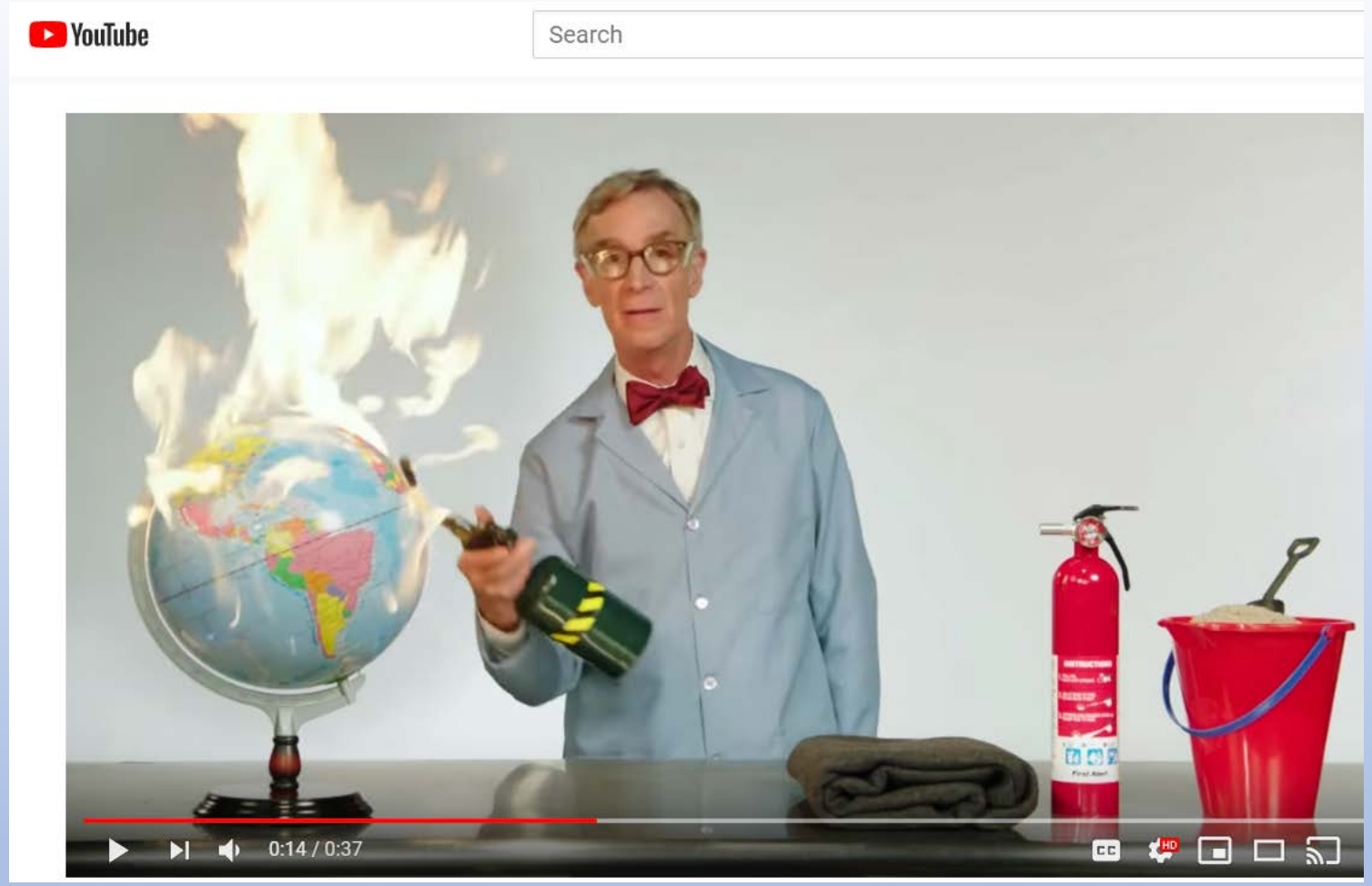
Electrifying Transportation

Bill Nye explains climate change with John Oliver



"The planet's on __ fire. You're not children anymore.

...you're adults now, and this is an actual crisis.

It's time to get to work and stop messing around."

https://time.com/5587252/john-oliver-green-new-deal-climate-change-bill-nye-last-week-tonight/

New York State – Top 3 Greenhouse Gas Sources

Short review of what we heard this morning

Electricity

21%

+

Transportation

36%

&

HEATING & COOLING

31%

NYS - Top 3 GHG Sources – High School Formula

Electricity (E)

+

Transportation (T)

&

HEATING & COOLING (HC)

NYS - Top 3 GHG Sources – High School Formula

Electricity

plus

Transportation,

Heating & Cooling

E

+

~~THC~~

Whoops…

"THC"

is already

taken

☺

NYS - Top 3 GHG Sources – High School Formula - *Revised*

Electricity (E)

+

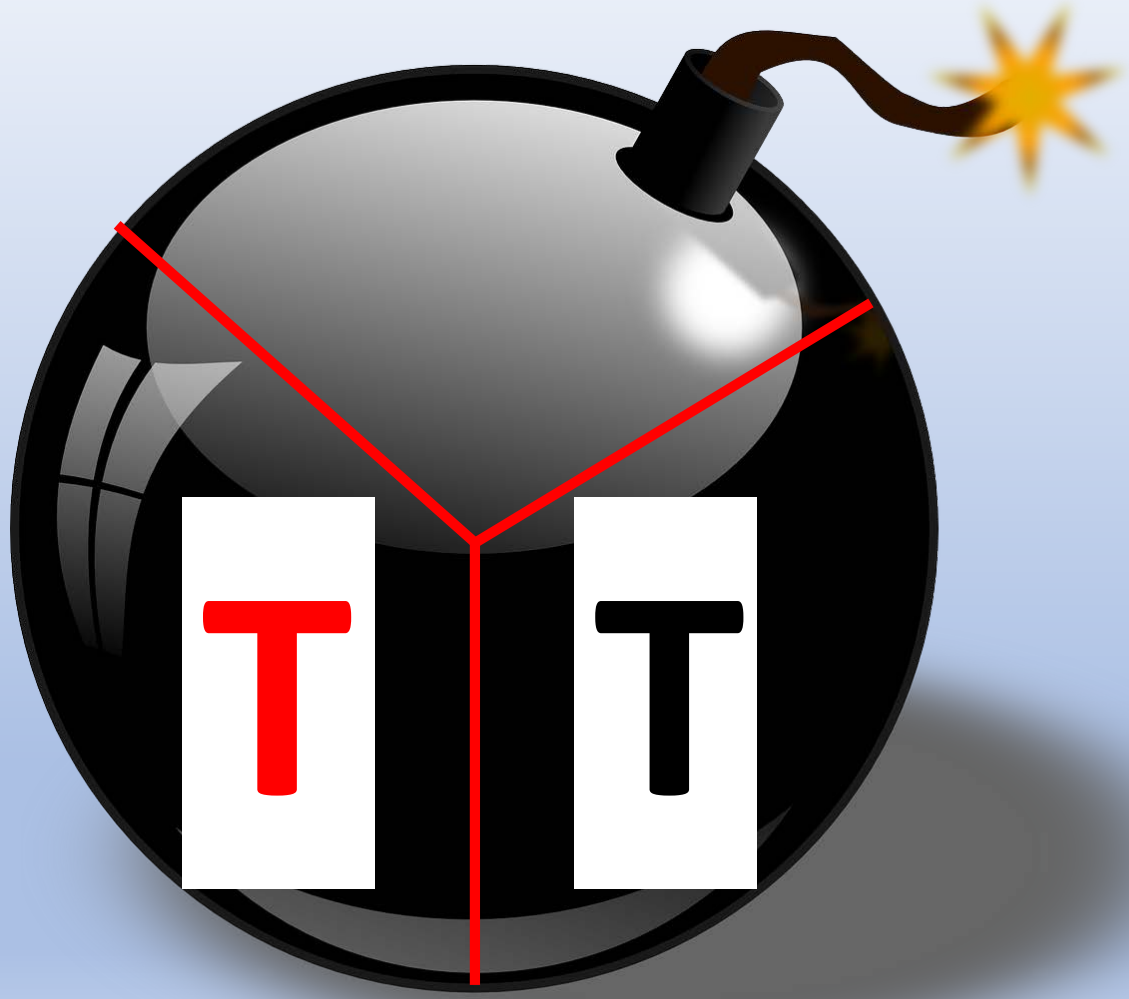
Transportation (T)

&

Thermal (T)

Heating & Cooling = THERMAL

2/3s of the Carbon Bomb is from T&T



Electricity

+

T & T

Transportation & Thermal

Electric Vehicle (EV) EXPONENTIAL GROWTH

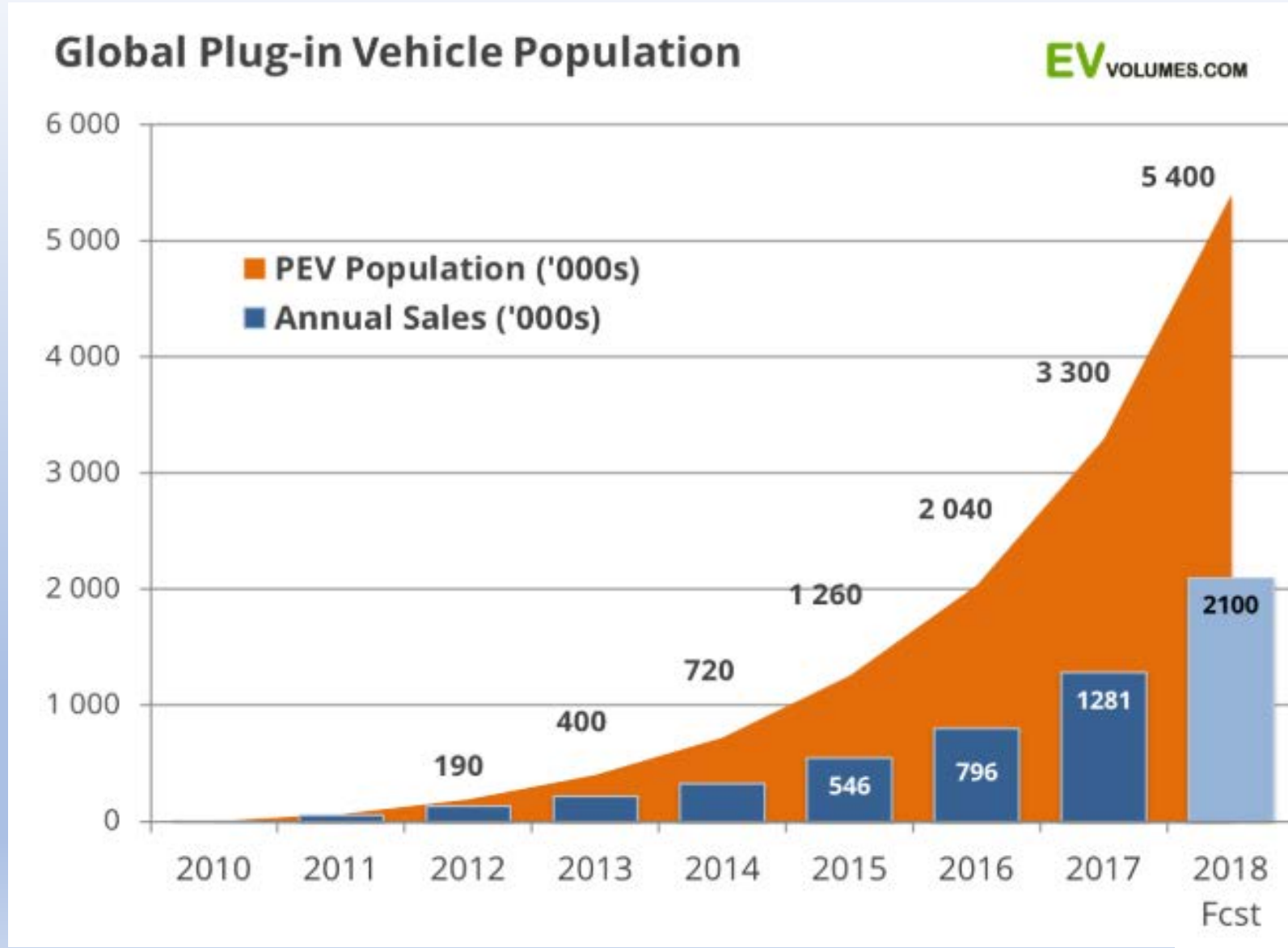
earthkind energy

It took the world
20+ years to reach
the 1st million EVs

The 2nd Million: **18 months**

The 3rd Million: **8 Months**

Today: **5.6 Million EVS!**



Light duty vehicles (cars)

- 96% of the vehicles
- 82% of transportation's carbon

earthkind energy

Average

U.S. Trips

98%

of all US trips are

<50 miles

Most Plug-In Electric Vehicles: 100+ miles on a full charge

You don’t need a public charging station - just plug into a regular electric outlet overnight for 98% of your needs

40+ EV models with NYS Incentives & Fed. Tax Credit

https://www.nyserda.ny.gov/All-Programs/Programs/Drive-Clean-Rebate/How-it-Works

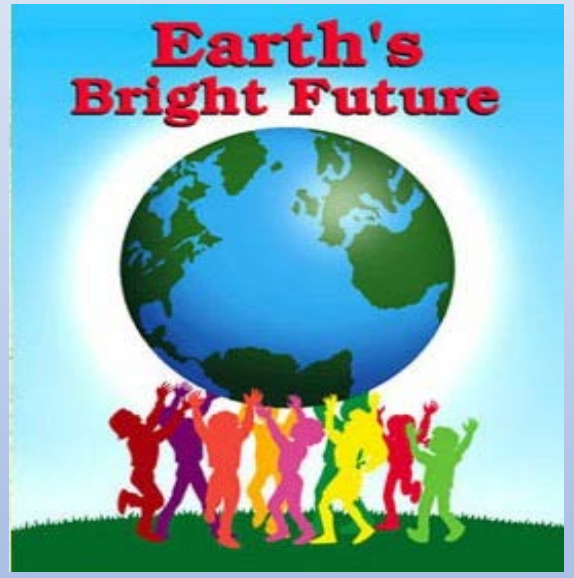
Make and Model	All-Electric Range (miles)	Base MSRP	Fuel Economy (MPGe)	Federal Tax Credit	NY Rebate	Type
Audi A3 e-tron	16	$38,900	83	$4,502	$500	Plug-In Hybrid Electric Vehicle
BMW 330e iPerformance	14	$44,100	71	$4,001	$500	Plug-In Hybrid Electric Vehicle
BMW 530e	16	$53,400	72	$4,668	$500	Plug-In Hybrid Electric Vehicle
BMW 530e XDrive	14	$55,700	67	$4,668	$500	Plug-In Hybrid Electric Vehicle
BMW 740e XDrive	14	$91,250	64	$4,668	$500	Plug-In Hybrid Electric Vehicle
BMW i3 2016-18	81-114	$42,400	112-124	$7,500	$1,700	Battery Electric Vehicle
BMW i3 2019	153	$44,500	113	$7,500	$2,000	Battery Electric Vehicle
BMW i3 REx 2016-18	97	$47,450	109-111	$7,500	$1,700	Plug-In Hybrid Electric Vehicle
BMW i3 REx 2019	126	$48,300	100	$7,500	$2,000	Plug-In Hybrid Electric Vehicle
BMW i8	14	$140,700	76	$3,793	$500	Plug-In Hybrid Electric Vehicle
BMW X5 xDrive40e	14	$62,100	56	$4,668	$500	Plug-In Hybrid Electric Vehicle
Cadillac ELR	40	$65,000	85	$7,500	$500	Plug-In Hybrid Electric Vehicle
Cadillac ELR Sport	36	$65,000	80	$7,500	$500	Plug-In Hybrid Electric Vehicle
Chevrolet Bolt	238	$36,620	119	$3,750	$2,000	Battery Electric Vehicle
Chevrolet Volt	53	$33,520	106	$3,750	$1,700	Plug-In Hybrid Electric Vehicle
Chrysler Pacifica	32	$39,995	82	$7,500	$1,100	Plug-In Hybrid Electric Vehicle
Ford C-MAX Energi - 2016	19	$31,770	88	$4,007	$500	Plug-In Hybrid Electric Vehicle
Ford C-MAX Energi - 2017	20	$27,120	95	$4,007	$1,100	Plug-In Hybrid Electric Vehicle
Ford Focus Electric	115	$29,170	105	$7,500	$1,700	Battery Electric Vehicle
Ford Fusion Energi - 2016	19	$33,900	88	$4,007	$500	Plug-In Hybrid Electric Vehicle
Ford Fusion Energi - 2017, 2018, 2019	26	$34,595	103	$4,585	$1,100	Plug-In Hybrid Electric Vehicle
Honda Clarity Plug-in Hybrid	47	$33,400	110	$7,500	$1,700	Plug-In Hybrid Electric Vehicle
Hyundai Kona Electric	258	$36,450	120	$7,500	$2,000	Battery Electric Vehicle
Hyundai Ioniq Electric	124	$29,815	136	$7,500	$2,000	Battery Electric Vehicle
Hyundai Ioniq Plug-in Hybrid	29	$25,350	119	$4,543	$1,100	Plug-In Hybrid Electric Vehicle
Hyundai Sonata Plug-in Hybrid	27	$34,600	99	$4,919	$1,100	Plug-In Hybrid Electric Vehicle
Jaguar I-PACE	234	$69,500	76	$7,500	$500	Battery Electric Vehicle

NYSERDA Drive-Clean-Rebate

Kia Niro	26	$28,200	105	$4,543	$1,100	Plug-In Hybrid Electric Vehicle
Kia Optima Plug-in Hybrid	29	$35,290	103	$4,919	$1,100	Plug-In Hybrid Electric Vehicle
Kia Soul EV	111	$33,950	108	$7,500	$1,700	Battery Electric Vehicle
Mercedes-Benz B250e	87	$39,900	84	$7,500	$1,700	Battery Electric Vehicle
Mercedes-Benz GLE550e	8	66,700	43	$4,085	$500	Plug-In Hybrid Electric Vehicle
Mercedes-Benz S550e	12	$96,600	58	$4,043	$500	Plug-In Hybrid Electric Vehicle
Mercedes-Benz C350e	8	$47,900	51	$3,417	$500	Plug-In Hybrid Electric Vehicle
Mercedes-Benz GLC 350e	9	$50,650	56	$4,460	$500	Plug-In Hybrid Electric Vehicle
MINI Cooper S E Countryman ALL4	12	$36,900	65	$4,001	$500	Plug-In Hybrid Electric Vehicle
Mitsubishi i-MiEV	59	$22,995	112	$7,500	$1,700	Battery Electric Vehicle
Mitsubishi Outlander	22	$35,795	74	$5,836	$1,100	Plug-In Hybrid Electric Vehicle
Nissan LEAF - 2018, 2019	150	$29,990	112	$7,500	$2,000	Battery Electric Vehicle
Porsche Cayenne S E-Hybrid	14	$79,900	47	$6,712	$500	Plug-In Hybrid Electric Vehicle
Porsche Panamera 4 E-Hybrid	16	$99,600	46	$6,670	$500	Plug-In Hybrid Electric Vehicle
Porsche Panamera S E-Hybrid	15	$96,100	51	$4,752	$500	Plug-In Hybrid Electric Vehicle
smart electric fortwo cabriolet	57	$28,100	102	$7,500	$1,700	Battery Electric Vehicle
smart electric fortwo coupe	58	$23,900	108	$7,500	$1,700	Battery Electric Vehicle
Subaru Crosstrek Hybrid	17	$34,995	90	$4,502	$500	Plug-In Hybrid Electric Vehicle
Tesla Model 3 Base	220	$35,000	130	$3,750	$2,000	Battery Electric Vehicle
Tesla Model 3 Mid Range	264	$42,900	123	$3,750	$2,000	Battery Electric Vehicle
Tesla Model 3 Long Range AWD	310	$49,900	116	$3,750	$2,000	Battery Electric Vehicle
Tesla Model 3 Long Range AWD Performance	310	$60,900	116	$3,750	$2,000	Battery Electric Vehicle
Tesla Model S	259-335	$85,000	98-103	$3,750	$500	Battery Electric Vehicle
Tesla Model X	238-295	$88,000	85-93	$3,750	$500	Battery Electric Vehicle
Toyota Prius Prime	25	$27,350	133	$4,502	$1,100	Plug-In Hybrid Electric Vehicle
Volkswagen e-Golf - 2016	83	$28,995	116	$7,500	$1,700	Battery Electric Vehicle
Volkswagen e-Golf - 2017, 2018	125	$31,895	119	$7,500	$2,000	Battery Electric Vehicle
Volvo XC90 T8	17	$66,300	62	$5,169	$500	Plug-In Hybrid Electric Vehicle
Volvo XC60 T8	17	$52,900	58	$5,169	$500	Plug-In Hybrid Electric Vehicle
Volvo S90 T8	21	$63,900	71	$5,169	$500	Plug-In Hybrid Electric Vehicle

"There's a better way to do it: find it" - Thomas Edison

Government POLICY

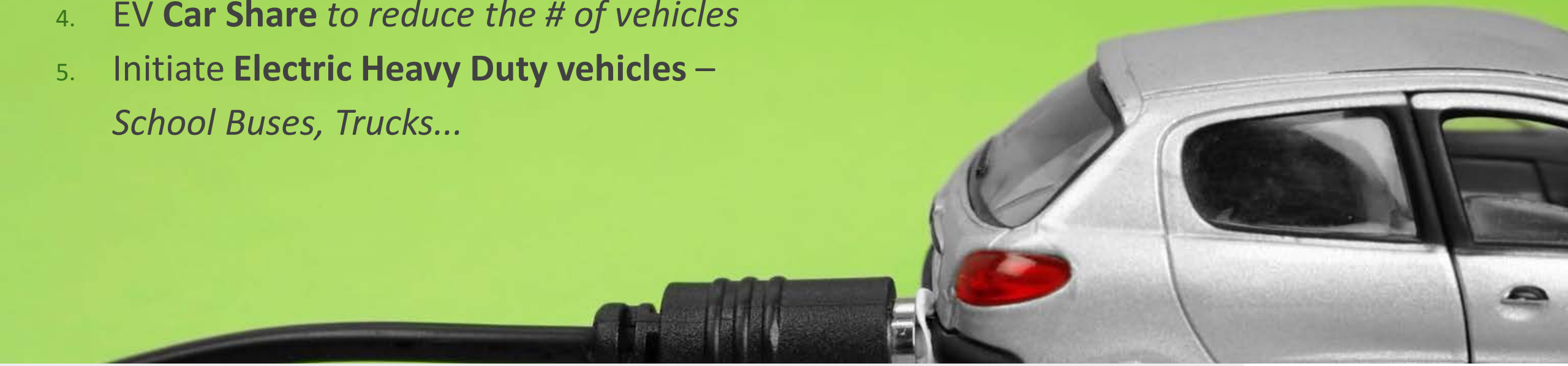


Virtuous Cycle

CLEAN TRANSPORTATION

Goals

1. **EV in every garage**
2. Empower municipalities to **lead by example**
3. Coordinate **Charging Infrastructure** Development
4. EV **Car Share** *to reduce the # of vehicles*
5. Initiate **Electric Heavy Duty vehicles** –
   School Buses, Trucks...



CLEAN TRANSPORTATION

EV In Every Garage

- Majority of Westchester families have 2+ cars and commute <30 miles/day
- 90% / year growth in new EVs in county since program start

If your family has 2 or more cars…

At least 1 should be ELECTRIC

Plug it in at night –
Drive local all day
GAS FREE

CLEAN TRANSPORTATION

EV In Every Garage

—

HS EV Contest

—

Empower Families To Lead

—

SUSTAINABLE WESTCHESTER
Sharing. Saving. Solutions.

NISSAN of NEW ROCHELLE

Westchestergov.com

High School Electric Vehicle Video Contest

High school students across Westchester have the chance to create a fun & educational 2-4 minute video to inform family, friends and fellow peers about electric vehicles.

Students in groups of 2 or more who make a video that best fits the grading criteria will have the opportunity to win one of three sponsored cash prizes!

Registration Link: https://tinyurl.com/y8wt9382

Early Registration by 12/31/18 gains 3 extra points!

Cash Prizes:

1st Place- **$5,000**
2nd Place- **$2,000**
3rd Place- **$1,000**

Honorable Mention Prize:

Tickets to the Formula-E Electric Sports Car Races in Brooklyn on July 13th or 14th

Video Submissions Due by March 28, 2019

For more info: Call Sustainable Westchester 914-242-4725 or email RoneEarthKindEnergy.com

Grading Criteria

Westchester High School Electric Vehicle (EV) Video Contest

CASH Prizes	1st	2nd	3rd
	$ 5,000	$ 2,000	$ 1,000

Additional Prizes: Tickets to Formula-E Electric Sports Car Races in Brooklyn on July 13 or 14

Required Video: Post Video to YouTube; 4 minute Maximum length

	Maximum # Points	Category Maximum # Points
EV EDUCATION (25 Points)		
Compare EV to Gas Vehicles	5	
Economics (financial benefits)	5	
Health Benefits	5	
Global Environmental Benefits	5	
Local Air Pollution Impacts	5	25
EV RIDES (25 Points)		
Student Video includes Ride in an EV (w family, friend...)	5	
Student Video includes Ride in a Westchester Auto Dealer's EV *	5	
Recruit a Local EV Auto Dealer to become a Contest Sponsor *	15	25
VIDEO (25 Points)		
Design Aesthetics	5	
Humor	5	
Creativity	5	
Convincing Arguments for having an EV	10	25
SOCIAL MEDIA (25 Points)		
Social Media - Points for Facebook Views		
10 - 100	5	
101 - 500	5	
501+ *(Goes Viral!)*	10	
Points for Posting on other Video Platforms	5	
(Twitter, Instagram...)		25
TOTAL POSSIBLE POINTS:	100	100

** Sustainable Westchester will help schools recruit and coordinate Dealer Ride & Drives and Dealer Sponsorships*

Register Online: **https://tinyurl.com/yd28z87j**

VIDEO SUBMISSIONS DUE March 28, 2019

CLEAN TRANSPORTATION

Municipalities Lead By Example

Empower municipalities to purchase EVs for their fleets and lead by example

- <20 Municipal Fleet EVs when the program began
- **Quintupled the number of municipal fleet EVs to 100+**
- Monthly Peer-to-Peer Webinar Call with County Government to share information on:
  - EV Grants
  - Charging Infrastructure
  - Contracts
  - Best Practices (*White Plains EV School Buses; New Rochelle Free EV Shuttle*)

CLEAN TRANSPORTATION

EV Charging Infrastructure

Coordinate EV Charging infrastructure development

- Technical support for EV charging station & fleet grants
- GRANTS: ZEV & other NYS
- DC Fast Charger Goal: 1 every 5 square miles

CLEAN TRANSPORTATION

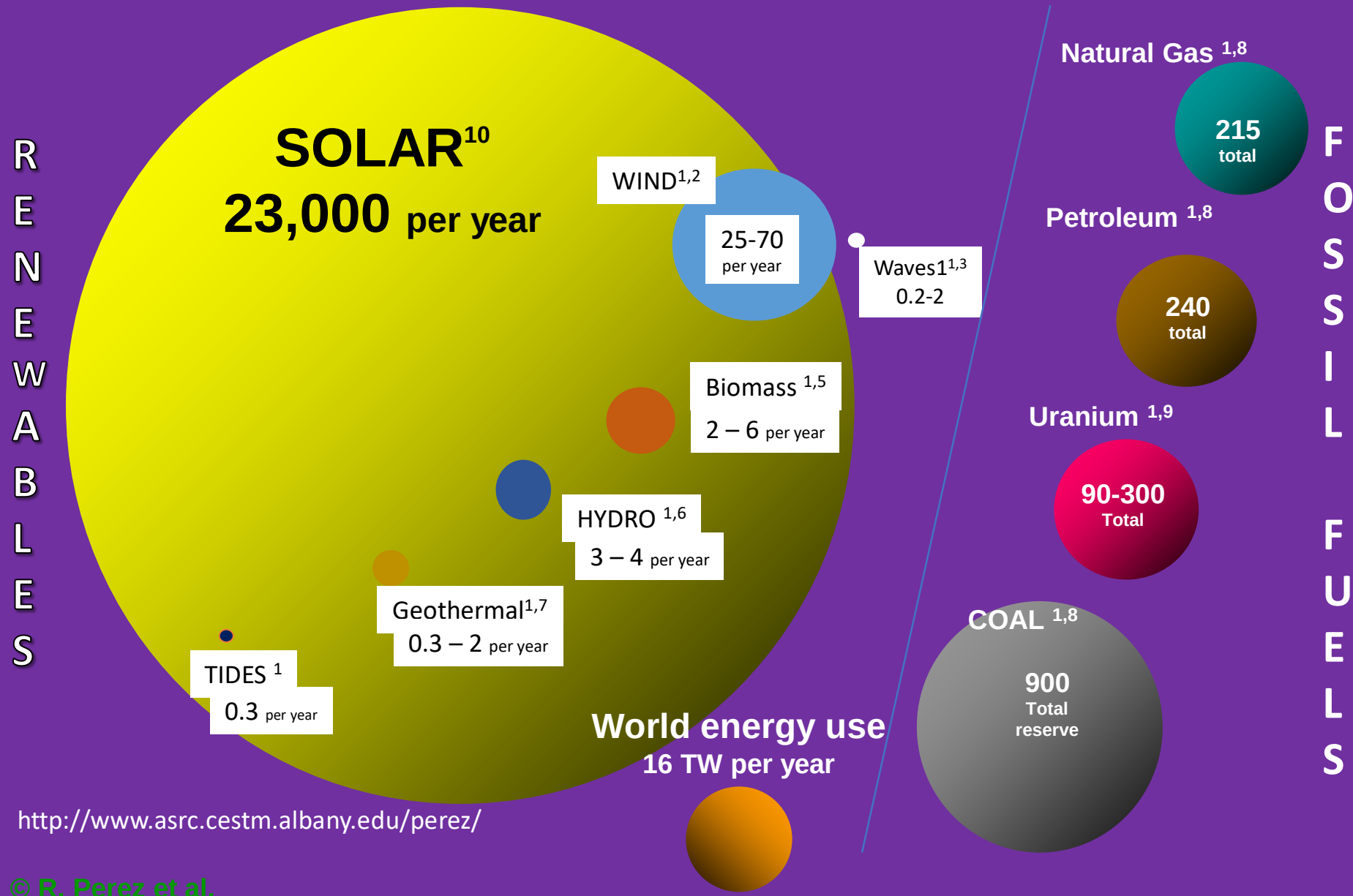
EV Car Share

- Reduce # of vehicles
- Create basis for autonomous vehicles
- Transition vehicles to “shared economy”
- 1st and last mile EV commuting & ride sharing
- Free EV Charging Infrastructure (Level 2 + DC Fast Chargers) in exchange for parking rights
- Free Rides in EV Shuttles (paid by advertisers)

greenspot Smart Mobility

CIRCUIT FORMERLY THE FREE RIDE

Available Energy Sources



Enough Fossil Fuel & Nuclear Power for ~100 years

http://www.asrc.cestm.albany.edu/perez/

The Power of the Sun

The earth receives
more energy
from the sun
in just one hour

than the world uses

in a whole year.

AWESome Power

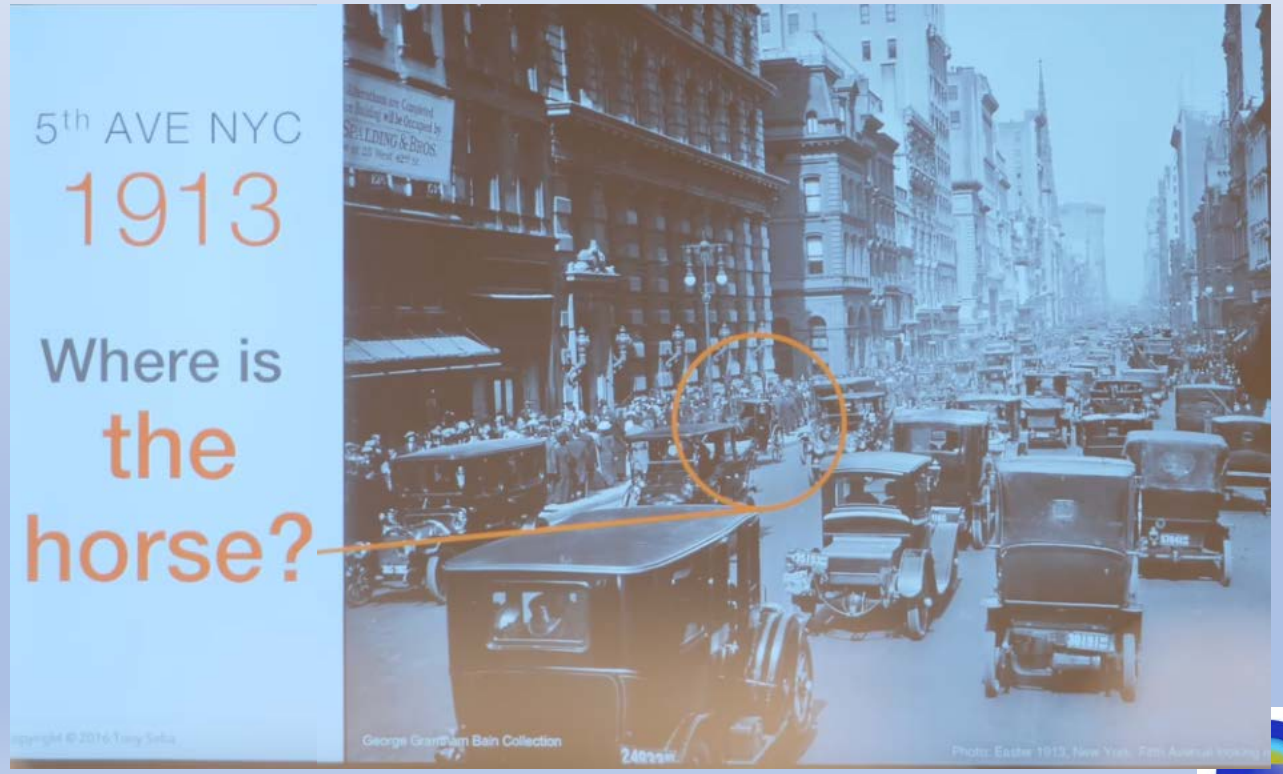
A W E S

How Fast Can We Change?

Tony Seba: YouTube Clean Disruption - Energy & Transportation

NYC 1900 – ALL Horses, 1 Car

NYC 1913 – ALL Cars, 1 Horse



We made the transition from Horse & Buggies to gas cars in 13 years last century -

We can make this transition to EVs NOW!

Every Action We Take…

"You're the master of your own destiny.

The future of humanity will be determined in the next few years.

…if we act now, those actions will pay off.

…Every action we take inspires someone else"

- **Oscar Pak**
  Sleepy Hollow High School
  EV Video Contest Champion

Why Drive Electric?

bit.ly/kickgas

DRIVE ELECTRIC
National Drive Electric Week™

SUNY New Paltz Campus
West Parking Lot
Next to Athletic and Wellness Center

Ron Kamen
EarthKind Energy
917-453-5740
Ron@EarthKindEnergy.com