website added "Coming Soon" alongside job postings.
- ▶ None have EV models or prices listed yet.
- ▶ Reports also suggest that Canada might get "fresh" models rather than "leftovers" like some other markets.
- ▶ BYD tends to only sell previous generation models outside of China but a current Sealion 06 was seen testing in Canada suggesting Canada may get current generation vehicles.





High-Milage EVs Hold Up Better Than Gas Cars: Study

- According to a new study, EVs exhibited fewer overall defects as milage accumulated than combustion-powered vehicles.
- EVs also showed a 55% lower 'road exit rate' at 15 years old.
- The study covered 47.4 million vehicle inspections in the UK examining vehicles between three and eight years old with between 90,000 and 120,000 miles on the odometer.
- EVs had an average failure rate of 16.5% compared to ICE car failures average of 22.1%.
- Beyond 120,000 miles, EV failures dropped to 16% while ICE failures climbed to 23.5% with half as many EVs being removed from service as age climbed (5.4% vs 11.9%)



New Kempower Charging Deal Powers Canadian Port Operations

- Finnish EV charging company Kempower is bringing high-speed charging infrastructure to DP World Canadian terminal operations with the first two sites already online.
- Kempower successfully installed high-speed charging at Global Container Terminals' operation in Vancouver this month.
- GCT reportedly ran a multi-day trial of heavy-duty electric terminal tractors using only opportunity charging resulting in 'near-total uptime'.

Nissan Undercuts Kia to Retake Canada's 'Most Affordable EV' Crown

- The EV3 is no longer Canada's most affordable new EV with the 2027 Nissan Leaf S starting at under \$35k.
- The 2027 EV3 launched last month with a starting price of \$36,995 with the new Leaf pricing just announced at \$34,998.
- The new model is eligible for the EVAP incentive bringing the price under \$30,000.



The Chevy Silverado EV is Now US's Most Affordable Full-Sized Electric Pickup

- ▶ With the end of the Ford F-150 Lightning, the Silverado EV is now the most affordable full-sized EV pickup despite a slight price bump.
- ▶ Ford is preparing for the new, smaller Fathom along with an EREV F-150 and has now delisted the EV Lightning.
- ▶ The 2027 base model Silverado EV WT starts at \$53,200 USD, or \$400 more than last year's model.



Cadillac and Chevy EVs Could Soon Have A Recycled Battery

- Cadillac, Chevy and GMC EVs might now have recycled materials in them according to a GM announcement this month.
- The company said it has started installing batteries containing recycled materials from old packs into new models as part of a new pilot program.
- GM says 95% of the nickel, cobalt, and manganese and 80% of the lithium can be recovered and processed for use in new cells from old batteries.
- Recycling can help lower costs and reduce the need for mineral extraction from expensive mining operations.
- GM has partnered with Cirba Solutions to recover materials from end-of-life batteries.



- According to CEO RJ Scaringe, the Rivian R3 will be priced “materially lower” than the R2.
- The R2 will eventually start at \$45,000 USD
- He also said the follow-on R4 will be even cheaper than the R3.
- The current R2 starts at \$60,000 USD but the company says it will launch a version for \$45,000 in 2027.

Scalable software across multiple platforms



Rivian R3 Will Be Priced ‘Materially Lower’ Than R2, CEO Says

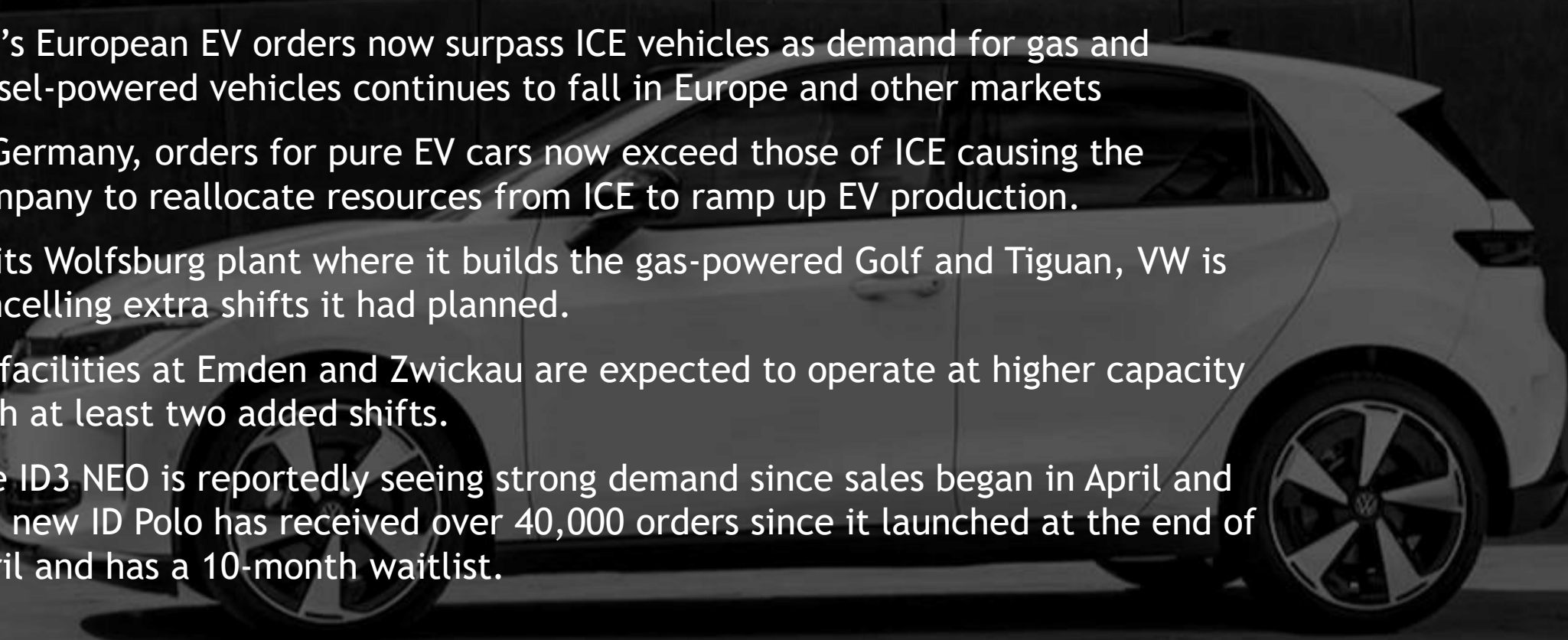
Volkswagen Delays ID Buzz Return to US Again

- The electric minibus will not return for 2027 as previously announced and will instead return for 2028.
- The Buzz first debuted in 2024 but sales struggled due to its high price and relatively low range.
- The ID4 is also not receiving a 2027 model year as the automaker revamps its lineup.



Meanwhile in Europe...

VW's EVs Are So Popular It Is Cutting ICE Shifts

- VW's European EV orders now surpass ICE vehicles as demand for gas and diesel-powered vehicles continues to fall in Europe and other markets
 - In Germany, orders for pure EV cars now exceed those of ICE causing the company to reallocate resources from ICE to ramp up EV production.
 - At its Wolfsburg plant where it builds the gas-powered Golf and Tiguan, VW is cancelling extra shifts it had planned.
 - EV facilities at Emden and Zwickau are expected to operate at higher capacity with at least two added shifts.
 - The ID3 NEO is reportedly seeing strong demand since sales began in April and the new ID Polo has received over 40,000 orders since it launched at the end of April and has a 10-month waitlist.
- 



VW Delays Ontario Battery Plant

- Volkswagen is building an EV battery plant in Ontario and has announced the start of production will be delayed by two years to 2029.
- The plant being built by VW subsidiary PowerCO is expected to supply batteries to the ID4 which was built in the US but has been stopped, and to the delayed Scout Motors vehicles.

Kia's New PV7 Is Bigger Than PV5

- The PV5 will be coming to Canada soon as a commercial van but there is so far no word on if the bigger PV7 will also come to our market.
- The new van is longer with more interior space and has an 800V battery architecture.
- The base battery is 71.5 kWh with an optional 96.2 kWh pack available.
- The current offering a single-motor front-wheel drive but an AWD version is coming.
- It can charge 10-80% in 20 minutes.
- It comes in both cargo and passenger versions.
- It will launch in Korea and Europe next year.





...But Maybe???

On the same day Kia unveiled the PV7 for Europe and Korea it was spotted testing in the United States by *KindelAuto*.

If it does launch in the US there's a good chance it will also launch in Canada but is not expected to arrive in Europe or Korea until the end of 2027 so we will likely have to wait until 2028 at the earliest.

Kia builds the vans at a dedicated plant in Korea which has a free-trade agreement with Canada.

Toyota Delays Highlander EV

- The electric Highlander was set to go on sale soon as Toyota phases out the gas Highlander but the company has now pushed back the launch date by “at least a few months” according to reports.
- The company says it needs more time to make “adjustments to the vehicle prior to launch”.
- The EV has been delayed until at least the first quarter of 2027 and will now launch as a 2028 model.
- The Subaru version - called the “Getaway” will have the same delay as they are to be built alongside each other.



Lexus Shows Electric 3-Row SUV For First Time

- The new Lexus TZ is the first purely electric three-row SUV from the brand and was spotted driving in public for the first time this month.
- It is the upscale sibling to the Highlander EV and based on the same platform.
- Charging speeds will be up to 150 kW and it will have a native NACS port.
- It was spotted in Toronto while filming a commercial.



Toyota Is Finally Taking Its Best-Seller Electric

- Toyota is preparing to introduce the electric version of its best-selling car of all time, the Corolla.
- The company offered a sneak peak at the new Corolla concept last year and it is expected to use the same TNGA-C architecture of the current Corolla with support for pure electric.
- Toyota's current chairman said in July that the company is being forced to adapt or "it cannot survive" amid competition from China.
- The next-gen Corolla is expected sometime in 2027 as a 2028 model year.





esla Corner

ROADSTER

19 : 05 : 33 : 09

Tesla Reopens \$50,000 Roadster Reservations Ahead of 1 Oct Unveil

- Tesla has reopened reservations for its next-gen Roadster asking for a \$50,000 deposit.
- The company is expected to reveal the new car near Waco Texas on Oct 1st.
- Initial deposit holders have been waiting nine years after paying the full price as a 'deposit' at \$250,000 for a "Founders Series" in 2017.
- Production was initially promised to start in 2020 and has now been delayed eight times without a single car being delivered.

Active 'Robotaxi' Fleet Back Down to Just 8 Cars

- After a brief spike in active vehicles following the Cybercab launch event in Austin TX on Sept 3rd, the fleet is now back down to the number it started with in June 2025.
- For a few days hand-picked influencers flooded social media with Cybercab videos after the launch event but that surge has now dissipated.
- On influencer's 10 minute trip became a 70-minute ordeal as the vehicle detoured for unknown reasons and left them stranded kms from their intended destination.

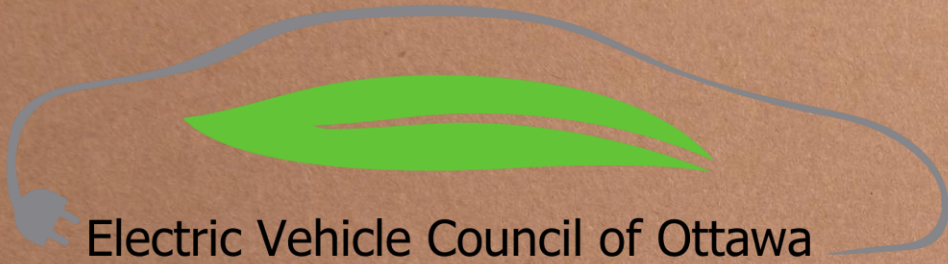
Tesla Semi Finally Enters Volume Production

- Only 7 years behind schedule Tesla officially launched high-volume production of the Tesla Semi this month at a new dedicated factory in Nevada.
- The plant can build up to 50,000 electric trucks per year.
- The Class 8 truck was unveiled in 2017 with production promised for 2019. Seven years later Tesla finally says deliveries “start now”.
- Tesla has redesigned the truck since the first hand-built units were delivered to Pepsi in 2022.
- The new version uses 4680 cells instead of the original 2170 cells and has motor and cooling changes.

Past Events

Reaching outside the bubble!





Electric Vehicle Council of Ottawa

EVCO Kilowatts & Coffee

Saturdays, 10am-noon

September dates and locations:

- Sep 5th – Second Cup, 1715 Merivale Rd, Nepean
- Sep 12th – Ten Toes, 1109 Cyrville Rd, Ottawa
- Sep 19th – EV Event, no kW & Coffee
- Sep 26th – LUNA Crepes & Café 110-329 March Rd. Kanata



Sep 19 – A Taste of Wellington

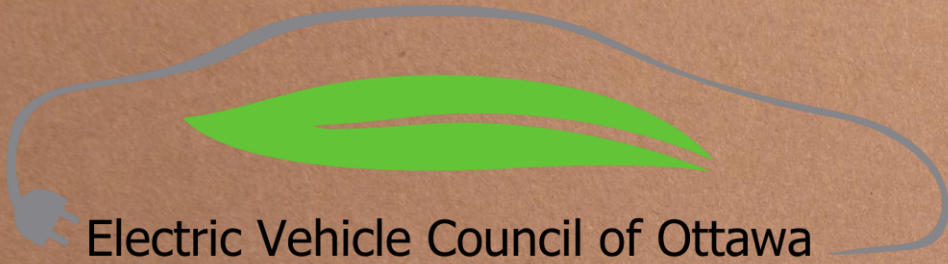


Upcoming Events



**Monthly Meeting -
Special day
1st Monday
of November
- Nov 2nd**

- ▶ 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

October dates and locations:

- Oct 3rd – Café Latte Cino, 2020 Tenth Line Rd, Orleans
- Oct 10th – Anabia Cupcakery Café, 3570 Strandherd Dr., Barhaven
- Oct 17th – Second Cup, 1715 Merivale Rd, Nepean
- Oct 24th – Café Latte Cino, 2020 Tenth Line Rd, Orleans
- Oct 31st – Cadmans Montreal Bagels, 2177 Carling Ave, Ottawa



Oct 3rd – Volunteer Appreciation Event

- 12:30 – midnight
- Food will be provided
- BYOB
- Chairs



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 • 142 subscribers • 64 videos



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

evco.ca

🔔 Subscribed ▼

Home Videos Shorts Playlists 🔍

Monthly Meetings 2026 ▶ Play all

This is a list of all EVCO monthly meetings in 2026



Electric Vehicle Council of
Ottawa May 2026 Monthly ...

EVCO

47 views • 2 months ago

Electric Vehicle Council of
Ottawa April 2026 Monthly ...

EVCO

45 views • 2 months ago

Electric Vehicle Council of
Ottawa March 2026 Monthl...

EVCO

128 views • 3 months ago

Electric Vehicle Council of
Ottawa February 2026 ...

EVCO

54 views • 5 months ago

2026 01 26 Monthly January
EVCO

14 views • 6 months ago

Roundtable!!

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





Electric Vehicle Council of Ottawa