

The U.S. Electric Vehicle Story, Part 3, Rivian et al?

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November 2025

1. Introduction

If you wandered into this story without first reading parts 1 & 2, I would suggest you read those first. Links are below.

<https://www.energycentral.com/customer-engagement-experience/post/the-u-s-electric-vehicle-story-part-1-the-beginning-nKLk8XBv7isRaND>

<https://www.energycentral.com/customer-engagement-experience/post/the-u-s-electric-vehicle-story-part-2-the-ford-story-G8UcMdWxSpRgw3w>

Your author lives in Livermore, California, on the eastern side of the San Francisco Bay Area (hereafter “SF Bay Area”). My city and area are hot-beds for all electric vehicles. I’m guessing that I see as more Teslas in a typical day than either Chevys or Fords. The Tesla Mothership Factory in Fremont is about 30 about miles from Livermore, and they have a Distribution Center in Livermore.

I also see many Rivian Trucks and SUVs. Their Headquarters are in Southern California, and their largest factory in in Normal, Illinois.

Normal is a college town in the farmlands of central Illinois. On the west end of town, a factory sits hemmed in by cornfields. From the road, it looks big, but far away and not out of place, a clean white (gleaming white on a sunny day) structure that rises modestly above the flatness. Get closer, though, and you start to sense just how massive it is—more than half-a-mile long with some eighty acres of space inside.¹

This is the flagship factory of electric truck startup Rivian. It was here in September 2021 that CEO RJ Scaringe gathered a few dozen of his most senior employees. The factory had come to life just a few weeks earlier, churning out what would be the first fully electric pickup truck on the market, the R1T with its unmistakable headlights. Rivian's boxy, athletic-looking pickup was about to beat Ford's F-150 Lightning to market by about eight months (see image below).



¹ Mike Colias, “InEVitable, Inside the messy, unstoppable Transition to Electric Vehicles,” © 2025 Mike Colias, <https://www.amazon.com/dp/1647825385?tag=uid10-20>

Rivian was weeks away from an initial public offering that had the potential to make some people in the room millionaires. Expectations were that Rivian could begin trading at a valuation of around \$60 billion, an extraordinary amount for a company that was unproven in the cutthroat U.S. car market and unlikely to turn a profit for years. Rivian was burning through about \$1 billion a quarter and, at best, would sell twenty-five thousand vehicles in the coming year. GM and Ford would post a total of \$24 billion in operating profit in 2021, and together sold more than 10 million vehicles.

Yet that stock valuation would have put Rivian's market cap on a par with GM's and Ford's. Investors clearly were looking for future development, and they had a model for one. Tesla already had shown them the magnitude of the EV growth opportunity: its market value was sitting above \$1 trillion, entering the tech-giant stratosphere. The interest in Rivian had earned the company an informal moniker: the Tesla of Trucks. As the team met that night, Rivian was arguably the hottest car company on the planet.

RJ Scaringe's appearance hewed closely to Clark Kent: tall and square-jawed, with dark hair, black-rimmed glasses, and an easy smile, which, at this meeting never left his face. He was there to toast his most loyal employees, some of whom had gutted out the startup life for a decade, joining him when Rivian was just an idea. There are so many barriers to entry for a new car company that the mere fact Rivian had begun producing those electric trucks was remarkable in itself, an achievement impossible without the people in the room. The employees gathered with spouses and small children, a nod to the sacrifice that the families made during years of grueling long hours amid the uncertainty of an automotive startup. It was a rare congratulatory moment for Scaringe, who, while relentlessly positive and optimistic, was not much for pats on the back. Day-to-day, Scaringe was affable and upbeat, but relentless, always onto the next thing.

2. Toyota

You will note that all of the other manufacturers covered by this series so far are based in the U.S. So isn't Toyota the odd-man out. No, not really. Part of this story includes hybrids and extended-range EVs. Toyota is clearly a leader in hybrids with their history with the Prius. Also, they also offer the widest range of hybrids of any manufacturer in the U.S.

Toyota Hybrids: Full Lineup and Expert Ratings²

Toyota's 2025 hybrid lineup includes a variety of models designed to cater to different needs and preferences. Here's a summary of the available hybrids:

Toyota Corolla Hybrid: *Starting from \$23,825, it offers a combined 47 mpg and is ideal for urban driving.*

Toyota Prius: *Known for its aerodynamic design and up to 57 mpg combined, it remains a top choice for efficiency.*

² The italicized text resulted from a query of my Microsoft Bing search engine: "What hybrids does Toyota offer in the U.S. in 2025?"

Toyota Camry Hybrid: The latest redesign includes a 2.5-liter four-cylinder engine paired with electric motors, offering a combined 225 hp.

Toyota RAV4 Hybrid: A versatile SUV with a potent 219-hp engine, perfect for family adventures or rugged terrain.

Toyota Highlander Hybrid: A spacious SUV that comfortably seats up to eight, ideal for larger families.

Toyota Crown: Features luxury and power with advanced tech and a turbocharged engine.

Toyota Tundra Hybrid (Pickup): Combines robust performance with eco-conscious engineering, suitable for demanding jobs and weekend getaways.

Toyota Tacoma Hybrid (Pickup): Offers a blend of power and efficiency, ideal for various driving conditions.

Toyota Prius Prime: A plug-in hybrid with an all-electric range, making it a great option for those seeking an all-electric vehicle.

Toyota RAV4 Prime: Another plug-in hybrid with an extended electric range, providing flexibility for drivers who need more range.

Also, although they do offer a single battery electric vehicle (BEV) in the U.S., (the bZ4X), and their sales of this BEV nearly doubled last year. But this manufacturer is still falling behind in the U.S. BEV market. Overseas rivals like Hyundai and Kia are well ahead of Toyota. Even other Japanese automakers, including Honda and Nissan, are selling more BEVs in the US than Toyota.

Most manufacturers offer at least one BEV, and many also offer hybrids, but Toyota is clearly a leader in hybrids. Furthermore, although I don't really trust any news forecasts (especially from auto manufacturers), I noted that Toyota has forecast the following for 2026, which probably means initial deliveries later this year.

Toyota continues to move its electrified vehicle portfolio forward by announcing its 2026 bZ Battery Electric Vehicle (BEV)³.

Author's comment: The bZ is the successor to the bZ4X mentioned above.

For model year 2026, the model makes advancements in range, output, charging performance, and vehicle design. Leading the charge is a larger lithium-ion battery with a higher total capacity of up to 74.7-kWh, equipped on a newly available XLE Front-Wheel-Drive Plus (FWD Plus) model, as well as the XLE All-Wheel-Drive (AWD) and Limited (FWD/AWD) grades. Models equipped with the new battery are projected to have a manufacturer-estimated rating of up to 314 miles of range on a full charge. A 57.7-kWh battery will also be available on a XLE FWD model.

³ Toyota, 2026 bZ, <https://www.toyota.com/bz/?msocid=234c177cbb1d6cca0f6904bcba996d70>

The 2026 bZ will be equipped with a North American Charging System (NACS) charging port (the Tesla Standard) giving it access to thousands of high-speed charging stations nationwide. Under ideal conditions when using DC fast charging it is capable of charging from 10% to 80% battery capacity in around 30 minutes. The 2026 Toyota bZ also adopts Plug & Charge capability, an industry standard protocol that allows automatic identification, authentication and authorization at selected charging networks, reducing the need for multiple mobile charging applications.

2.1. New Toyota BEV Models for 2026

2.1.1. C-HR

While the C-HR EV (sold as the C-HR+ in Europe since 2023) isn't entirely new globally, it's a fresh entry for American buyers, and a bold one at that. Slated to arrive by 2026, the electrified C-HR adds a long-overdue second all-electric option to Toyota's U.S. lineup, joining the bZ. Built on Toyota's dedicated e-TNGA platform, the C-HR EV brings more than just a new powertrain—it brings power. With a dual-motor, all-wheel-drive setup producing 338 horsepower, Toyota is clearly aiming for fun. A sub-5-second 0–60 mph time puts it well ahead of most compact crossovers and might even turn the heads of performance hatchback fans.

Range won't be an afterthought either. Toyota claims the 74.7 kWh battery will deliver up to 290 miles of driving on a full charge.



2.1.2. BZ Woodland

A stretched body and wheelbase turn the regular Toyota bZ SUV into the 2026 bZ Woodland. It offers more interior space and extra cargo room versus its smaller sibling, but otherwise, the two have much in common. A two-motor all-wheel drive setup is standard and makes 375 horsepower, while Toyota claims a range estimate of 260 miles per charge. That isn't as much as some rival SUVs that can exceed 300 miles per charge, but casual drivers with shorter commutes will find it to be plenty usable as a daily driver. The bZ Woodland shares its adventurous spirit with the mechanically similar Subaru Trailseeker, including its 8.3-inch ground clearance, 3500-pound towing capacity, and available all-terrain tires. This is a Toyota EV that can venture off the beaten path, but we'd stop short of making plans to take it overlanding.⁴

3. Tesla et al

Your Author has written about Tesla's early years frequently, for instance:

Bottom-up, Tesla's Component Edge: The best do sweat the small stuff. They get the seemingly insignificant details right. They have the discipline to shine at the baby things which they get gives birth to spectacular giant things." – Robin S. Sharma, Writer

In other words, they sweat the components.

In observing Tesla for the better part of a decade, I know they do this, because of their results, because they constantly tinker with everything, and they design their products so they can do this (consider their fully connected EVs).

This post will look at components that Tesla is working on currently, and suggest how these might impact their future products. It will also look at third quarter 2021 results and other Tesla news.

Tesla Environmental Impact: Yes Mr. Musk is as rich as Midas, and maybe arrogant, but he is totally focused and very serious about everything he does. He also surrounds himself with the best engineers and other employees, and insists that they are just as dedicated as him...

The document this post reviews is over 100 pages long, and is full of details. This post will provide a few words and figures, but if you are interested – you might consider downloading the full document, which is linked in this post.

Tesla 2021 Update: I am starting to write this about a month before I plan to post it, and only three months after my last post that dealt heavily with Mr. Musk's battery electric vehicle company. However, such is the pace of developments from said company that my "Tesla bucket" is close to overflowing, so I need to start putting these in a paper.

⁴ Drew Dorian, Car and Driver, "2026 Toyota bZ Woodland," <https://www.caranddriver.com/toyota/bz-woodland>

This post will focus on Tesla Mobility Products, but cover a wide range of subjects, including:

- Production Results
- Manufacturing and Components
- Future Vehicles
- Safety
- Berlin & Shanghai Gigafactories and Texas Terafactory

And others that are even older than the above. Unfortunately, these are sufficiently elderly that they are no longer posted on Energy Central. If you are interested in seeing the above posts, message me via Energy Central (a comment to this post will work), and I can make arrangements to make PDFs of these posts available.

For now, I will leave you with a quote from Mister Musk, from Reference 1:

During Tesla's Infamous period of "production hell," from 2017 to 2019, as it made the leap from producing hundreds of thousands of EVs annually, the company at one point was about a month away from running out of cash, Musk has said. That was more than fifteen years after. Tesla's founding.¹

"Prototypes are easy. Production is hard," Musk would say in the fall of 2023, when Wall Street analysts were pressing him for details on when his much-hyped and long-delayed Cybertruck-the stainless-steel pickup that would look comfortable on the set of a Mad Max movie-would actually start rolling out in real volumes. His answer probably didn't thrill investors. It's "like 10,000% harder to get to volume production than to make a prototype," he said. "And then it is even harder than that to reach positive cash flow. That is why there have not been new car startups that have been successful for 100 years, apart from Tesla."

And another contiguous excerpt from Reference 1:

That's an ominous take for the EV newcomers like Scaringe's Rivian, still struggling to scale up. But here's the rub: EV upstarts in the early 2020s would have it even harder than Tesla, because they faced some additional huge hurdles that Elon never had to worry about.

One is competition. Outside of China, Tesla essentially had a market to itself for a decade. Rivian, Lucid, and others face an influx of new models from well-capitalized traditional automakers that finally bought in on EVs, even if their early efforts stumbled. Another difference: by the time these latest EV startups were in launch mode, the era of cheap capital was over, with governments around the world raising interest rates to combat post-pandemic inflation.

And these companies were trying to launch cars in a most dysfunctional supply-chain environment. From computer chips to battery cells to even mundane items like seat foam, parts shortages were disrupting automotive factories worldwide. Despite the onslaught of investor giddiness, the timing of firing up an EV factory in the early 2020s, as Rivian CEO Scaringe would say later, "was almost perfectly bad."