Drive Electric Hudson Valley

Will Your Next Car Be Electric?

Presented by
Seth Leitman
Program Manager, Drive Electric Hudson Valley
Aka The Green Living Guy©

New York's commitment to Electric Vehicles

New York State committing to over 1 Million EV's on the road by 2025

Drive Electric Hudson Valley campaign is here to make that happen!

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Drive Electric Hudson Valley Team

- Seth Leitman, Program Manager, aka Green Living Guy (.com). Seth ran the NYPA – TH!NK Clean Commute Program that leased 100 electric cars in the NY Metro Area using consumer incentives combined with education;
- Hugo Jule, Outreach Partner, is an experienced bilingual outreach specialist with automotive engineering background;
- David Dell, Ph.D. is an experienced technology commercialization strategist.
- Melissa Everett, Ph.D. is an award-winning author with deep experience in clean energy outreach.

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Our inspiration: NYPA/TH!NK Clean Commute - 2001

Commute from home to train is a "Clean Commute".

NYPA developed the largest retail station car program in North America.

Free electricity at train station.

$199 month to lease an EV for 34 months.

Prime parking space at station.

Seven sites, six counties throughout the NY metropolitan area.

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We're reaching out to YOU as Plugin enthusiasts, commuters, moms, taxis EVERYONE

- community-based workshops
- workshops hosted by dealers
- commuter hub outreach tables and test drives at Park & Rides and train stations
- community events and
- ***consumers who are tired of pouring their dollars into the gas pump.***

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- Lease or purchase
- Special incentives for data sharing
- Build a well educated market AND industry understanding of that market
- Scale up EV use and interest to make the Hudson Valley even more wonderful!

02

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The Car of the Future is Today: Electric cars are stable, performance tested and available

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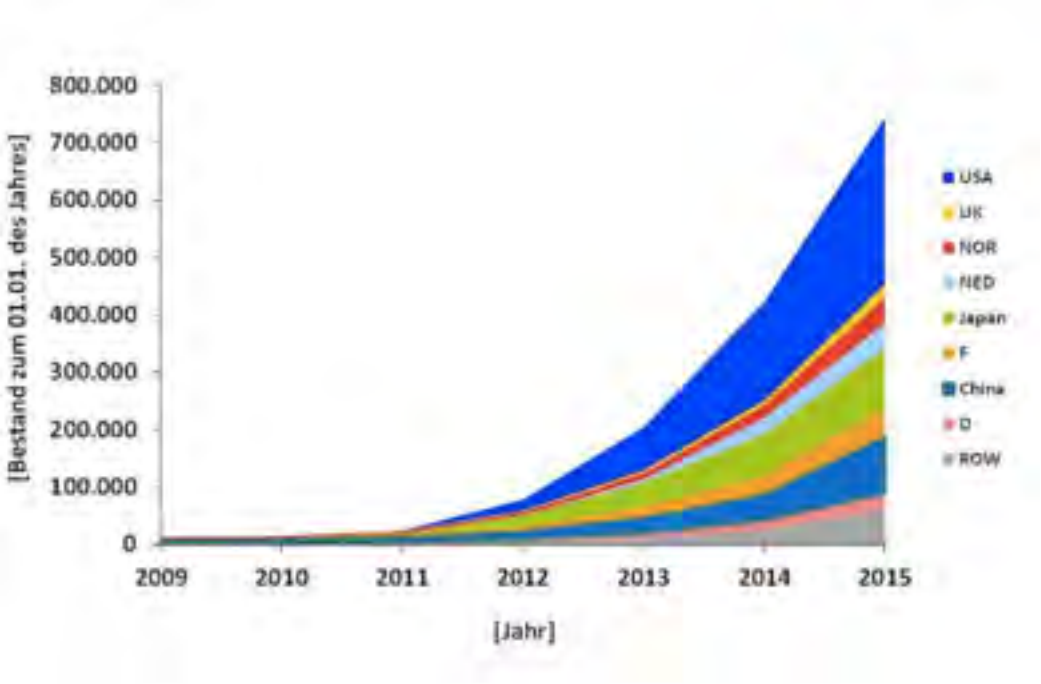
Electric Vehicle Sales Growth



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Source: Gas2org and CleanTechnica

EV Types

1. Hybrid Electric Cars – No Plug, Better MPG and performance

We know people with over 250-300K miles still running with no battery changes

2. Plug-in Hybrid – Plug for range that's all electric 11-50 Miles. After that it's hybrid
3. All Electric – 100 percent torque at zero RPM, NO GAS, NO OIL, BRAKE PADS LAST FOREVER AND GO!

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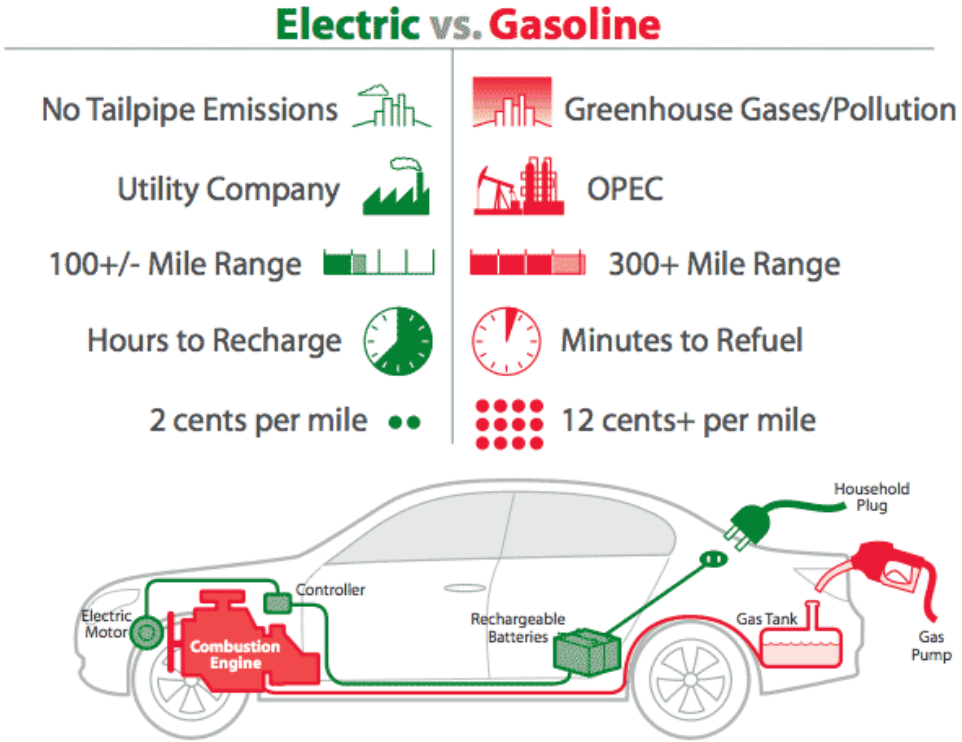
Air Pollution from an Electric Car Versus a Gas Car!



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EV Operating Costs in Hudson Valley

National average fueling cost per kWh is $.12
Biggest Battery Pack is 100 kWk = $12.00
Fast Charging Cost on NYS Thruway $8 Per Charging Event
Higher gas prices in NYS = greater savings

Source: Central Hudson and NYPA

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"Battery prices fell 35 percent last year and are on a trajectory to make unsubsidized electric vehicles as affordable as their gasoline counterparts in the next six years", according to a new analysis of the electric-vehicle market by Bloomberg New Energy Finance (BNEF). "That will be the start of a real mass-market liftoff for electric cars."

By 2040, long-range electric cars will cost less than $22,000. Thirty-five percent of new cars worldwide will have a plug.

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EV Environmental/ Health Benefits

- EV is 97% cleaner
- Use solar then it's pollution free.

20% of energy in gas car is utilized - the rest is waste. For EV, 75% plus is utilized.

Hudson Valley uses hydroelectric at night (really clean charging).

NY HUDSON VALLEY CLEANEST IN NATION!

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Tax Credits for Electric and Plug In Hybrid Electric Cars (plus infrastructure)

- NYS Tax credit for EV recharging equal to the lesser of 50% of the cost up to $5,000
  30% from the Federal Government up to the first 200,000 people
- A electric car that has an EV range of 53 miles or better gets the full $7,500.
- A plugin hybrid can get up to $4,000 between Federal and State. If you're leasing a vehicle, the credit stays with the leasing company, which is the actual owner of the car or truck.
- In most cases, however, the tax credit has been factored into the cost of the lease, so the customer still benefits. Lease programs for the Chevrolet Volt and Nissan Leaf, for instance, include the $7,500 tax credit to lower the lease payments. (Source: Edmunds)

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  30% from the Federal Government up to the first 200,000 people.
- Drive Electric Hudson Valley is offering rebates for municipalities and private coma Lea for EV. Costs incurred by a municipality to install Level 2 networked chargers or DC fast chargers, up to $8,000 per port.
- For the $32,000 per fast charging pedestal, limited to $250,000 per location. A match equal to 20 percent of the rebate request is required. The rebate program will be administered by the New York Department of Environmental Conservation (DEC) through the New York State Grants Gateway. DEC will accept applications from municipalities for rebates beginning Tuesday, September 12 through May 31, 2018.

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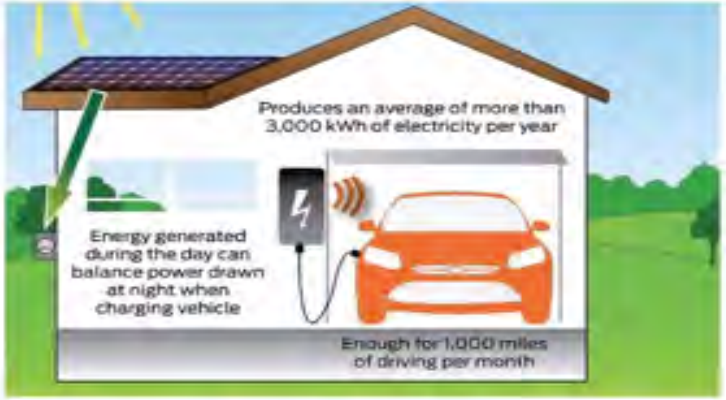
Couple EV and Solar for greater fed/ state tax benefits



DRIVE ELECTRIC HUDSON VALLEY AND SOLARIZE GO TOGETHER FOR THE BEST FEDERAL / STATE TAX BENEFITS

House in Goshen, NY

- $7,500 Tax Credit on the car
- $12,500 for the Solar System
- Plus toll discounts and free

POWER FOR THE CAR ($2,500)

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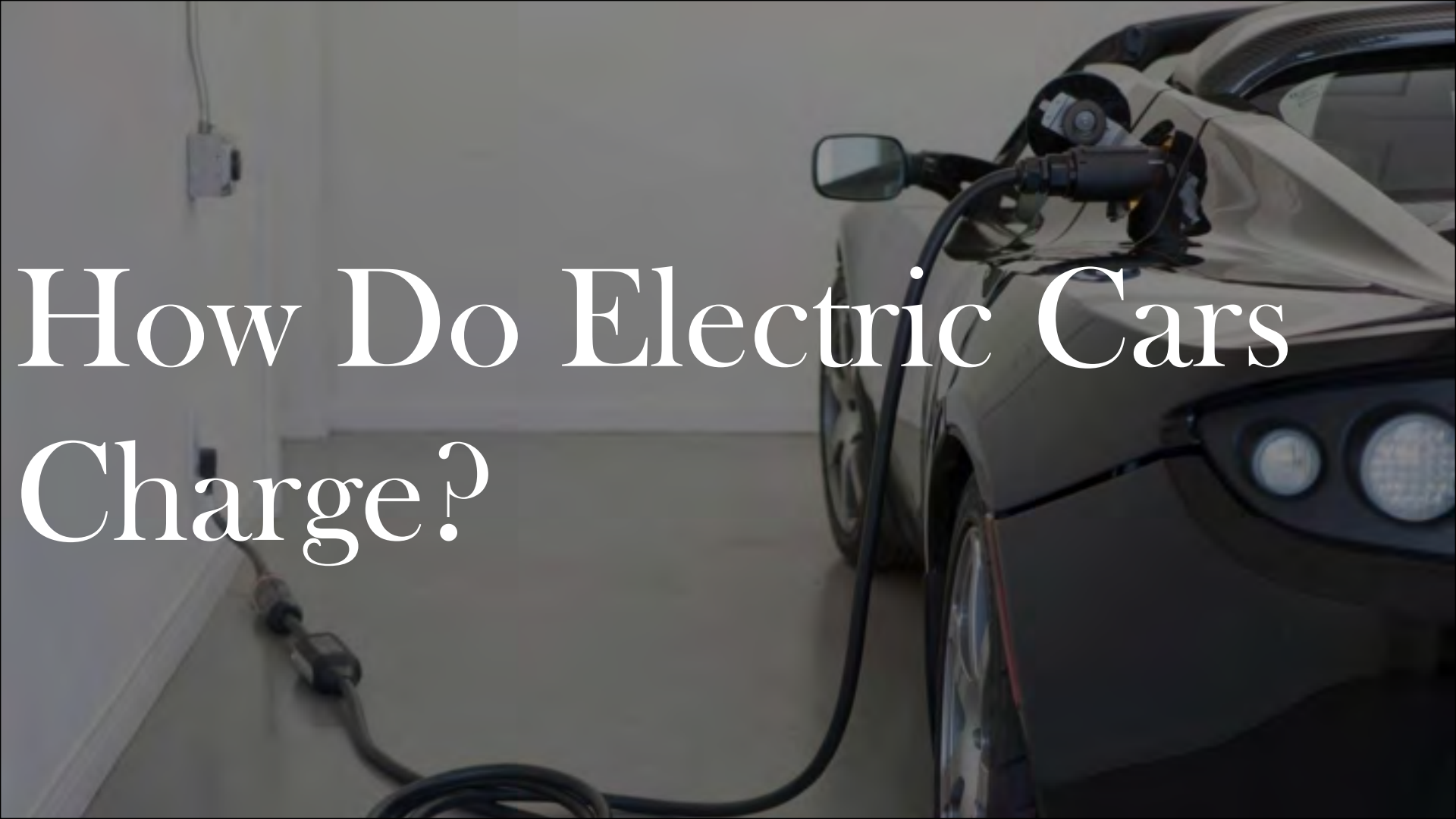
HTTP://WWW.SUSTAINHV.ORG



How Do Electric Cars Charge?

Types of Electric Vehicle Charging

Level 1

Provides charging through a 120 V AC plug and does not require installation of additional charging equipment.

Level 2

Provides charging through a 240 V (for residential) or 208 V (for commercial) plug and requires installation of additional charging equipment.

DC Fast Charge

Provides charging through 480 V AC input and requires highly specialized, high-powered equipment as well as special equipment in the vehicle itself. (Plug-in hybrid electric vehicles typically do not have fast charging capabilities.)
Source: USDOE

How Fast Can Electric Cars Charge?

Charging Levels and Ranges

- **Level 1 = 18-25 hours**
- **Level 2 = 4-6 hours**
- **Level 3 = 25 minutes first 80 percent. Total about 30-45 minutes**

Mitsubishi iMiev

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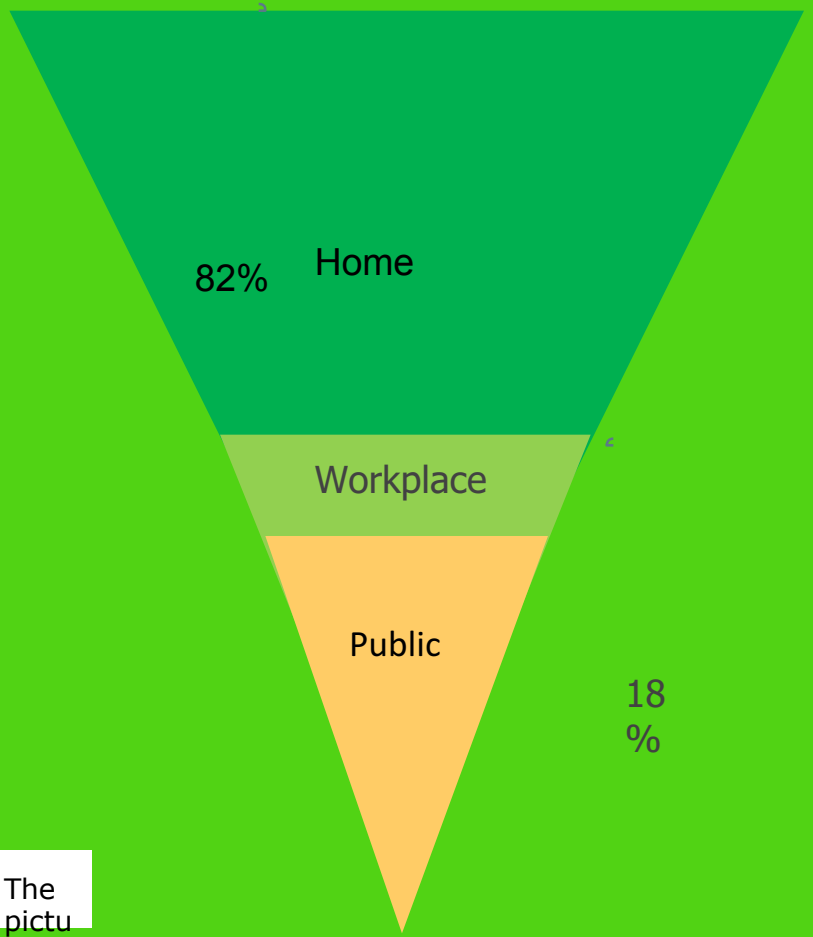

Charging Options

1. 82% of owners charge mainly at home.
2. 18% charge at work or other public locations for hours, extending the car's range.

Source: Bill Williams, Telefonix
www.PowerPostEVSE.com

1. Tesla Motors Charging infrastructure plan is public, fast and growing.
2. The overall infrastructure is growing in the Hudson Valley
3. Drive Electric Hudson Valley bringing at least 300 240 Volt charging stations to the Hudson Valley with EV Connect

The Hudson Valley has EV Infrastructure. Ulster County has the most for now! Check on PlugShare.com for all of them.

SUNY Ulster

Courthouse

County Office Buildings

Nine Locations

Fast Charging on the Thruway

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See for yourself! Simulate your savings with Wattplan tool

https://nyserda.wattplan.com/

At the end of the Program!

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Shopping for the right DEALER: some questions to ask:

- How much is the car?
- Can I lease and upgrade when a newer EV comes?
- Make sure the dealer is interested in helping you get that electrified car!
- What are the tax credits available for my car?
- How do I receive the tax credit?
- Can I test drive the car?
- How long until the car will arrive?

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EV Battery Pack Warranties are Real

According to Hybridcars.com, typical battery warranty is eight years, and mileage is usually at least 100,000 miles. Tesla warranties its 60-kwh Model S to 125,000 miles, and the 85-kwh version gets unlimited miles.

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Battery and range examples

- Toyota Prius 8.8 kWh Battery 22 miles
- Chevy Volt 16kWh Battery 38 miles
- Ford Focus 23kWh Battery 76 miles
- C-MAX Energi 7.6kWh Battery 21 miles
- BMW i3 22kWh Battery 80 miles
- Nissan Leaf 24kWh Battery 75 miles
- Tesla Model S 90D 90kWh Battery 265 miles

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Nissan Leaf all Electric

- Most sold EV behind the Chevy Volt
- $29,200
- 107 Mile Range
- 110 hp
- 200 Mile Range for 2017-2018 Model

Source: Green Living Guy Productions

Tesla Motors Model S

- All Electric Sedan is the flagship sedan of Tesla Motors
- Starts at $71,000
- Able to lease now for $539 a month.
- Usually costs $85,000-$120,000 to buy the P85D (dual motors)
- Range between 250 to 315 miles.
- Amazing car!!

Source: Green Living Guy Productions

Source: Tesla Motors

Tesla Model X

- All Electric 250 mile range SUV
- Seating for 7
- Starting at $80,000.00

Tesla Model 3

- Tesla Model 3 is cheapest electric car from the Tesla fleet.
- $32,000 but when you include $7,500 Federal Tax Credit it's closer to $25,000.00.
- It's range is 200 miles and has already over 500,000 deposits.

Source: Tesla Motors

VW eGolf all electric car

- Current model is 83 Mile Range
- $29,800
- $299 down and $199 month
- Future models will have a 300-mile range to charge in 15 minutes (fast charging).
- Now the CEO of VW Group says plans include a 15-minute charge time and a price lower than gas models, according to Engadget.

Source: Green Living Guy Productions and VW

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Hyundai Ioniq electric

- According to Hyundai, the EV will have a 118-hp electric motor and
- an estimated 155-mile range
- The fast charger can recharge its battery to 80% in 24 minutes.

Source: Hyundai

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Ford Focus EV

- $29,200
- 100 Mile Range
- 143 hp

Source: Green Living Guy Productions

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2017 Chevrolet Bolt Electric Car

238 miles at $37,500 before tax credits.
$30,000 all electric car!

Source: Green Living Guy Productions

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Kia Soul EV

The Kia Soul 2016 all electric Car gets 93 Miles all EV.
$34,500
In all ECO Mode it can get close to 120 with regenerative braking.
Only $199 month with $2,999 down.

BMW i3

81 Miles all electric
$43,300
170 hp
Optional small gas engine that doubles range. Gas only powers the electric motor. REx package

Image Source: Green Living Guy Productions

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Plugin Hybrid Electric Cars

Plugin hybrid electric cars have an all electric range (some better than others) between 15-50 miles) and then the rest is hybrid electric.

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The Chevy Volt plugin hybrid electric car gets 53 miles all electric then hybrid. The new 2017 model has a lot of the same features as the older Cadillac ELR plugin hybrid. Priced at $34,000 net $31,500 with tax credit

Chevrolet Volt

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Ford Fusion Energi Plugin Hybrid

$32,120
19 Miles all EV
EPA-Est. MPGe
City/Hwy 104/91

$388/mo 36 months lease
$2266 due at signing
*Security deposit waived

Drive Electric Hudson Valley

Ford CMAX Energi

$31,770
19 Miles all electric
$223/mo 36 months lease
$868 due at signing
*Security deposit waived
EPA-Est. MPGe
City/Hwy 95/81

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Toyota Prius Plugin Hybrid or Prime

- Currently only an 11 mile EV range.
- Prime model 22 mile EV range but guaranteed 50-55 MPG
- $29,900
- The new Prime is anticipated to have more EV range but nothing confirmed.
- Old 2016 Models going for $16,500

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2016 Hyundai Sonata Plugin Hybrid Blue Drive

- 27 EV range
- Starting MSRP $32,500
- 202 horsepower

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Hyundai Ioniq Plugin Hybrid Electric Car

- If close to the Sonata expect 25 Mile EV range or more.
- In ECO mode it is more EV range.

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Volvo Plugin Hybrid electric car

T8 Twin Engine with their powerful Drive-E at 400hp

- Volvo reports 27 Mile all EV or 59 MPG
- Accelerates from 0-62mph in just 5.9 seconds, making it a true high-performance car.
- Estimated price at $61,500

Image Sources: Green Living Guy Productions

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13 Miles all electric
24 MPG vs 17 on pure gas
$64,000

BMW X5

Plugin Hybrid Electric SUV

BMW 740e xDrive

The 2017 BMW 740e xDrive iPerformance $89,100 plus $995 Destination and Handling.

Estimated for 14 Miles all electric. Powerful over 324hp combined power.

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Porsche Panamera Plugin Hybrid electric car

EPA rating 50 mpg combined and 70 MPG highway
17 Mile All Electric Range
Price: $93,000
Not full tax NYS Tax Credit

Image Sources: Green Productions

Porsche Cayenne Plugin "e-hybrid"

25 Miles all electric. Average MPG is 40 MPG but overtime MPG decreases if plugin EV range gets drained completely. If in EV range then 100 MPG. Starts at $85.000

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2016 BMW i8 plugin hybrid electric sportscar

- While 0-60 in 3.7 seconds it's also powered by a Mini Cooper engine Twin Turbo.
- The All Electric is delivering the rest of the torque plus 15 miles all electric. Not full tax credit.
- While its price tag is about $140,000 it's an amazing MPG is closer to 35 MPG combined and 40-50 on highway MPG. If in town can be 100 MPG.

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Thank You For Your Time!

Drive Electric Hudson Valley