EV Strategies

Ian Graham

-owner and manager of Small Dog Studio, an off the grid recording studio
-Professor at Conestoga College and Wilfrid Laurier University teaching audio production
-one of the founders of WREVA (Waterloo Regional Electric Vehicle Association)
-Involved in renewable energy since the late 90s

Two 10 KW Solar arrays
Off Grid Cabin

GVAF 696

EVERY ONE OF THESE TECHNOLOGIES… HAS EVOLVED AND CHANGED!

EVERY ONE OF THESE TECHNOLOGIES… HAS EVOLVED AND CHANGED!

Tony Seba: Clean Disruption - Energy & Transportation

ALL Energy Has A Consequence/Footprint

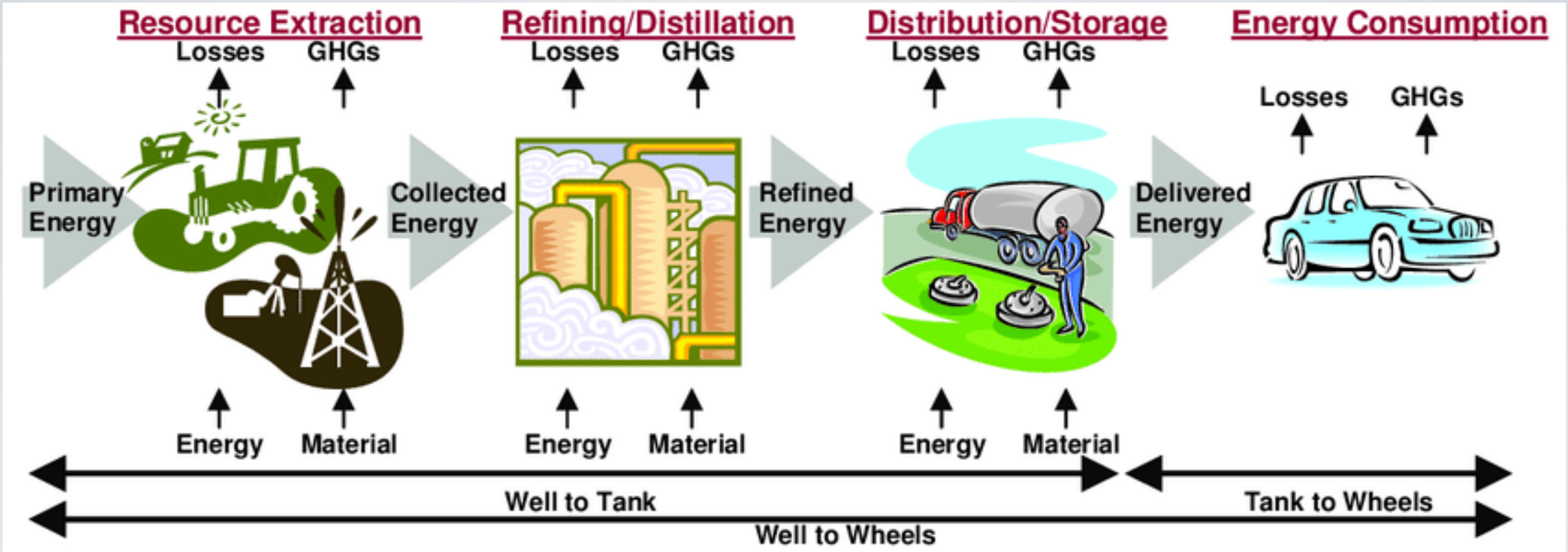
-mining needed to get materials-batteries, solar panels or oil

-manufacturing/refining/transportation takes energy

-all products have a life cycle or loop…

one positive, one negative

The Negative "Cycle" Of Oil



Chains the consumer to a pump

Health care strained in the BILLIONS of $$!

Asthma, emphysema, and now linked to dementia

The Negative “Cycle” Of Oil

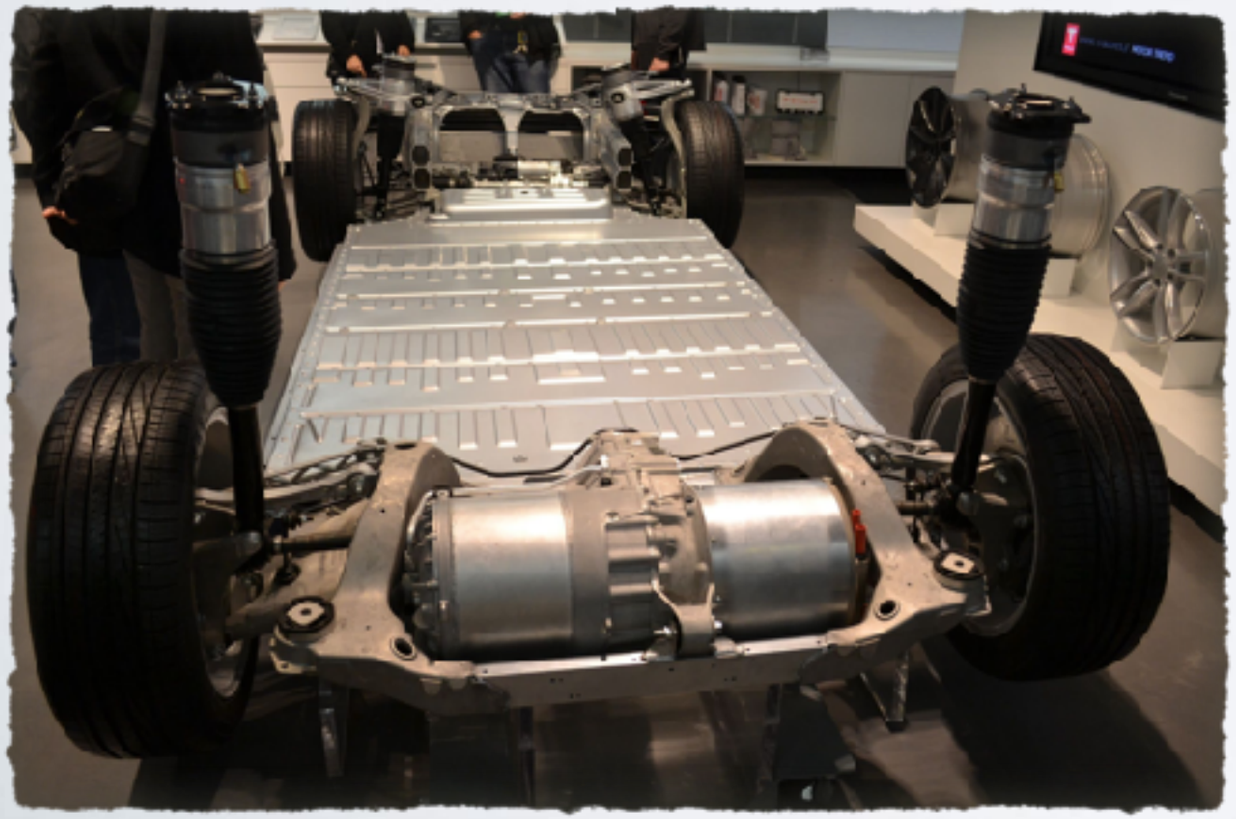
-The growing problem of oil and gas companies not paying property taxes or landowners
-Abandoned oil wells (hello Geothermal potential!)
-Health care costs (gas transportation sector alone strains health care in the BILLIONS with asthma, emphysema, and now linked to dementia-“Something In The Air”-CBC Documentary
-climate crisis costs-food,insurance, land, education climate refugees, species extinction, people’s lives

IEA Report Finds Canadians Are World's Biggest Gas Guzzlers

Huffington Post

EV ELECTRIC MOTOR

-Small/Lightweight
-Around 18 moving parts
-90% efficiency
-simple!
-TCO is CHEAP!
-FUN



INTERNAL COMBUSTION ENGINE (ICE)

-Heavy/takes up space
-3000+ moving parts
-15-25% efficiency
-needs transmission, muffler, oil filters, catalytic converter

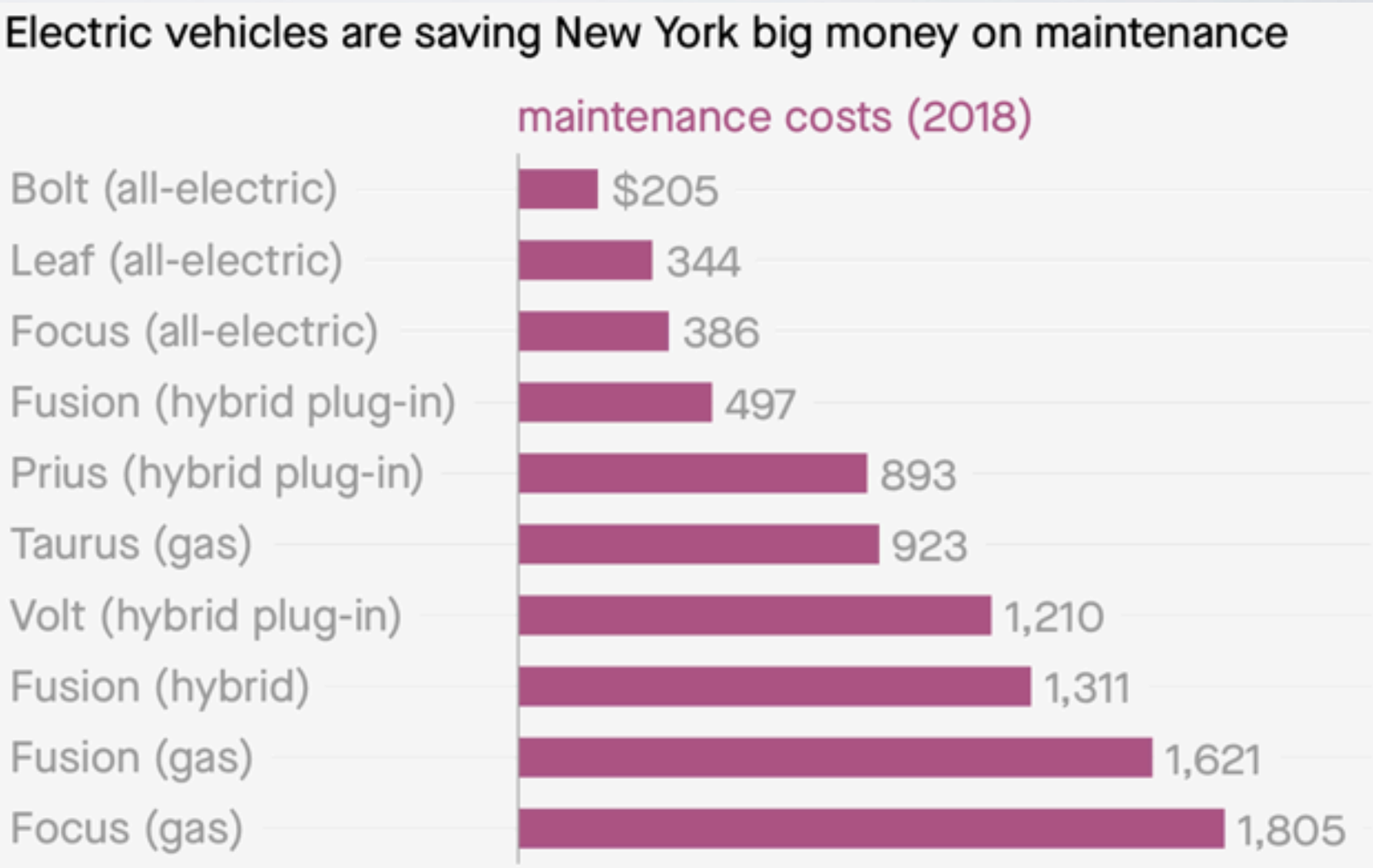
EV MYTHS AND CONCERNS

EV MYTHS AND CONCERNS

Expensive

-Battery costs have dropped every year
-Prices start as low as $27K and average at $35-45K
-Incentives
-A $60K Tesla Model 3 SR+ is the same cost as a $30K Toyota Camry/ Honda Accord when TCO is calculated
-Windshield washer fluid/tire rotations are cheap maintenance
-A study of owning an EV for 10 years showed that you could buy a NEW EV just from the savings.

NEW YORK CITY SAYS ELECTRIC CARS ARE NOW THE CHEAPEST OPTION FOR ITS FLEET



EV MYTHS AND CONCERNS

Charging Is Expensive

ELECTRIC VEHICLE CHARGING

-driving electric is 1/5 to 1/10 the cost of gas

-On average about $7-9 for 500 KMs with off peak charging

-Road trip charging is anywhere from FREE to $20

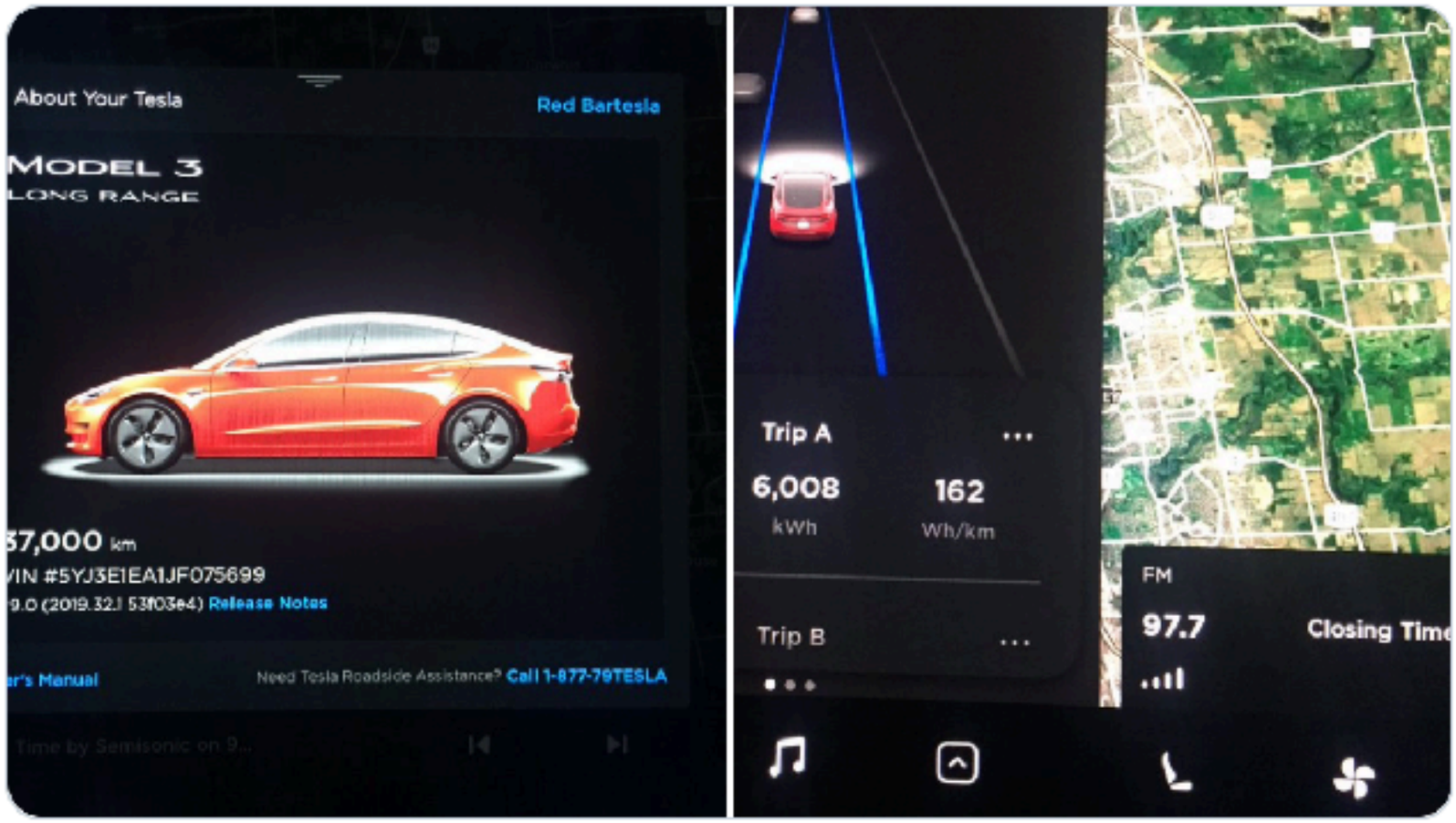
EV VS GAS COSTS AS PIZZA

A gas car burns fuel at 15-25% efficient…
$7-8 of $10 is gone in heat and friction
So…buy a pizza… and throw out 3/4 of it.
Now include oil changes, brakes, muffler, transmission, etc…
that pepperoni is now gone! Cost Anxiety!

One Year Of Travel Costs

Red Bartesla
@redbartesla

One year anniversary today with "Red Bartesla"! Serious fun, crazy acceleration, and love driving it whenever I can! For one year with off peak electricity at $0.06/KW times 6008KWs, car cost to charge is $365. But I also do free charging. Autopilot is used 90% of my long travels



EV MYTHS AND CONCERNS

EVs take too long to charge.
I can fill up my gas car in 5 minutes.

Perspective is needed here!

https://www.businessinsider.com/heres-how-long-you-have-to-work-to-just-to-fill-up-your-cars-gas-tank-2012-2

Average yearly time to pump gas added up is hours!

Average cost of tank of gas is $60-80… so at $25/hour minus deductions, you worked around 4-6 hours for that tank.

Plug in at home… seconds

DC Fast Chargers take 30 minutes to 80% of an EV charge

This is only improving! Tesla V3 chargers are doing 3-400 KMs in around 10 minutes.

EV MYTHS AND CONCERNS

I can't go far in an EV… it's a "city car"

Average commute is around 45-80KMs/day
Tesla Social completed 18,857 miles on a 2 month North American road trip!

Bolt Across Canada.com
TeslaXCanada.com

Petro Canada/Tesla are doing EV charging stations right across Canada!

Forget Range Anxiety!!

Red Bartesla @redbartesla · Sep 18

I thought those gas guys didn't have "range anxiety"?

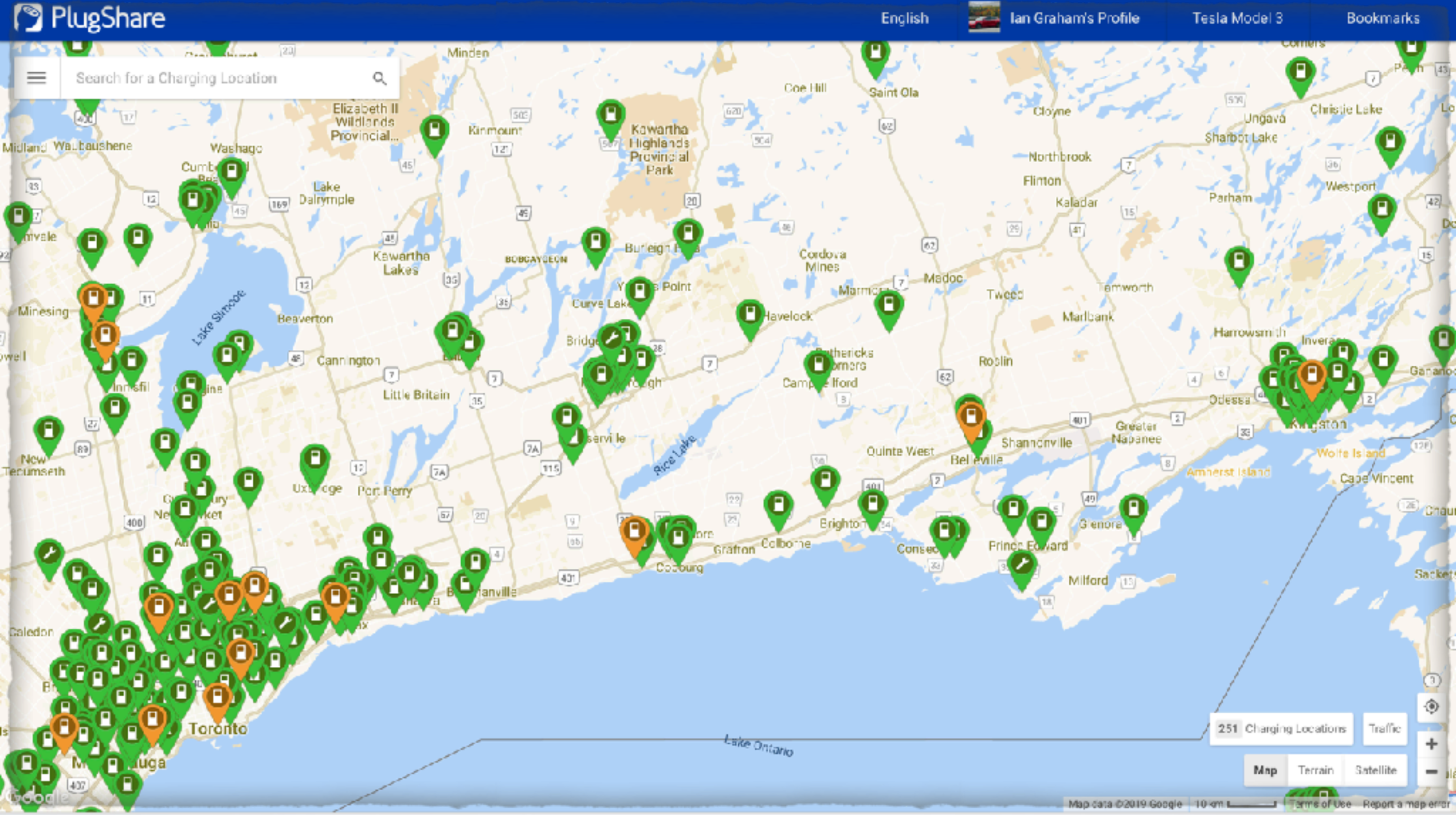
Kitchener To San Diego and back!

Tesla SoCal Roadtrip Oct 10 - 21			
Oct-10	SC	Comber, ON	$8.50
	SC	Maumee, OH	$5.71
	SC	Indianapolis, IN	$8.28
	SC	Effingham, IL	$11.41
	SC	Rolla, MO	$7.26
	SC	Springfield, MO	$3.15
Oct-11	SC	Joplin, MO	$3.85
	SC	Catoosa, OK	$5.34
	SC	Weatherford, OK	$6.60
	SC	Shamrock, TX	$5.17
	SC	Amarillo, TX	$4.12
	SC	Santa Rosa, TX	$7.68
Oct-12	SC	Santa Rosa, TX	$2.28
	SC	Albuquerque, NM	$7.93
	SC	Gallup, NM	$7.67
	SC	Flagstaff, AZ	$6.85
	SC	Buckeye, AZ	$5.63
Oct 13	SC	Quartzsite, AZ	$5.78
	SC	Joshua Tree, CA	$15.21
	SC	San Diego - Camino Del Sur, CA	$6.04
Oct-14	SC	Carlsbad, CA	$5.04
	SC	San Clemente, CA	$12.10
Oct-15	SC	Hawethorne, CA	$3.25
	SC	Thousand Oaks, CA	$12.76
	SC	San Luis Obispo, CA	$12.60
Oct-16	SC	Big Sur, CA	$0.00
	SC	Monterey, CA	$7.56
	SC	Fremont, CA	$10.88
Oct-17	SC	Hayward, CA	$5.89
	SC	Rocklin, CA	$14.26
Oct-18	SC	Lovelock, NV	$12.52
	SC	Elko, NV	$8.72
	SC	Tooele, UT	$15.12
	SC	Evanston, WY	$2.40
	SC	Rock Springs, WY	$8.61
Oct-19	SC	Laramie, WY	$6.72
	SC	Ogallala, NE	$7.70
	SC	Grand Island, NE	$6.75
	SC	Council Bluffs, IA	$5.61
Oct-20	SC	Altoone, IA	$7.20
	SC	Davenport, IA	$6.21
	SC	Country Club Hills, IL	$12.42
	SC	St. Joseph, MI	$5.60
	SC	Marshall, MI	$2.70
	SC	Port Huron, MI	$4.42
			$331.69

EV MYTHS AND CONCERNS

Where Do I Charge?

-where do you sleep the majority of the time?
-70-90% of a person's charging needs are done right at home!
Road trips can be planned with apps
plugshare.com
abetterrouteplanner.com



ELECTRIC VEHICLE CHARGING

Apps like Plug Share make trip planning easy

The charging network is growing right across Canada

EV MYTHS AND CONCERNS

EV Batteries need to be replaced and are bad for the environment

-8 year warranty

-There are now EVs with One Million MILES and around 8-9% battery degradation

-EV batteries aren't just thrown into a landfill

-EV batteries are recyclable in many ways from use in renewable energy to data centres. The whole battery pack isn't just thrown away!

NATIONAL DRIVE ELECTRIC WEEK

WREVA held the largest event in Canada for the last 3 years with 103 EVs and over 400+attendees just this year!

TRUCKS

Nov 21-Tesla "Cyber Truck" revealed

Starts at $39,900 US

300-500 Mile range depending on configuration

Tows up to 14,000 lbs

Rivian

TRUCKS

ELECTRIC PLANES

ELECTRIC TRACTOR

ELECTRIC EXCAVATOR

THANK YOU!

Twitter @REDBARTESLA