

Tesla's Dominance in Electric Cars

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I am a long-time follower of the progression of Tesla Inc. I test drove the Tesla Model S several years ago and test drove the Tesla Model X over a year ago. I ordered the Tesla Model 3 on the first day possible and was delighted to get it on 28 May 2018, 2 years and 2 months later.

I have had [five full electric cars](#) since 2007, starting with a lead-acid-battery ZAP Xebra PK lead-acid-battery 3-wheel pickup, then two Nissan LEAFs, then the Chevrolet Bolt EV Premium and now the Tesla Model 3 Long-Range (TM3LR) BEV. My TM3LR's VIN number is nearly 26,000.

My daughter and I recently drove my TM3LR on an [easy round trip from Virginia to Texas](#) using Autopilot most of the way. I have driven a huge number of cars since I am over 82 years of age and started driving on an Oklahoma farm at age 12. The TM3LR is the best car I have driven.

I have given many lectures on hybrid-electric cars (HEVs), plug-in hybrid-electric cars (PHEVs) and battery-electric cars (BEVs), have organized several local shows of them and have organized several local parade entries for BEVs. I have published several commentaries in The Roanoke Times in Virginia about BEVs; the latest is [The electric vehicles revolution](#). I have followed closely the installation of charging stations for PHEVs and BEVs across the U.S. I have helped get such stations installed at several locations in my region and constantly admonish other locations to install them.

It is clear that Tesla is far ahead of other organizations in installing fast charging (480-volts-DC) charging stations ([Superchargers](#)) for Tesla cars and Tesla has installed a large number of 240-volts-AC charging stations for Tesla cars and all PHEVs and BEVs through its [Charging Partner program](#). See below for maps of Tesla charging stations in the U.S.

I have read many online articles with titles such as:

- [The Tesla Model 3 Will Fail](#)
- [Tesla is Not Too Big To Fail](#)
- [Wall Street is massively betting on Tesla's failure](#)
- [Tesla is 'headed for the graveyard,'](#)

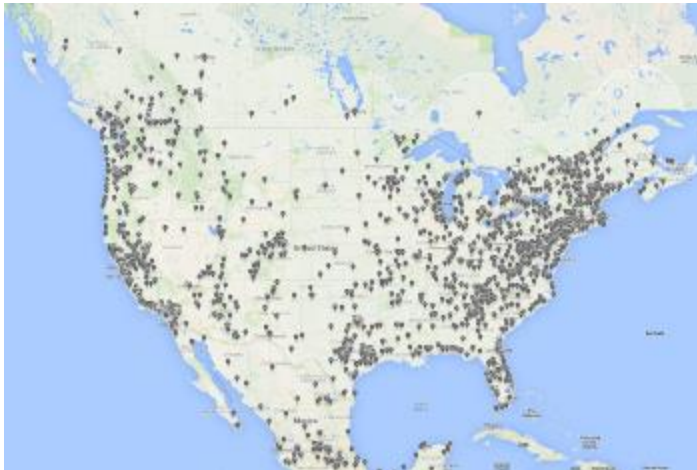
I note that many of these articles have been written by Tesla stock-shorters or Internal-combustion-engine(ICE)-oriented people with vested interests in their predictions to be true. I think they are not considering much contrary evidence against their predictions:

- A long-range BEV brand will survive long term only if a massive fast-charging (480-volts-DC) network spanning the U.S. in all directions is available for their BEVs to charge easily and pleasantly. Tesla has most of such a network ([Superchargers](#)) already and is rapidly adding to it rapidly:



Note the gray graph symbols for Superchargers to open in 2018 and 2019. The Superchargers are at interesting sites such as shopping centers, hotels and even gasoline stations. They range from 4 to [40 charging stations](#).

- In addition, a long-range BEV brand will survive long term only if there are many hotels where BEVs can charge overnight while their drivers are sleeping. Tesla has a large network of [Destination-Chargers](#) (240-volts-AC charging stations) at many hotels across the U.S. and is constantly installing more:



Tesla is even working against its own interest by also installing at the same hotels standard 240-volts-AC charging stations that all PHEVs and BEVs can use. An example location is [Courtyard Blacksburg in Blacksburg VA](#) with two Tesla High Power Wall Connectors (up to 80A) and two Clipper Creek J1772s (up to 40A) available for patrons only.

- [Electrify America](#) has started installing CHAdeMO (Asian) and CCS (European and American) 480-volts-DC fast-charging stations across the U.S., but the number planned is a small fraction of the number of Tesla



Supercharging stations:

The large symbols show the Electrify-America charging-station locations open as of May 2018. An example is the location at [Brugh's Mill Country store on I-81 near Fincastle VA](#) with one CHAdeMO station and four CCS stations.

- 91% of Tesla owners told [Consumer Reports](#) that they “would buy again” a Tesla BEV, the highest rating for any car manufacturer, ahead of #2 Porsche with 84%.
- Battery expert [Jack Rickard](#) disassembled the TM3LR battery and concluded that it is the “most advanced large scale lithium battery ever produced”.
- Engineering firm [Munro & Associates](#) did a teardown of the TM3LR, did a cost analysis and concluded that it will have over 30% profitability.
- The TM3LR received the [highest crash ratings](#) (5 stars) in all three categories from the National Highway Traffic Safety Administration.
- The three [longest range BEVs \(EPA rated\) planned for the next few years](#) by all car companies are the Tesla S 100D (335 miles), the Tesla S P100D (315 miles) and the Tesla Model 3 Long Range (310 miles). There is [indication that the TM3LR range is actuated rated by EPA as 334 miles](#), but was derated at Tesla’s request to 310 miles. ([Various reasons have been suggested for the derating.](#))
- Most features of Tesla BEVs are software driven and Tesla often updates software using cell service or customers’ Wi-Fi.
- Tesla claims that [currently-built Tesla BEVs have all the hardware needed for eventual autonomous driving](#). Tesla uses radar and most other BEVs use the more expensive lidar for autonomous driving. [It is currently unclear which of radar and lidar will win.](#) Tesla has data for [over 7-billion miles](#) of BEV driving and [over 1-billion miles](#) of its BEVs’ driving with some version of Autopilot; no other autonomous-driving company has anywhere near that amount of data to use in developing autonomous driving.
- Tesla listens to its customers and often does software changes suggested by drivers.
- Apparently there are over 300,000 TM3 orders to be filled and several hundred orders per week are coming in.
- Tesla sells its BEVs online and in their own stores with no ICE cars present to distract the customers by sales persons for easier sales and, thus, higher commissions. A big obstacle for other car companies to overcome in selling BEVs is convincing their dealers to spend more time selling BEVs to the uninformed public that will not provide them anywhere near the usual ICE repairs income. Currently [most dealers try to steer buyers away from BEVs to ICEs](#).
- Tesla has an extensive mobile service program and [plans for it to account for about 80% of service needs](#).
- Tesla is building [Tesla collision repair shops](#) to greatly reduce the repair time.
- [Bloomberg’s Tesla Model 3 Tracker](#) indicates that almost 100,000 TM3LRs were made by 20 September 2018 and nearly 4000/week are being made. Much evidence indicates that the weekly build rate will increase over the next few months.
- I have not discussed the [solar energy and electricity battery backup](#) side of Tesla. I think it will be a large part of Tesla’s success in the future.

- Tesla's CEO, Elon Musk, wants to reduce carbon emissions on the Earth, for which replacing ICEs by long-range BEVs is necessary, and he has the intelligence, knowledge, stamina and drive to make Tesla the dominant maker of such BEVs. The evidence given above indicates that he is succeeding in his mission.

Of course, there are negative aspects of Tesla Inc. I do not discuss them here because Tesla stock-shorters and ICE-oriented people have done a good job at that. Those who are predicting the fall of Tesla should study the [history of Musk's SpaceX](#). Pulling SpaceX from predictable demise after the first three rocket-launching failures makes Tesla's success look like child's play!

My [summary of upcoming BEVs of other car companies](#) indicates that only VW will have an array of BEVs that can compete with Tesla's BEVs over the next few years. VW is the originator of Electrify America, so combining its upcoming BEVs with the planned Electrify American charging network probably will place VW as the closest competitor to Tesla, but far behind it.

The author bought some Tesla stock when it was at its highest value, but expects it to exceed that value in the future.

References

- [The electric vehicles revolution](#)
- [Seven reasons why the internal combustion engine is a dead man walking](#)
- [Tesla has 'no credible competition' analyst says](#)