

# ELECTRIC VEHICLE SUMMIT

2019

# EV Market Overview

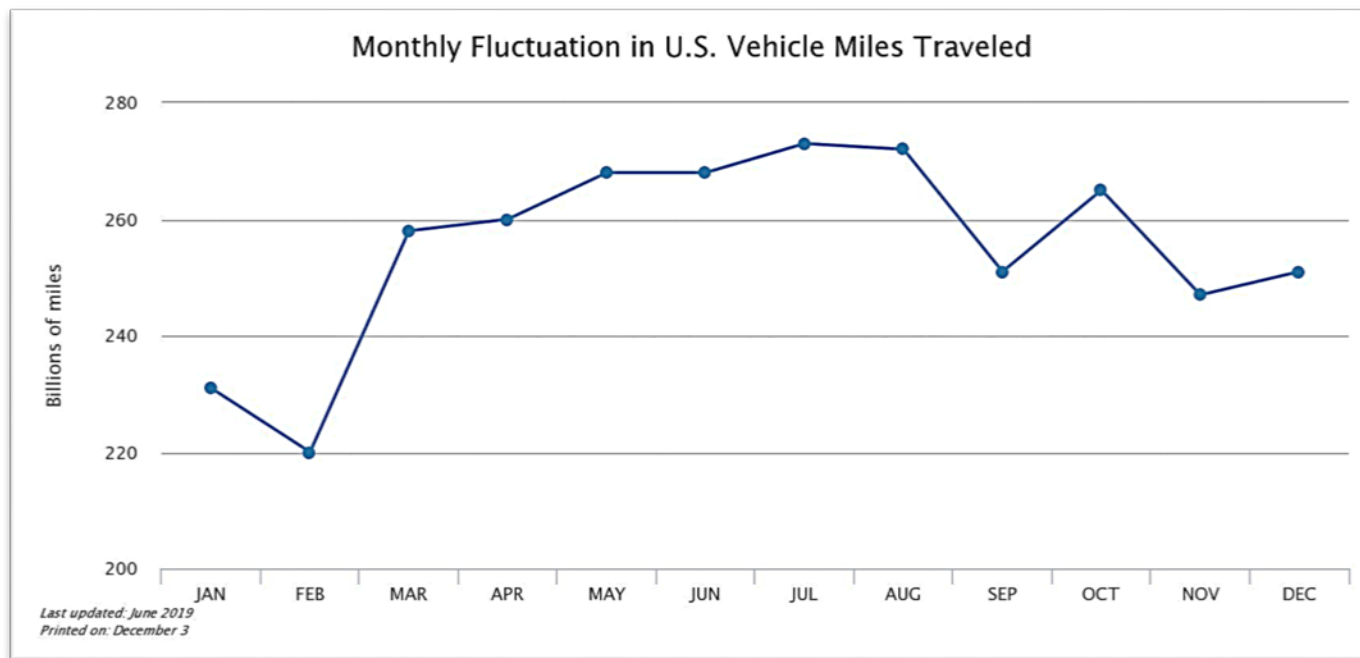
**Kristen Glehan**

Central Hudson

Director, Marketing & Sales

# National Mileage

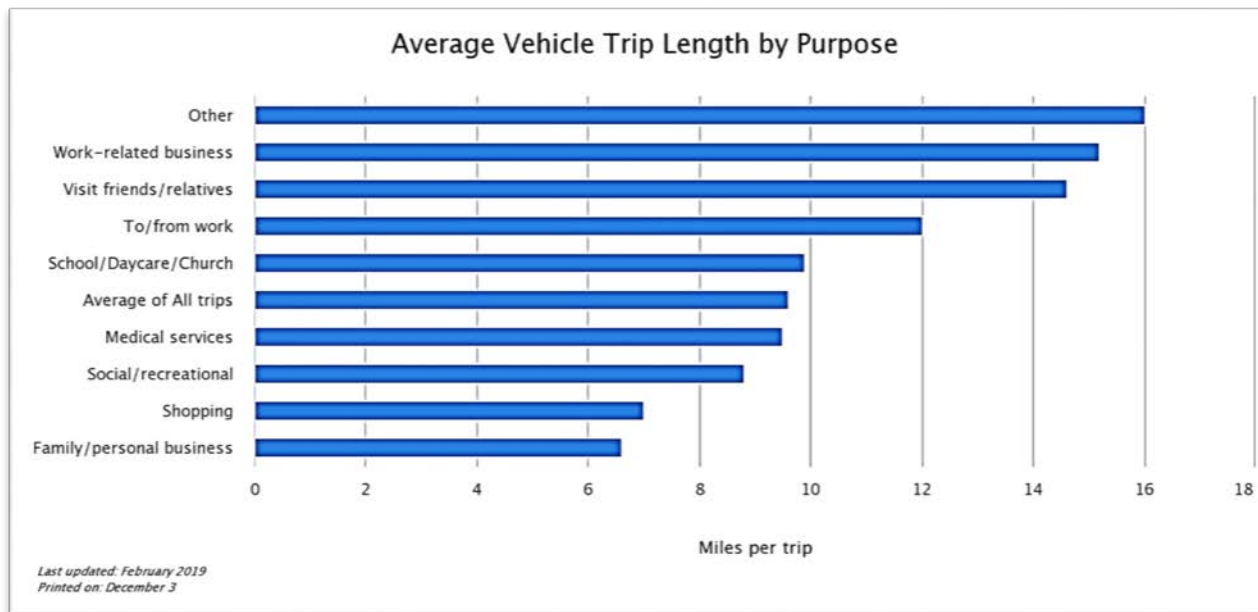
- An average of 255 billion miles are driven monthly within the U.S.A
- This includes light, medium and heavy duty vehicles



Imagine the impact of converting these miles from gasoline/diesel to electric

# Household Driving Patterns

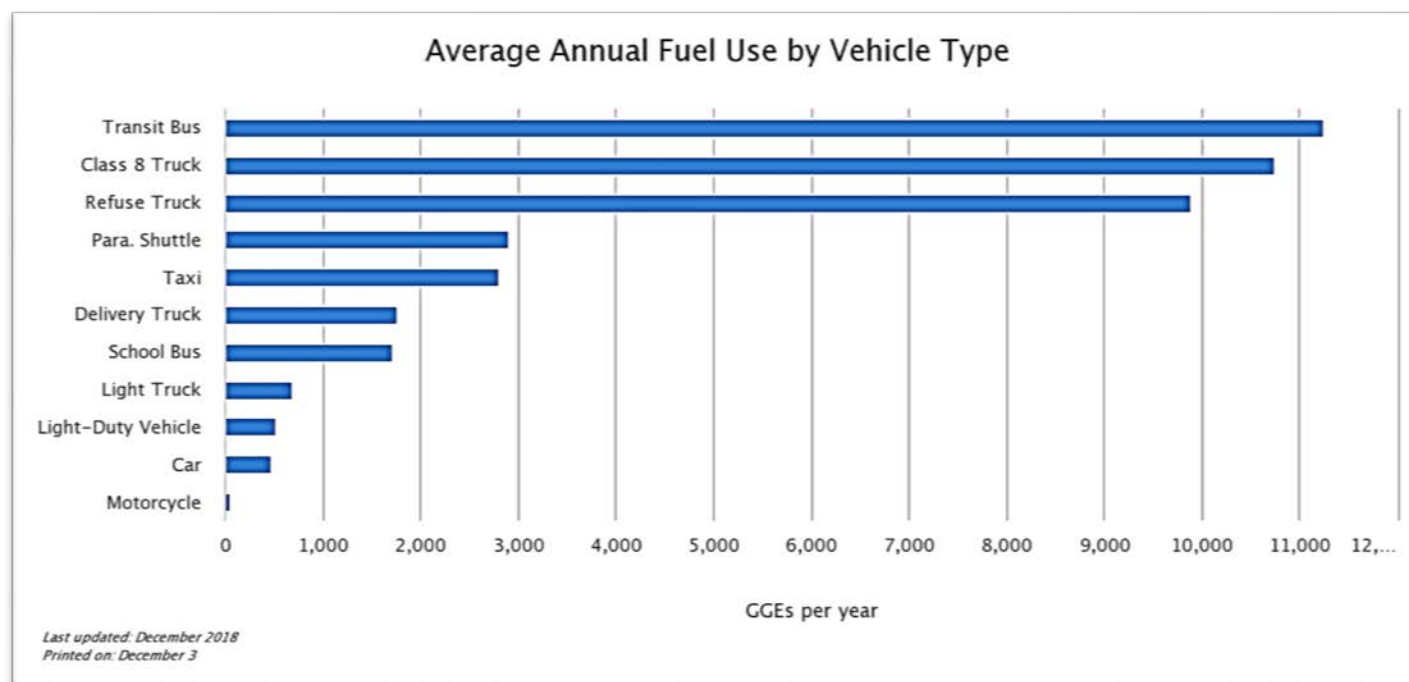
- Over 59% of all household vehicle trips are less than 6 miles
- Only 5% of all household trips are over 30 miles, with most being related to business purposes and personal travel



Source: AFDC and Oak Ridge National Laboratory. [National Household Travel Survey and Transportation Energy Data Book Edition 37 Table 8.8](#). 2/12/2019

# Gasoline by Vehicle Type

- Household cars and motorcycles account for the lowest amounts of national annual gasoline use.



Source: [Federal Highway Administration](#) Highway Statistics 2016, Table VM-1. Accessed 11/20/18

# Gross Gasoline Distribution

Gross volume of gasoline and gasohol reported by U.S. wholesale distributors, derived from state taxation reports.

	2017	2018
All U.S. States	146,250,996,881	145,923,168,94
New York	5,801,064,475	5,840,676,252
<b>YOY change</b> <b>All U.S. States – 0.22% decrease</b> <b>New York – 0.67% increase</b>		

Source: Office of Highway Policy Information, Federal Highway Administration <https://www.fhwa.dot.gov/policyinformation/motorfuel/apr19/mmfr07.cfm>

# E-Gallon Savings

## Room for Investment?



National

- \$1.21 / e-gallon
- \$2.62 /gasoline gal
- All things being equal, this would reflect savings of:  
**\$20,575,166,820.54**

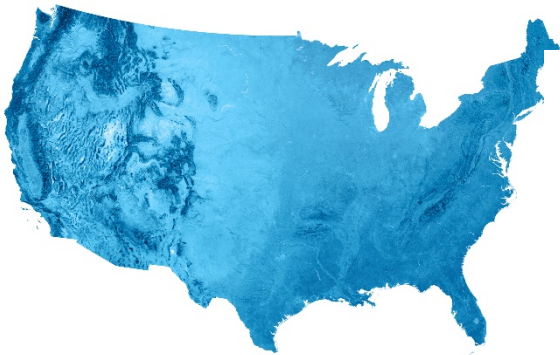
New York

- \$1.67 / e-gallon
- \$2.62 / gasoline gal
- All things being equal, this would reflect savings of:  
**\$8,235,353,515.32**

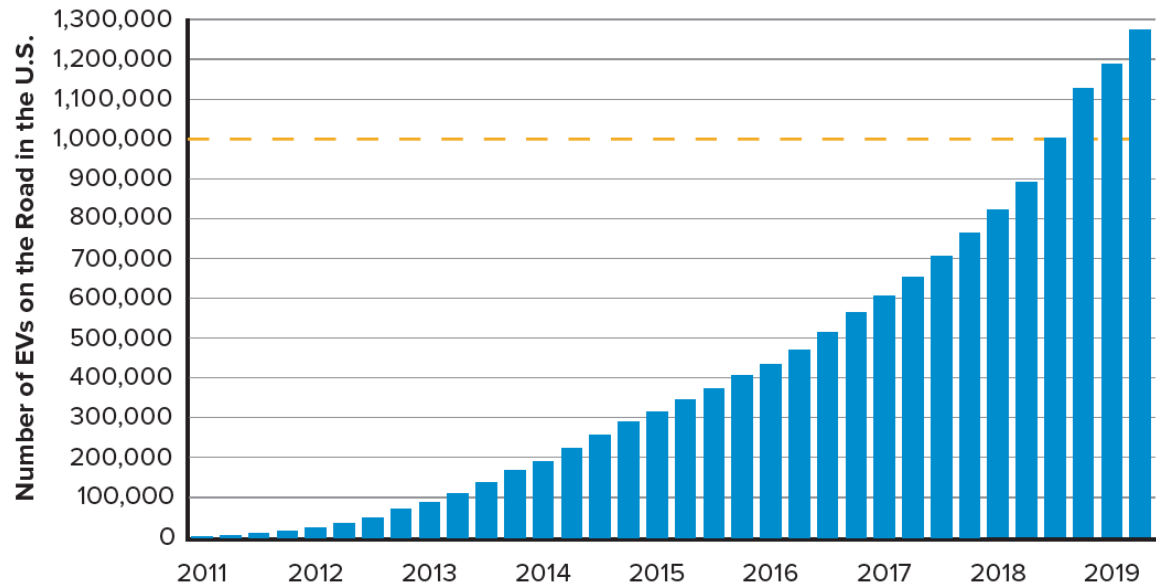
Source: <https://www.energy.gov/maps/egallon>

# U.S Market Penetration

- More than 1.27 million EVs are on the road in the U.S. as of June
- In Q2 2019, approximately 85,000 EVs were sold in the U.S., an increase of 23% over last year.



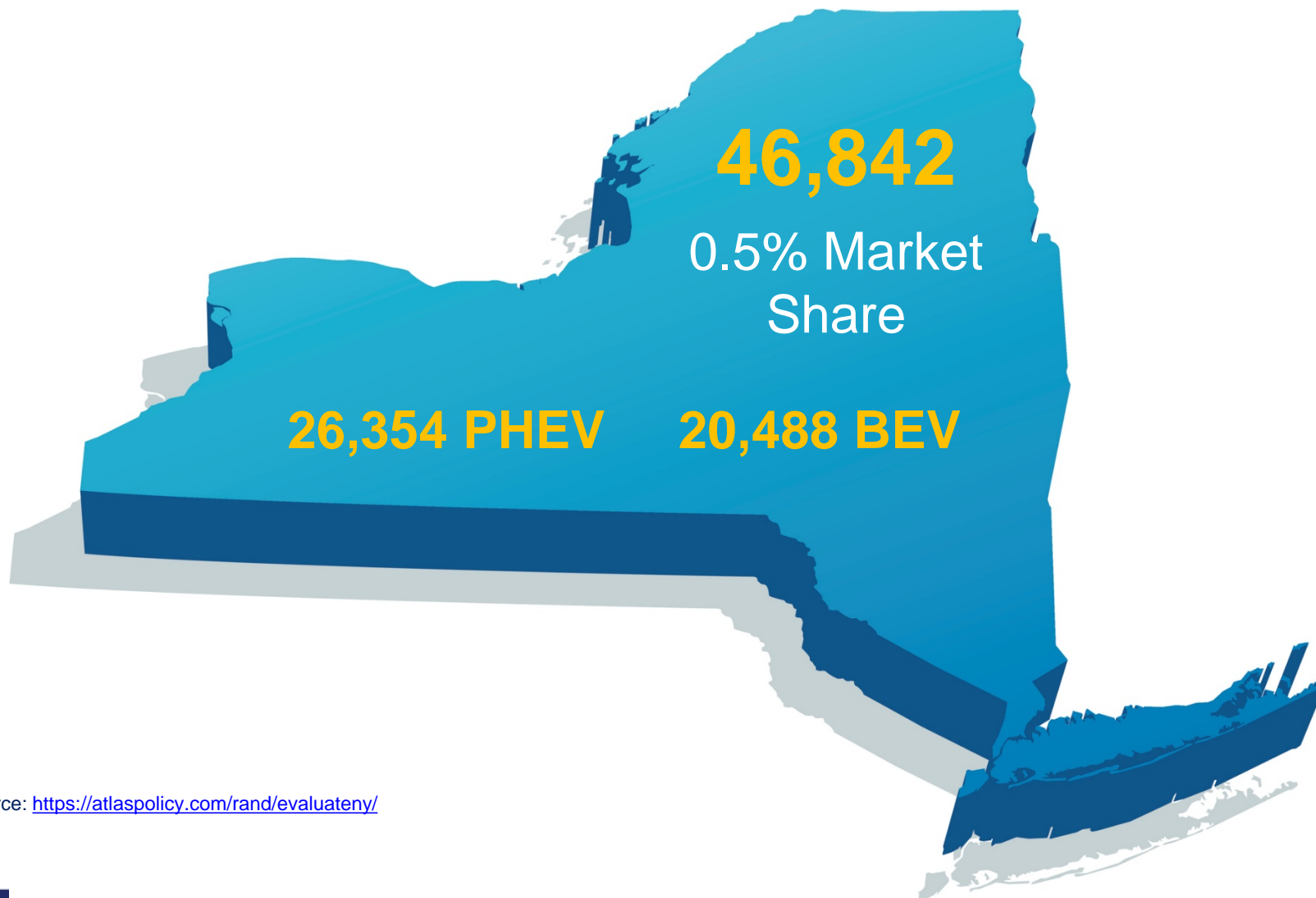
**More Than 1.27 Million EVs Are on the Road in the U.S.**



Sources: Edison Electric Institute, [InsideEVs.com](http://InsideEVs.com) and [HybridCars.com](http://HybridCars.com)

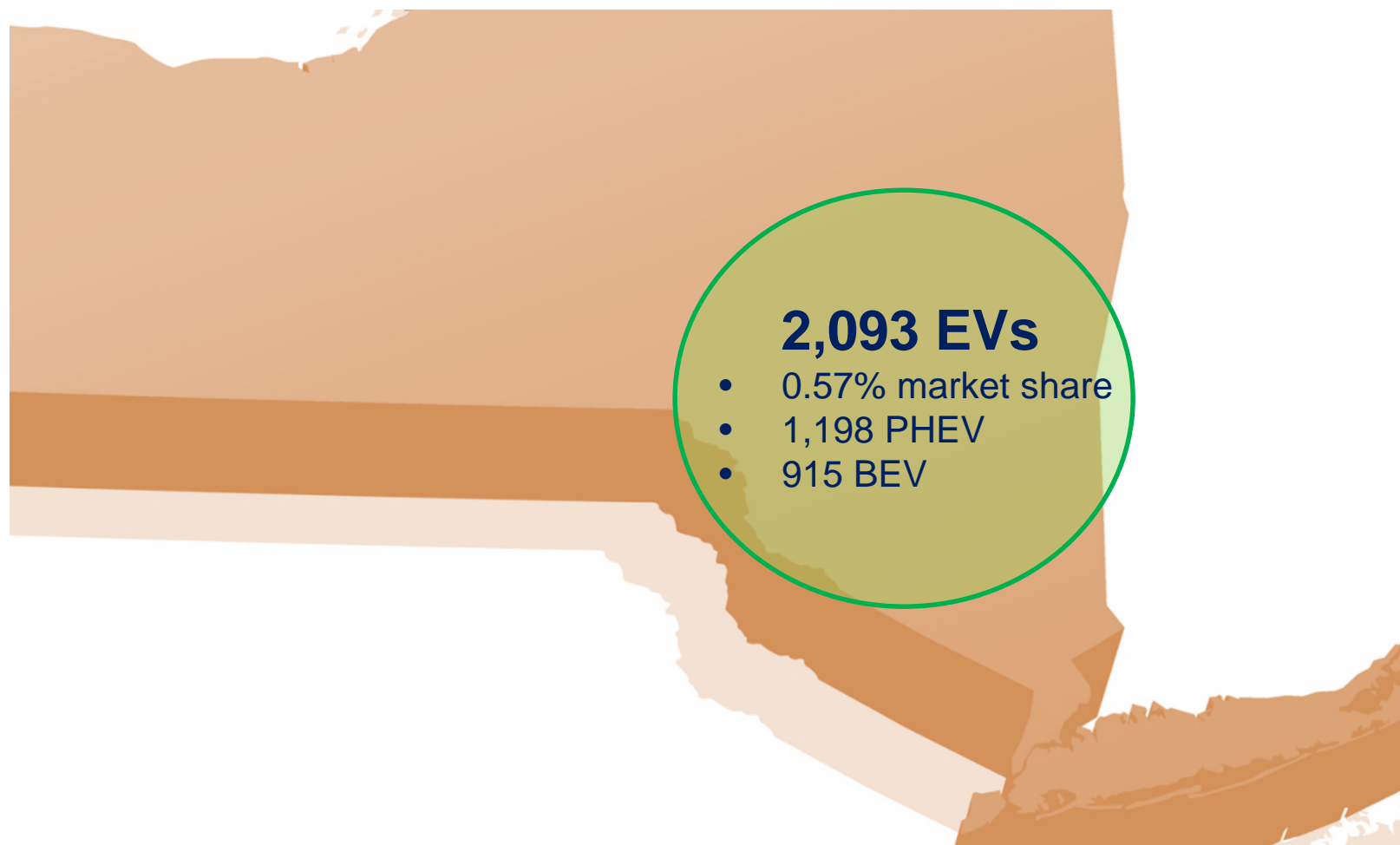


# New York State EV Adoption



Source: <https://atlaspolicy.com/rand/evaluateny/>

# Service Area EV Adoption



# Auto Manufacturer EVSE Investments



Ford has announced plans to provide the largest public electric vehicle charging network:

- 12,000 places to charge
- Over 35,000 charge plugs
- L2 and DCFC
- Ford is working with Greenlots to bring together multiple charging providers to develop the FordPass Charging

Customers will have option of choosing a 48-amp Ford Connected Charge Station at time of purchase, capable of charging a 300 mile range vehicle overnight.

Source: <https://media.ford.com/content/fordmedia/fna/us/en/news/2019/10/17/ford-introduces-north-americas-largest-electric-vehicle-charging-network.html>

# Evolving Vehicle Technology

- New body types
  - SUV, vans, trucks
- 4WD/ AWD options
- Longer ranges
- Faster charging
- Solar power



# Electric Taxi & Ride Shares



New York City Taxi and Limousine Commission (TLC) has added the Tesla Model 3 to its list of nearly 40 approved vehicles for taxi fleets. The first electric vehicle to be added

Pending regulatory approval, Tesla intends to roll out an autonomous taxi service, leveraging the vehicles of existing owners and taking the rideshare concept to a new level.

# Electric Rental Cars



LYFT has added electric vehicles to its Express Drive short term vehicle rental program.

Electrify America has partnered with LYFT to automatically include EVSE network access with the weekly rental, including DCFC charging.

# Investments in Battery Factories

- **SK Innovation** invested \$1.67 billion in its first U.S. plant in northern Georgia in 2018
- **Mercedes-Benz** began construction last year on a battery factory near Tuscaloosa, Alabama, part of a \$1 billion investment in EVs.
- **BMW** announced in July a \$10 million to double battery assembly capacity at its Spartanburg, South Carolina plant.
- **GM** intends to invest in a battery plant as part of their recently announced \$7 billion investment in U.S. auto manufacturing.
- **VW** announced a \$1 billion investment in June battery production, with a Swedish battery startup.



# New Battery Technology

ID TechX Conference for Emerging Technologies had startups showing off new battery technology to increase driving range, cut costs, extend lifespan, speed up charging and reduce fire risks. While none are presently available, it is an indication of what will come in next decade.

Greatest focus is on energy density – to enable more kilowatt-hours of charge on smaller, lighter batteries, which can lighten vehicles and extend range.



# Electric Hybrid Airplane

Ampaire has developed twin-engine electric hybrid airplane technology.

- Combustion engine in the front and electric in the back for redundancy and safety.
- Built as a retrofit to existing airplanes.



Airbus expects their E-Fan X to take it's first demonstration flight in 2021

- One of four jet engines will be replaced with a 2MW electric motor supplied by Rolls Royce. The motor is the equivalent to 10 midsize cars.
- Incorporates a power generation system

Thank you