

Electric Vehicle Council of Ottawa



May 31, 2021

Electric Vehicle Council of Ottawa Monthly Meeting

Agenda

- ▶ Overview of agenda/introductions – Raymond Leury
- ▶ EV News – Mitchell House
- ▶ Driving is Dangerous - Craig Sweetnam
- ▶ Changes to Model 3 – Darren Robichaud
- ▶ Past/Upcoming Events – Raymond Leury
- ▶ Round table
 - ▶ Charging stations at Ottawa facilities

EV News - May 2021

Summary

- ▶ Ford F-150 Electric
- ▶ Ford Increases budget for electrification
- ▶ Polestar CO2 Tracking in EV Supply Chain
- ▶ Green Hydrogen - Bloomberg NEF
- ▶ International Energy Agency
- ▶ IESO - Public Consultation on Gas Plants

Ford F-150 Electric



- ▶ Launching Spring 2022
- ▶ Two Battery Options
 - ▶ 370 km
 - ▶ 480 km
- ▶ Both range figures are with 1,000 lbs payload
 - ▶ “Commuting” range between 420 km and 550 km
- ▶ Unclear what winter range is, or battery size

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Ford F-150 Electric

- ▶ Consumer Price XLT: \$68,000
- ▶ Commercial Price: \$58,000
- ▶ All-wheel drive standard on all models
- ▶ Payload: 2,000 lbs (smaller battery)
- ▶ Towing: 10,000 lbs (larger battery)
- ▶ 19.2 kW AC charging, 150 kW DC Charging

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Ford F-150 Electric

- ▶ Can deliver 9.6 kW of power on job sites
- ▶ Fold out workstations at front and back
- ▶ Power front-trunk with 400 lbs capacity
- ▶ Acts as backup storage for power outages, powering homes for 3 days or more
- ▶ Onboard scales to determine range while towing
- ▶ Over-the-air Software Updates
- ▶ Power My Trip: Shows route with charging stops, accounting for weather, traffic, payload, towing weights, etc.



Comparing F-150s



Add to compare

2021 FORD F-150 XLT

STOCK #: 21-529 | IN STOCK: NEW

-  Engine: V6 Cylinder Engine
-  Drivetrain: 4x4
-  Transmission: Automatic
-  Exterior: Velocity Blue Metallic

MSRP: 62,564

\$62,564 +TAX & LIC



Add to compare

2021 FORD F-150 XLT

STOCK #: 21-535 | IN STOCK: NEW

-  Engine: 8 Cylinder Engine
-  Drivetrain: 4x4
-  Transmission: Automatic
-  Exterior: Velocity Blue Metallic

MSRP: 63,214

\$63,214 +TAX & LIC



Add to compare

2021 FORD F-150 XLT

STOCK #: 21-542 | IN STOCK: NEW

-  Engine: 8 Cylinder Engine
-  Drivetrain: 4x4
-  Transmission: Automatic
-  Exterior: Agate Black Metallic

MSRP: 65,074

\$65,074 +TAX & LIC

Electri

Comparing F-150s

- ▶ V8 F-150: 13.1 L/100 km Average
- ▶ 20,000 km/year = 2,620 L/year = \$3,400 fuel cost per year
- ▶ 30,000 km/year = 3,930 L/year = \$5,100 fuel cost per year
- ▶ Difference between Electric and V8 = \$4,800
- ▶ Payback period for contractors ~1 year or less, everyone else 1-2 years
- ▶ Doesn't account for oil changes, mechanical issues, reduced downtime savings, etc.

Ford Increased EV Budget

- ▶ \$8 billion additional investment to 2025, now \$30 billion total
- ▶ 40% of vehicles will be pure electric by 2030 (likely to be more)
 - ▶ \$30 billion is nearly three times larger than first announcement back in 2018 (\$11 billion)
- ▶ Two new dedicated platforms for EVs
 - ▶ Platform for all vehicles
 - ▶ Large Pickup Truck platform (hopefully to replace series production of existing F-150)
- ▶ Electric Ford Explorer (including Police Interceptor), similar Lincoln Vehicle, potentially electric Bronco
- ▶ Battery demands of 140 GWh in North America by 2030 (1.4 million vehicles with 100 kWh battery packs - seems small)
- ▶ Vertical integration of battery production and integration with vehicles

Polestar CO2 Tracking



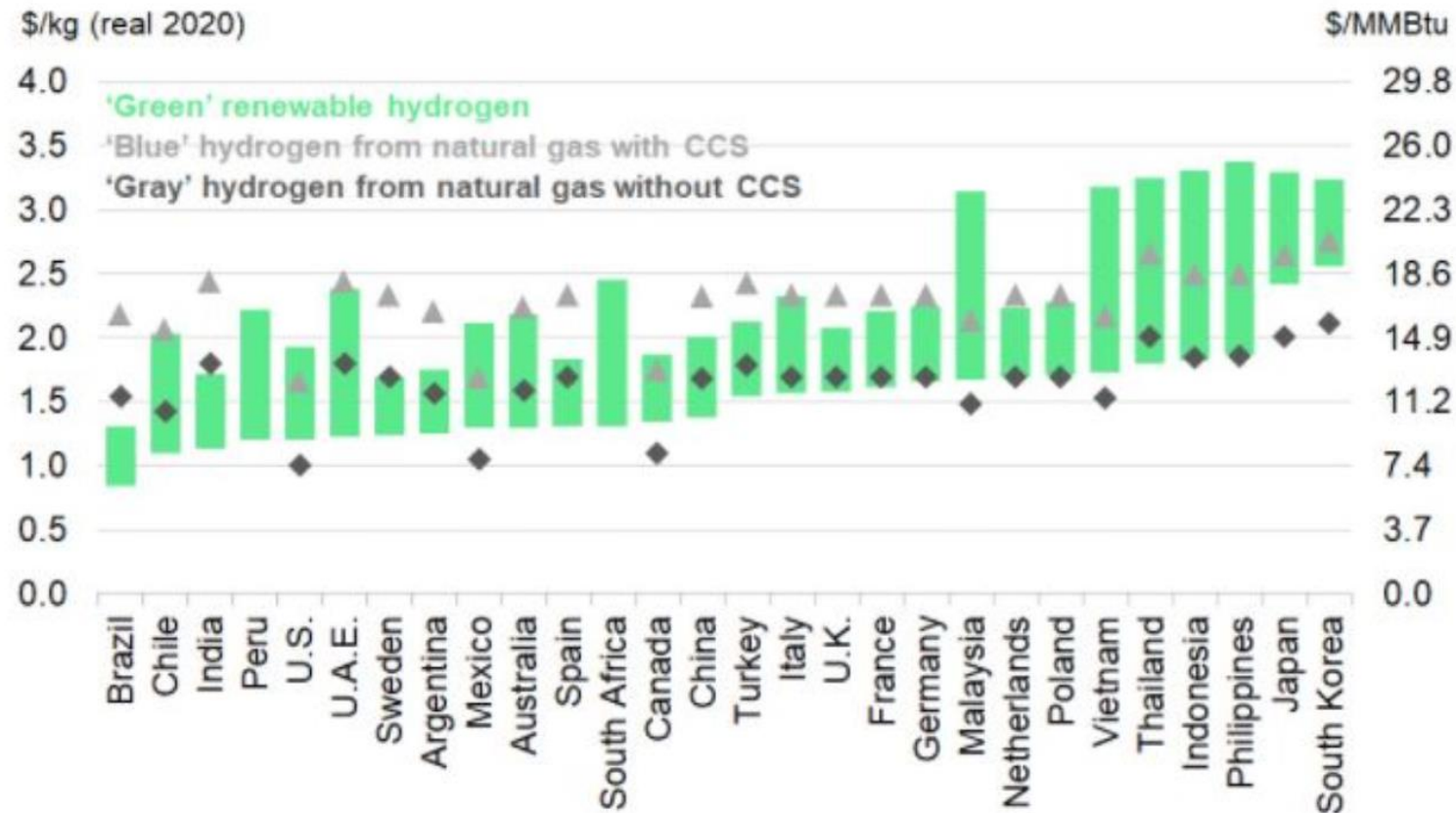
- ▶ Track CO2 consumption through supply chain with blockchain technology
- ▶ Goal to produce carbon-neutral car by 2030
- ▶ Show customers emissions that are generated per plant as well as emissions by suppliers through supply chain
- ▶ Current focus on raw materials such as cobalt, but further development into other segments is also important

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'Green' Hydrogen to Outcompete 'Blue' Everywhere by 2030

'Green' versus 'blue' hydrogen costs, 2030



Source: BloombergNEF

International Energy Agency Net Zero in 2050: A roadmap for the global energy system

- ▶ Report: <https://www.iea.org/reports/net-zero-by-2050>.
- ▶ Event: https://www.youtube.com/watch?v=WQ5HsTyU_5Q

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IESO - Public Consultation on Gas Plants

- ▶ IESO - Independent Electrical System Operator
- ▶ Gas plants are used for peak power
- ▶ Ford governments wants to greatly expand their use as demand grows
- ▶ Clean Air Alliance is pushing to close gas plants by 2030
- ▶ Public Consultation for May 27th was postponed to June
- ▶ EVCO submitted feedback supporting closing by 2030

- ▶ **2021 IESO Summit-Lite - June 22 - 9-12AM**
 - ▶ <https://ieso.ca/en/Sector-Participants/Engagement-Initiatives/Overview/Summit-Lite>
- ▶ **Stakeholder Engagement Meetings - June 22-24**

Driving is dangerous

What can we do about it

Driving is DANGEROUS

- ▶ 1.35 million people die in road accidents worldwide every year — 3,700 deaths a day.
- ▶ Car crashes have risen to the 8th leading cause of death for people globally.
- ▶ Saturday is estimated to be the deadliest day of the week for car crashes in the US.
- ▶ Distracted driving is a leading cause of accidents, causing 25–50% of all crashes.
- ▶ 1st world countries have fewer deaths per capital than 2nd and many 3rd world countries.
- ▶ **In 2019, there were a total of 36,096 fatalities on US roads.**
- ▶ 2.35 million people were reported injured in some from mild to permanent disability

2018 Tesla Model 3 (long range, dual motor)

Updates aplenty!



2018 Tesla Model 3



2011 Nissan LEAF



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Tesla vs my first EV

2018 Tesla Model 3

- ▶ New features and improvements at least once a month on average (39!)
- ▶ 2018 - 5 updates (Oct-Dec)
- ▶ 2019 - 13 more
- ▶ 2020 - 17 more
- ▶ 2021 - 4 (to date)

2011 Nissan LEAF SL

- ▶ Software update at dealership in 2012 - no visible changes
- ▶ Next update in 2016 was to remove Carwings functionality (3G phone app)
- ▶ Due to the Nissan Privacy policy, I decided to NOT install Carwings (and it could NOT be used to find your car if stolen/missing)

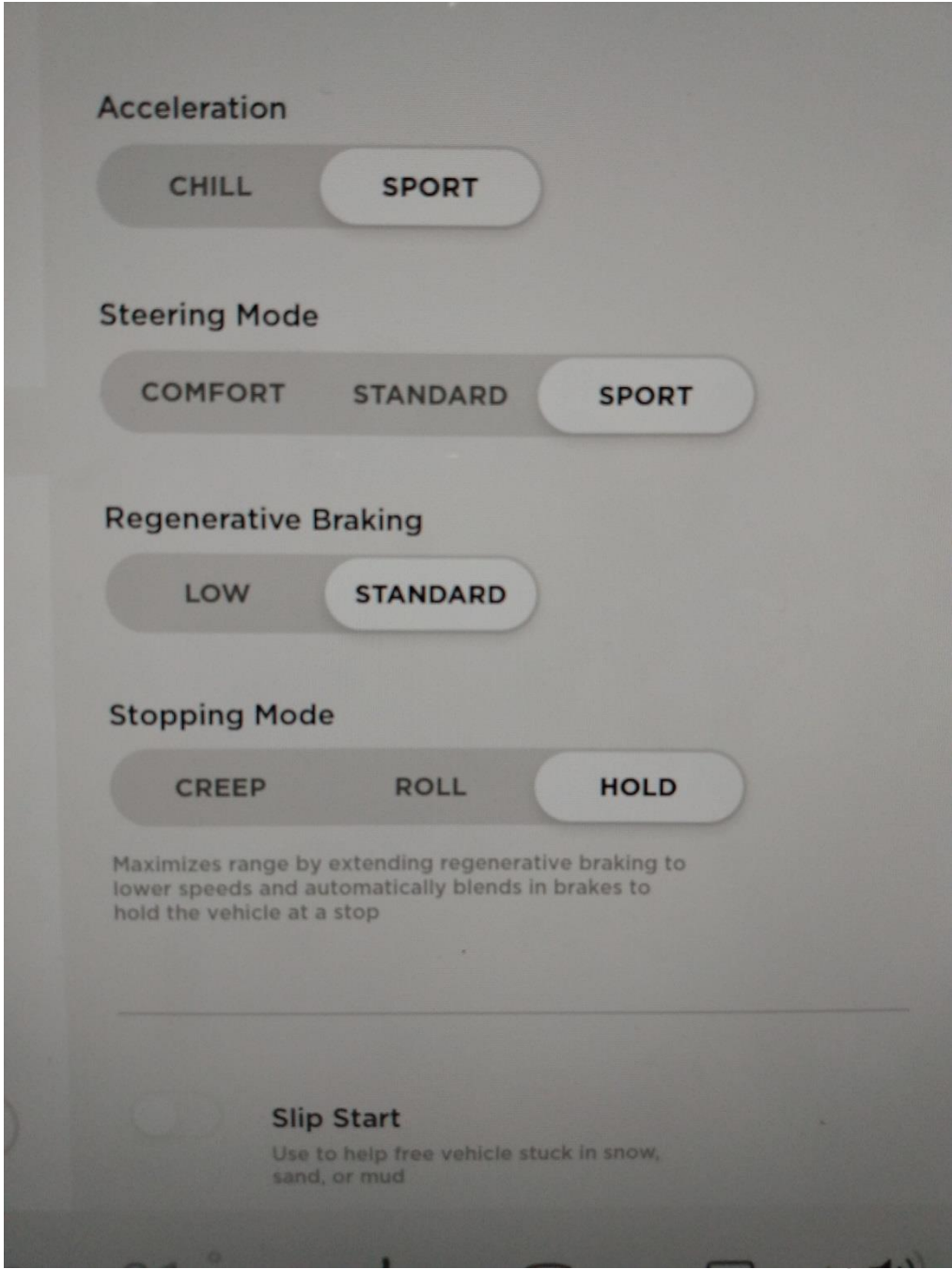
Model 3 - when NEW in fall 2018

Seemed like it had plenty of features at time of purchase:

- ▶ Navigation system with traffic
- ▶ Music (radio, streaming, phone, Tune-in)
- ▶ Toy box with 'emissions' testing, romance mode, sketchpad, mars maps, Santa mode.
- ▶ Internet browser, with favourites (bookmarks)!
- ▶ Backup camera
- ▶ 364 horsepower, EPA range of 499km

Update - range added

- ▶ Range improvement to 518km
- ▶ New stopping mode (hold) was added to creep, roll
- ▶ ‘Hold’ mode enables one pedal driving as regen works to a lower speed, and car will blend brakes to a full stop (very smooth stopping)
- ▶ SW update for more efficient motors also helped
- ▶ 2021 dual motor long range cars have EPA range of 568km (with a few kwh added capacity)
- ▶ After 2.5 years (54,300km), range is 485km approx.



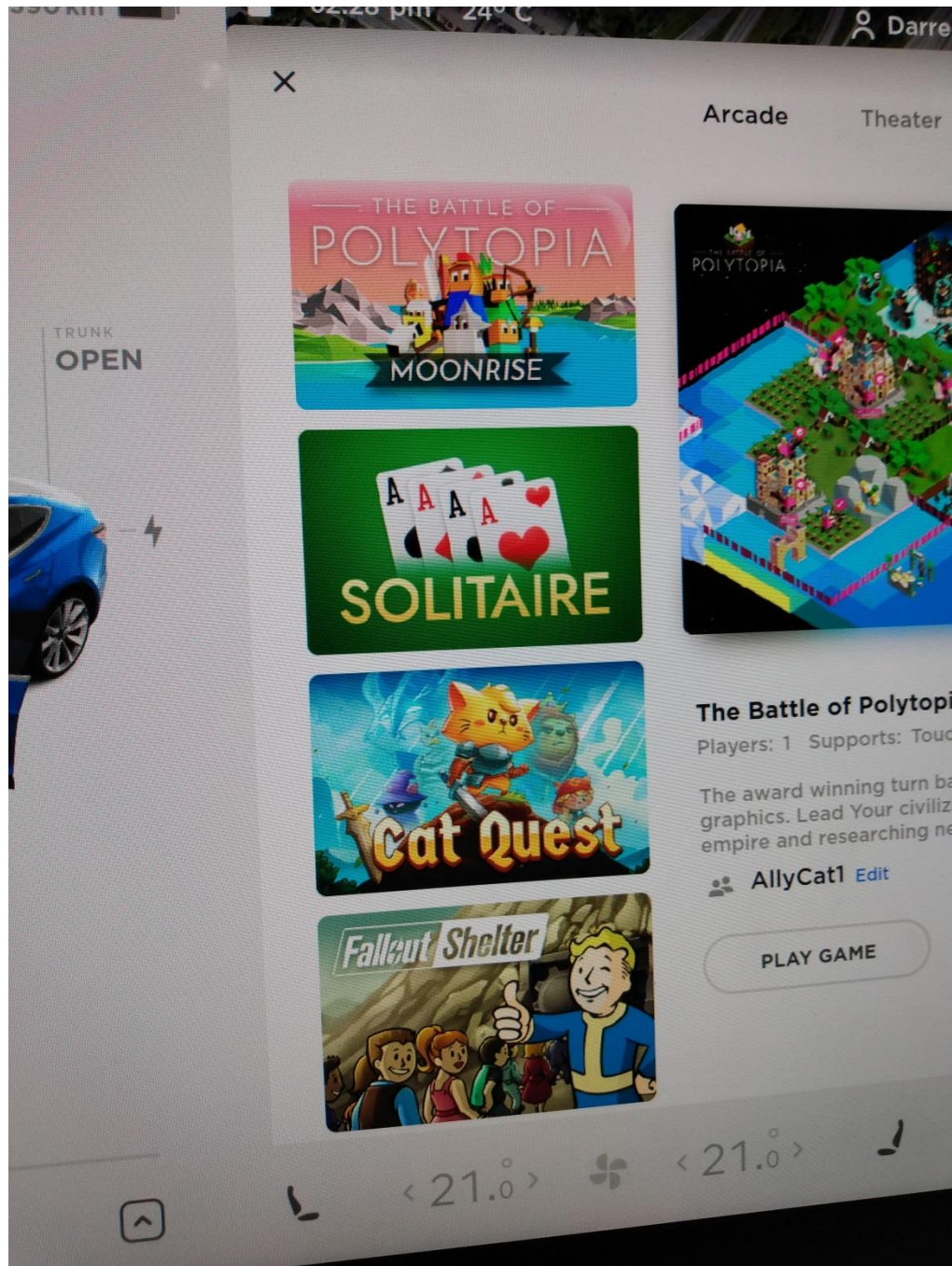
Faster DC charging

Charging speed improvements:

- ▶ From 105kw to 120kw in 2018
- ▶ Then to 150kw in early 2019 (the whole network was updated to 150kw virtually overnight)
- ▶ Now 250kw at V3 superchargers (late 2019)
- ▶ 100km range boost possible in 5 minutes (at V3 station and with low battery, 12 minutes to 50%+)
- ▶ Adding 100km took 5 hours in my LEAF (@3.3kw)

Games and music

- ▶ Toy box now has Trax 2 (music keyboard) and Rainbow road.
- ▶ Games arcade. 18 in total. Most can be played with touchscreen, a few need a game controller.
- ▶ Classic games (Chess, Backgammon, Solitaire, 2048, Gravitar, Tempest, Millipede, Missile Command, Luner Lander, Super Breakout, Centipede, Asteroids)
- ▶ Modern games (Battle of Polytopia, Cat Quest, Fallout Shelter, Stardew Valley, Beach Buggy Racing 2, Cuphead)
- ▶ Great to have if you're waiting to pick someone up!



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Theatre added

Theatre came with Tesla Tutorials

New additions:

- ▶ Netflix
- ▶ YouTube
- ▶ Twitch

Improved Dash Cam

Dash cam has 4 cameras recording in HD (started with 3)

- ▶ Save 'on honk' option was added
- ▶ Also save 'last 10 minutes' option
- ▶ Loops over the past hour, resets after each drive, to avoid filling USB drive

New modes!

- ▶ Dog mode (keeps pets cool)
- ▶ Camp mode (keeps people cool)
- ▶ Joe mode (reduces volume of chimes for passengers)
- ▶ Sentry mode (records incidents, issues warnings, alarms)
- ▶ A 'red dot' on video replay shows when activated (for quick review of incident)
- ▶ Backup camera now has option for three cameras (includes 2 side reverse cameras)
- ▶ Windows can be fully closed with app (also opened enough to vent)

What could be improved

- ▶ Windshield wipers only have 2 intermittent and two fast modes (plus automatic)
- ▶ Would be better with 3 or 4 of each.
- ▶ Has a button (end of stalk) to activate at anytime though (also activates WW fluid)
- ▶ For my driving, 95%+ of the time it's not raining

Performance upgrades

Four separate performance upgrades over time:

- ▶ 364hp upgraded to 497hp (original model 3 performance was 450hp, with times in brackets on right side)
- ▶ 0 - 60mph (96.6kmh) in 3.5 seconds, was 4.6 (3.5)
- ▶ 0 - 100mph (160kmh) in 8.4 seconds, was 9.5 (8.9)
- ▶ Quarter mile in 11.8 seconds, was 12.6 (12.1)
- ▶ Now has faster acceleration than original model 3 performance, faster than BMW M3, BMW i8, etc.

Conclusion

Since 2018, the model 3 has improved significantly:

- ▶ Much, MUCH faster now, and with many new and improved features, is more fun to drive!
- ▶ Felt like a new car after last acceleration boost upgrade (adding another 50hp)
- ▶ Running the current software of 2021 model cars!
- ▶ Deprecation is lower than other cars

Tesla Model 3 Owners Are the Happiest Car Owners,
According to Consumer Reports (May 11, 2021)

Past Events

Reaching outside the bubble!

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VIRTUAL GREEN DRINKS MAY 13, 2021 ENVIROCENTRE TAKEOVER



Jennifer Stelzer
Community Sustainability
Programs Director



Evan Harvey,
Ottawa Green Business
Coordinator



Melanie Johnston
Home Energy & Retrofit Services
Director

Join Us
On Zoom

Hosted by



RSVP: bit.ly/GDOTTMay2021

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

envirocentre
Bringing environmental change to life



Upcoming Events

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Upcoming Events
- regular

June 28 - Next EVCO meeting

VIRTUAL GREEN DRINKS JUNE 10, 2021: THE FUTURE OF PV & DIY SOLAR



Roderick Costain
Founder
Roco Industries



Kelvin Hodges
Founder
Bobolink Solar



Hosted by



Now Presented Online via Zoom
Please Register Via Eventbrite
To Receive a Link to Join
Space is Limited

RSVP: bit.ly/GDOTTJun2021
@GreenDrinksOTT
Facebook.com/OttawaGreenDrinks
Ottawa-Renewable-Green-Energy-Meetup



Upcoming Events

- ▶ **EcoHack-a-City - Accelerating the Transition to Electric Vehicles**
- ▶ June 3rd - 7:00-8:30 - Earth Day Canada



[Webinar Registration -
https://us02web.zoom.us/webinar/register/WN_cjs-
nWDPSCqkXC0jGU3_tAoom](https://us02web.zoom.us/webinar/register/WN_cjs-nWDPSCqkXC0jGU3_tAoom)

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Movin'On Summit

► <https://summit.movinonconnect.com/> - \$200

JUNE 1 TO 4, 2021

MONTREAL - PARIS - SINGAPORE

THE WORLD SUMMIT ON SUSTAINABLE MOBILITY
Reducing environmental impacts and meeting societal needs

Movin'On Summit 2021 will be a reinvented 4-day phygital experience, broadcast worldwide, to inspire, connect and engage mobility stakeholders in collective action on concrete solutions for more mobility with less impact.

3 VENUES
MONTREAL
PARIS
SINGAPORE

3 FORMATS
LIVE TV SETS
SATELLITES
CAPSULES

3 BROADCASTING MODES
ONSITE
DIGITAL LIVE
VIDEO ON DEMAND

Electric Veh



6-PART
PANEL DISCUSSION
SERIES

Building a Canadian vision for an EV battery value chain

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ELECTRIC
AUTONOMY
CANADA

Starting June 1, *Electric Autonomy Canada* will host six, weekly panel discussions with leaders from the Canadian battery and automotive sectors to explore the need and road map for establishing Canada's national electric vehicle battery supply chain.

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EPISODE

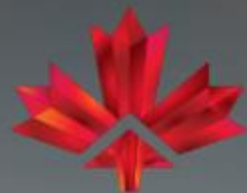
**Building a
Canadian
vision for an
EV battery
value chain**

ELECTRIC
AUTONOMY
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National Overview

JUNE 1
1PM EDT
10AM PDT

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Ben Sharpe
ICCT



Sarah Houde
Propulsion
Québec



Daniel Breton
EMC



Josh Nye
RBC
Economics



Nino Di Cara
Electric
Autonomy
(Moderator)

DecarbConnect - North America

- ▶ Spectator pass for \$79



The screenshot shows the top navigation bar of the DecarbConnect website. The logo 'decarb connect' is in the top left, with 'decarb' in yellow and 'connect' in white. The navigation menu includes 'Home', 'Community', 'Podcast & Blog', 'Events' (which is highlighted with a yellow underline), and 'Sp'. Below the navigation bar, there are two sub-headers: 'Decarb Connect North America' and 'Digital F'. The main banner features the 'decarb connect' logo in teal and white, with 'north america' in teal below it. The dates '15-17 JUNE 2021' are displayed in white. The main headline, 'Identifying competitive industrial decarbonization business models', is in large white text. The background of the banner is a dark teal image of industrial cooling towers.

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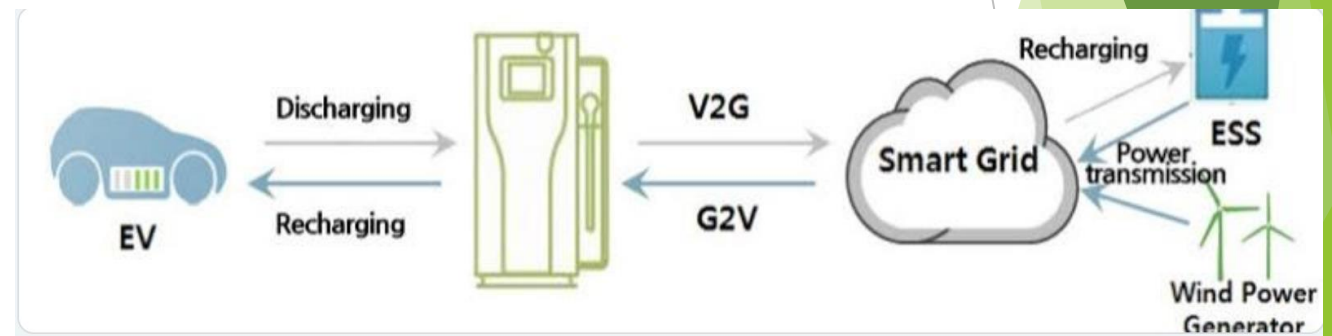


Presentations

- ▶ 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

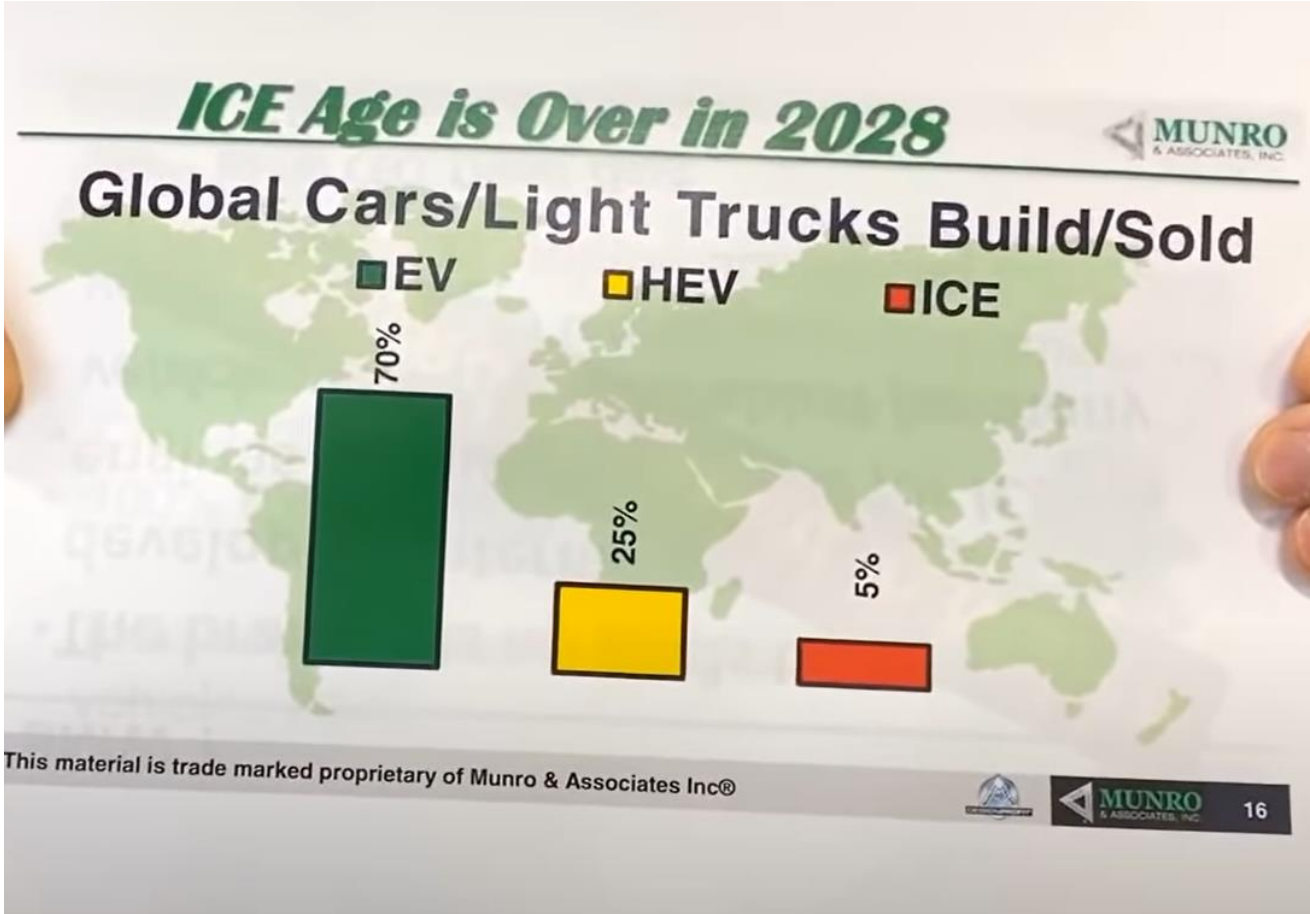
Roundtable - Ottawa Facilities, etc.

- ▶ City of Ottawa - ZEV Advocacy
- ▶ Blackburn Arena
 - ▶ \$5M project
 - ▶ There will be one charger
- ▶ [Survey for EV Owners for V2G Technology \(google.com\)](https://www.google.com)



Survey for EV Owners for V2G Technology

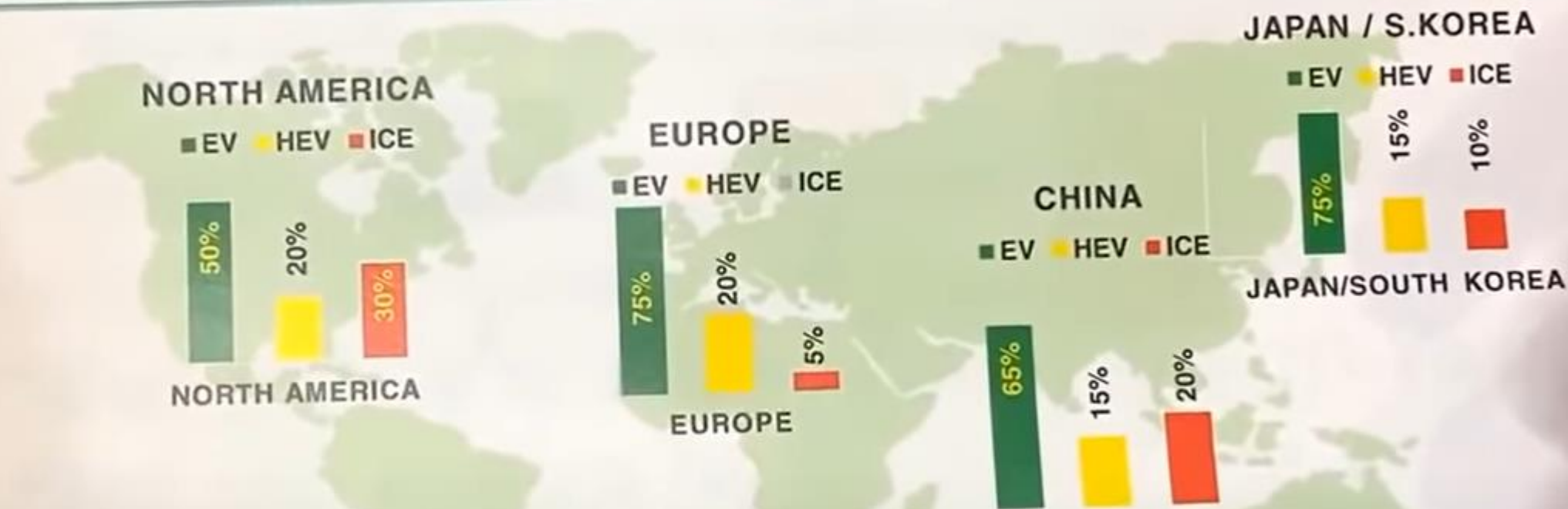
Your response has been recorded.



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ICE Age is Over in 2028



Global Cars/Light Trucks Build/Sold

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ICE Age is Over in 2028



Global Heavy Trucks Build/Sold



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Roundtable!!

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Electric Vehicle Society