

Electric Vehicle Council of Ottawa



October 26, 2020

Electric Vehicle Council of Ottawa Monthly Meeting

Agenda

- ▶ Overview of agenda/introductions – Raymond Leury
- ▶ WRC (World Rallycross Championship) Electric series – Nicolas Leury
- ▶ New Hummer from GM – Mike Banks
- ▶ EV News – Mitchell House
- ▶ Upcoming Events – Raymond Leury
- ▶ Round table

Projekt E Series

Electric Rallycross

STARD Ford Fiesta ERX



Ford Fiesta ERX

- ▶ 450kW (613bhp)
- ▶ 1002Nm
- ▶ 240km/h top speed
- ▶ 3 motors
- ▶ 2 speed transmission
- ▶ Dry ice to cool the battery
- ▶ €374.000



STARD

- ▶ Stohl Advanced Research and Development
- ▶ Former Gr.N rally world champion Manfred Stohl
- ▶ Been developing EV technology for motorsport since 2012
- ▶ Produce the cars entirely in-house



Projekt E

- ▶ Support category to the FIA World Rallycross Championship
- ▶ Groups of 4 (it's rallycross)
- ▶ Past races:
 - ▶ August 22nd in Sweden
 - ▶ September 19&20 in Riga, Latvia
- ▶ Future races
 - ▶ Nov 21-22 at Spa in Belgium
 - ▶ Dec 12-13 in Germany



If we have time

▶ <https://www.youtube.com/watch?v=AXExY-aQYt0>



The GM Hummer EV

Electric Vehicle Council of Ottawa (EVCO)



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Mike Banks

Finally Revealed!



It's Modern! (for now...)

- ▶ 800 V pack (for charging - 400V nominal via internal switching)
- ▶ 350 kW DCFC (aka 160km in 10 minutes)
- ▶ Unreal Engine from Epic Games powers the infotainment system.
- ▶ Powered 'frunk', roof panels fit inside.
- ▶ One-pedal driving
- ▶ Pouch cells in 24 modules from LG Chem



It's An Off-Road Beast!

- ▶ Underbody is armoured and has rock sliders for rock crawling.
- ▶ 35 inch, off-road tires standard
- ▶ 37 inch, military off-road tire capable without modification
- ▶ 10.1" ground clearance base height, can increase by 6" using 'extract mode' for total max clearance of 16.1".
- ▶ Minimum ground clearance is 8.1" for highway driving.
- ▶ Up to 11,500 lb ft of torque
- ▶ Torque vectoring possible as needed.
- ▶ Water fording depth 36".



Three+ variants

- ▶ EV2 - 2 motors, 400+km range, 625hp/7,400 lb ft torque.
- ▶ EV2X - 2 motors, 480+ km range, same power and torque as EV2.
- ▶ EV3X - 3 motors, 560+ km range, 1,000hp/11,500* lb ft torque
 - ▶ Torque is at the wheel, if measured conventionally it is likely closer to 1,000 lb ft and in line with other EV trucks coming to market.
- ▶ Edition 1 - Essentially the same as the EV3X but with a limited edition Apollo 11-themed interior and colours.



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EV2

- ▶ Duel 250 kW motors for a total of 500 kW
- ▶ 400+km range
- ▶ Available Spring 2024
- ▶ MSRP \$79,995 USD



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EV2X

- ▶ Duel 250 kW motors for a total of 500 kW
- ▶ 480+km range (slightly larger battery)
- ▶ Available Spring 2023
- ▶ MSRP \$89,995 USD
- ▶ Includes 'Crab mode' and 'Extract' mode



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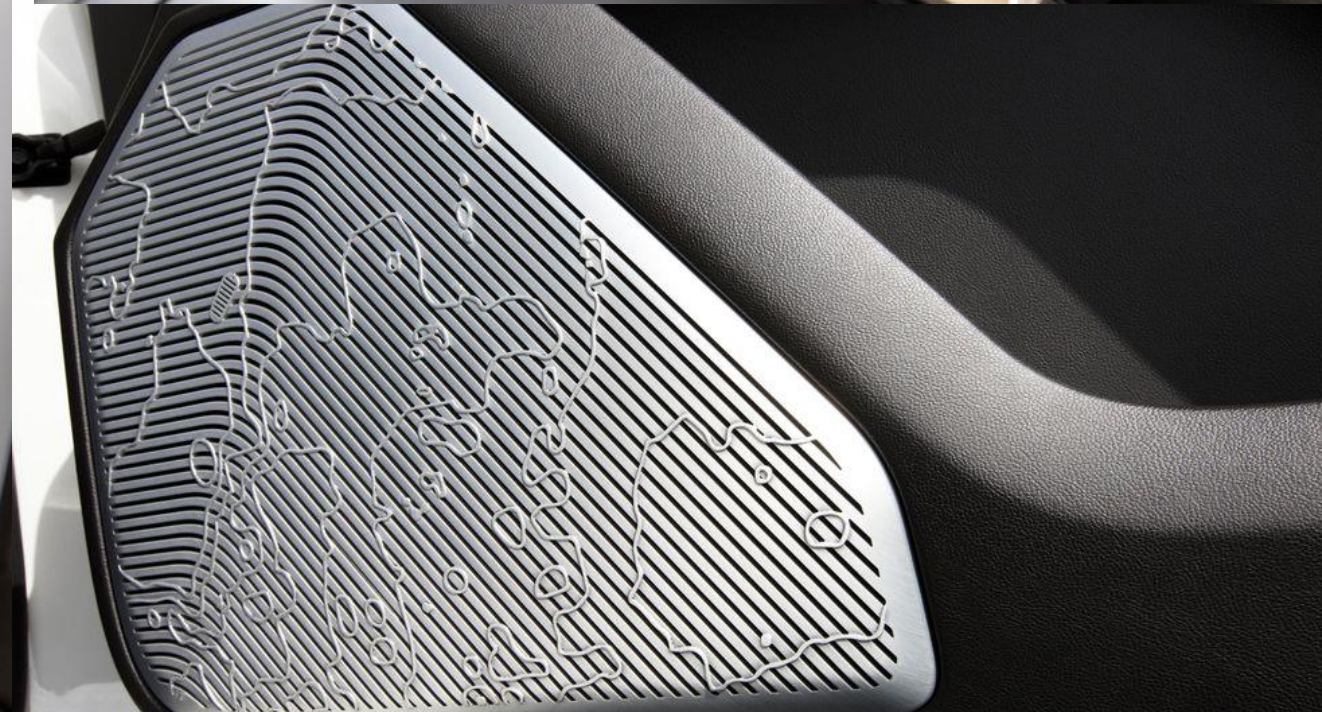
EV3X

- ▶ Three 250 kW motors for a total of 750 kW
- ▶ 560+km range
- ▶ Available Fall 2022
- ▶ MSRP \$99,995 USD
- ▶ 0-60 in 3 seconds
- ▶ Tri-motor because front is traction-limited



Edition 1

- ▶ Sold out in first ten minutes of availability
- ▶ Currently has a 2,000+ waiting list
- ▶ Delivery fall 2021
- ▶ MSRP \$112,595 USD
- ▶ Interior has Apollo 11-theme



Final thoughts

- ▶ Has the makings of a very credible off-roader.
- ▶ Makes Rivian look affordable.
- ▶ Decent specs (apart from price) with current similar EV's however will be outclassed and uncompetitive by 2024 when the “affordable” version finally ships.
- ▶ Crab-mode has dubious utility (perhaps GM is thinking of bidding to replace actual HMMWV's for US military with Hummer EV-based platform?)
- ▶ Incredibly inefficient, even for an EV.
- ▶ Will likely sell well for its incredibly small niche.
- ▶ Jeep-type EV segment remains unfilled (come on Ford & FCA!!!)




EV News - October

Summary

- ▶ Volvo XC40 Recharge in Canada
- ▶ Tesla Q3 Earnings
- ▶ Model 3 Updates
- ▶ FCA Production in Canada
- ▶ Hyundai Kona recalls
- ▶ Mercedes EQC 4x4

Volvo XC40 Recharge

- ▶ ~\$65,000 starting price
 - ▶ Arriving in showrooms by end of year
 - ▶ 335 km range with 78 kWh battery
 - ▶ 400+ HP, 486 lb-ft torque, 1500 kg towing, 150 kW charging
 - ▶ Over-the-air software updates, charging partnership with Chargepoint
 - ▶ Car sharing comes standard, with ability to grant access for periods of time
- 

Tesla Q3 Reporting

- ▶ Small net income (\$331 million) on revenue of \$8.77 billion.
- ▶ Goal of company is to continue to grow and scale while keeping reasonable profit
- ▶ Goal to deliver 500,000 vehicles by year end → Delivered ~319,000 vehicles by Q3
- ▶ Expected growth in delivery of Model Y vehicles by year end
- ▶ Vehicles continue to make up over 90% of revenue
- ▶ \$397 million revenue from carbon credit trading, nearly doubling year-over-year
- ▶ Deliveries possible at all new factories by end of 2021, including Giga Texas and Giga Berlin
- ▶ Energy storage products achieved near doubling on production and installation YoY

Tesla Model 3 Updates



- ▶ Range increase: Now 423km (SR+), 568km (LR), and 507km (Performance)
- ▶ Wheels are more angular, with updated performance rims to reveal-style wheels
- ▶ New center console, updated headlights, power trunk, matte black trim, heat pump heating for cabin

FCA Producing EVs in Canada

- ▶ Production of PHEV and full EV models in Windsor by 2025
- ▶ Negotiated by Unifor in similar way to Ford EV production in Oakville
- ▶ Deal will re-hire 425 formerly laid-off workers, and create additional 1,500 jobs in the area
- ▶ Production on existing vans will continue, with three new product derivatives

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Hyundai Kona Recalls

- ▶ Recall on 4,375 Kona EVs in Canada, affecting vehicles manufactured between August 28th 2018 and March 2nd 2020.
- ▶ Global recall affecting all Kona EVs delivered in other countries (roughly 77,000)
- ▶ Unclear on scope of recall; Update of software to determine if any cells are operating out of spec or damaged.
- ▶ 13 Kona EVs have caught on fire over this period, with one high profile case in Quebec.
- ▶ Best assumption is battery management system was not able to identify specific cells in battery pack that were defective, and was no longer able to manage battery packs with defective cells leading to failure.



Mercedes EQC 4x4²



- ▶ Another one-off example of electric vehicles performing like typical ICE vehicles
- ▶ Studded tires, increased ground clearance (doubled, taller than G-Wagen), widened wheel arches
- ▶ Approach angles at front and back are greater than G-Wagen, while also having off-road specific vehicle control software enabling greater off-road capabilities

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US 2020 Q1-Q3

Brand	Month	LY	Change	YTD	YTD Last Year	YTD Change
Acura	12,941	11,098	16.61%	95,653	112,813	-15.21%
Alfa Romeo	1,707	1,304	30.90%	12,493	13,347	-6.40%
Audi	16,173	16,130	0.27%	124,106	158,471	-21.69%
BMW	22,523	27,467	-18.00%	181,547	232,426	-21.89%
Buick	16,599	15,317	8.37%	118,561	157,852	-24.89%
Cadillac	11,131	12,093	-7.96%	86,586	115,697	-25.16%
Chevrolet	151,656	153,107	-0.95%	1,209,044	1,444,539	-16.30%
Chrysler	10,761	8,940	20.37%	75,671	93,966	-19.47%
Dodge	24,290	31,517	-22.93%	204,347	332,245	-38.50%
Fiat	372	714	-47.90%	3,569	7,464	-52.18%
Ford	176,101	165,862	6.17%	1,421,616	1,719,052	-17.30%
Genesis	1,128	1,559	-27.65%	11,285	14,910	-24.31%
GMC	44,824	42,608	5.20%	353,223	418,070	-15.51%
Honda	114,117	102,827	10.98%	875,066	1,093,596	-19.98%
Hyundai	54,790	51,951	5.46%	441,081	506,356	-12.89%
Infiniti	5,864	7,031	-16.60%	59,021	87,934	-32.88%
Jeep	75,033	74,288	1.00%	581,591	701,755	-17.12%
Kia	55,519	44,619	24.43%	428,260	463,598	-7.62%
Lexus	24,754	18,860	31.25%	182,088	209,551	-13.11%
Lincoln	9,304	8,455	10.04%	74,397	78,752	-5.53%
Mazda	24,237	18,838	28.66%	203,280	208,165	-2.35%
Mini	2,991	3,505	-14.66%	19,498	27,826	-29.93%
Mitsubishi	8,393	7,722	8.69%	72,617	95,574	-24.02%
Nissan	86,782	94,213	-7.89%	615,119	956,456	-35.69%
Porsche	5,250	5,213	0.71%	39,725	45,062	-11.84%
Ram	59,150	54,232	9.07%	443,342	512,368	-13.47%
Subaru	60,103	51,659	16.35%	436,556	525,329	-16.90%
Tesla	47,036	23,025	104.28%	228,900	138,600	65.15%
Toyota	172,370	150,796	14.31%	1,270,137	1,569,751	-19.09%
Volkswagen	28,538	26,947	5.90%	229,512	278,155	-17.49%
Volvo	10,274	9,323	10.20%	73,604	77,425	-4.94%

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The background features abstract, overlapping geometric shapes in various shades of green, ranging from light lime to dark forest green. The shapes are primarily triangles and polygons, creating a dynamic, layered effect. The central area is white, providing a clean space for the text.

EVCO and EV Society Merchandise

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All Products Apparel - Homeware - Accessories - About



EVCO Women's Comfort Tee
Women's Comfort Tee
\$18.45 CAD



EVCO Men's Classic Tee
Classic Tee
\$16.86 CAD



rEvolutionary Classic Tee
Classic Tee
\$15.89 CAD



ICE Age
Triblend Tee
\$22.85 CAD



<https://teespring.com/stores/evco>



rEvolutionary Classic Tee

Classic Tee
\$15.89 CAD



EV Society Classic Tee

Classic Tee
\$15.79 CAD



Kicking gas 2012 Tee

Classic Tee
\$19.87 CAD



Kicking Gas Since 2013

Classic Tee
\$19.83 CAD



Kicking Gas Since 2014

Classic Tee
\$19.83 CAD



Kicking Gas Since 2015

Classic Tee
\$19.83 CAD



Kicking Gas Since 2016

Classic Tee
\$19.83 CAD



Kicking Gas Since 2017

Classic Tee
\$21.08 CAD

<https://teespring.com/stores/electric-vehicle-society>

Past Events

Reaching outside the bubble!

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GREEN DRINKS - OCTOBER 8, 2020

HEATING & COOLING YOUR HOME MORE SUSTAINABLY



Daniel Vivian P. Eng,
Founder
Building Science Trust



Chris Meecham
Energy Consultant,
Execon Roofing & Solar

Join Us
On Zoom

Hosted by



RSVP: bit.ly/GDOTTOct2020

Every 2nd Thursday of the month
Now presented Online via Zoom
Please register via Eventbrite

@GreenDrinksOTT
Facebook.com/OttawaGreenDrinks
Ottawa-Renewable-Green-Energy-Meetup



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[http://bit.ly/GDOTTOct2020](https://bit.ly/GDOTTOct2020)

Past Events

- ▶ Sept 26 - Oct 4 - National Drive Electric Week
 - ▶ Drive-By Demo
- ▶ October 21 - Transit Commission Meeting
 - ▶ Start of e-bus section
<https://youtu.be/rujPoNwL4Ro?t=10219>
 - ▶ Start of EVCO presentation
<https://youtu.be/rujPoNwL4Ro?t=10985>

Upcoming Events

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Upcoming Events - regular

November 12 - Green Drinks

Virtual via Zoom

<http://bit.ly/GDOTTNov2020>

November 30 - Next EVCO
meeting

GREEN DRINKS - NOVEMBER 12, 2020 RESPONSIBLE INVESTING



Tina Crouse
CEO & Founder
ANSWER.it



John Hastings
Investment Advisor
RBC Wealth Management



Aaron Thornell
Member Manager
Co-Energy Co-operative



Marc Goldgrub
Lawyer
Green Economy Law



Hosted by



RSVP: bit.ly/GDOTTNov2020

Every 2nd Thursday of the month
Now presented Online via Zoom
Please register via Eventbrite

@GreenDrinksOTT
Facebook.com/OttawaGreenDrinks
Ottawa-Renewable-Green-Energy-Meetup



Upcoming Events

- ▶ November 9-10 - EMC - EVÉ 2020 - (Virtual)
- ▶ October 2nd to Dec 13th - MEET
 - ▶ IKEA Parking yellow Post A
 - ▶ Mobile EV Education Trailer



The MEET – Mobile EV Education Trailer!

- Hybrid between EV Discovery Centre and Road Show
- Launch in Ottawa, Drive Electric Week 2020 (Sept 26-Oct 4)
- Cross-Canada tour ‘EVs are for Everyone’!
- Sponsors include: NRCAN, OPG, Hydro One, PWU, Automakers





Electric Vehicle C



Electric Vehi

Presentations

- ▶ If you would like to present at a future meeting:
 - ▶ Send me e-mail, I will send you the template
 - ▶ Provide your slides by the Sunday before the meeting
 - ▶ I will integrate into overall presentation

Roundtable!

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