

The U.S. Electric Vehicle Story, Part 2, The Ford Story

By John Benson

November 2025

1. Introduction

This is part 2 of a 3-part story about the emergence of EVs in the United States. Part 1 chronicled the emergence of the first few EVs, and one domestic manufacturer stood tall as the leader in EVs, but as most good leaders do, it took serious risks with the potential to kill it without flawless-execution.

Part 1 is described and linked below. If you wondered into this paper without reading Part 1 first, I would strongly suggest you go through the link below and complete Part 1 before starting this paper.

The U.S. Electric Vehicle Story, Part 1, The Beginning: *The corporation that led the U.S. into the EV revolution was General Motors (GM). After a false start with the EV1, GM rolled out the Chevrolet Volt, an Extended-Range EV. Chevrolet Volt show-car was ready for the 2007 Detroit Auto Show. On September 16 2008, GM's one-hundredth anniversary, the production version of the Volt, the first Extended-Range EV was shown to the press and public.*

The Volt's high-tech setup would still be in development for another two years. It would be a traumatic time for GM, and a time that humbled the notion of infallibility for American blue-chip corporations. The car got rave reviews when it finally arrived at dealerships in late 2010...

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

In this paper we will complete GM's journey with the Chevy Volt, and delve into the other early entrant into the U.S. Market. No points for guessing who after looking at the title.

2. Telsa Leads, GM Stays Big. & Ford Joins In

Sure, Tesla's stock valuation sat gaudily at several times that of Ford's and GM's combined. But Barra had cemented GM's premium over Ford for nearly a decade.¹

By December 2021, that had flipped. Farley's moves to get Ford into the game on EVs finally got investors' attention. And Ford executives were about to put an exclamation point on it. Across town, Barra had spent weeks preparing for her keynote speech at the annual consumer-electronics show, CES, an early January pageant of the latest, most cutting-edge tech held in Las Vegas. The stakes were high. Barra was to take the stage to reveal one of GM's most important new vehicles in decades: an electric version of the Chevrolet Silverado, the company's top-selling model and its biggest profit engine. For months, the GM team had been grating under the praise being heaped on Ford's electric F-150 Lightning pickup. This was their chance to show that GM's approach-a truck designed from the ground up as an electric vehicle-would blow away Ford's makeshift retrofit of a gas truck.

¹ InEVitable: Inside the Messy, Unstoppable Transition to Electric Vehicles, © February 4, 2025, by Mike Colias (Author), Harvard Business Review Press, <https://www.amazon.com/dp/1647825385?tag=uuid10-20>

Author's comment: For both Ford and GM, pickups had been their highest-profit vehicles for decades. The battles for EV sales and the ability to make a profit would be fought with pickup-based EVs first, EV SUVs second and other types of EVs only for specialized markets (like Uber-type and other corporate car and truck fleets).

The morning before Barra's big appearance, Ford PR staffers began quietly reaching out to automotive reporters to line up calls with Darren Palmer, a jovial Brit in charge of Ford's electric-vehicle programs. In a series of interviews, he said Ford was doubling factory output of the Lightning again, the second time in just four months-in response to overwhelming demand. "The feedback has been immense," Palmer gushed. "Everywhere I go, from congressmen to the guards at the door, everybody is talking to me about the Lightning."

The message was clear and intentional. The Ford team knew Barra would take the stage to wax on about how the Silverado would deliver performance that competitor EVs couldn't match. And she would be right: because of GM's from-scratch approach to EV development, engineers were able to fit more batteries into the Silverado, delivering a longer range, faster charging times, and more interior space because of its efficient layout.

But Ford's media blitz drove home a simple point: Ford will have sold more than one hundred thousand Lightnings, Palmer implied, before the first Silverado rolls off GM's assembly line. Wall Street investors gobbled up this Ford's news. Its stock leaped 12 percent that day, to close at its highest level in about two decades.

A national Covid-19 surge over the holidays prompted Barra's team to cancel her CES appearance. Instead, she filmed her keynote at Detroit's historic Fox Theatre, beaming the video into the Vegas conference. Barra, who traded her trademark black leather jacket for a crisp white blazer, played to the tech crowd, making the case that GM is no longer a car company but a "platform innovator," ready to pump out a string of electric, high-tech vehicles that can connect to owners' everyday lives.

Then a gleaming bright-blue Silverado rolled onto the stage, with its futuristic-looking face streaked in LED lights, its silhouette cutting a sleek, taut profile, like a pickup truck that had been hitting the gym. The truck, Barra said, would have a driving range of four hundred miles and could be charged up to a hundred miles in just ten minutes-stats that handily beat Ford's Lightning. "No other automaker today matches the depth and the range of GM's growing, all-electric portfolio," Barra said. "Make no mistake, this is a movement."



GM's stock fell 5 percent by the end of the day. Wall Street analysts theorized that Ford's head start was more appealing to investors than GM's admittedly impressive specs. "The optics to many investors," RBC Capital wrote in an investor note, "will be that GM is lagging behind Ford."

In the following weeks, Barra and her team made the rounds with investors and analysts to explain how GM would rapidly scale up EV factory output. But the conversation kept coming back to Ford. Why would the Silverado trail the Lightning by more than a year? Could the launch date be moved up? The undertone was clear: How could GM-the company that had declared itself "all-in" on EVs years earlier-have let Ford take the lead in the crucial pickup-truck market?

"All the questions about Ford," one person on her team said of the meetings, "were starting to get under her skin."

2.1. Ford's Comeback

The seeds of Ford's comeback were sewn years earlier, some four thousand miles away. In 2017, Jim Farley had been stationed in Cologne, Germany running Ford's European business. Ford's EV strategy at the time-or lack thereof-gnawed at Farley. The longtime marketing executive had a front-row seat to the nascent but distinct movement toward electric cars in Europe.

Farley was one of the few traditional auto executives who was taking Elon Musk's car company seriously. Tesla had been straining to ramp up production of the Model 3, its first mainstream model. Musk was famously sleeping on the floor of Tesla's lone factory, in Fremont, California, to help push through manufacturing bottlenecks, which he dubbed "production hell." But from Farley's vantage point in Europe, Tesla was getting traction. He was seeing more Teslas popping up on European roads, and on the region's sales charts. Around 3,500 Teslas were sold in Norway in 2016, he noticed. A year later: 8,000.

Author's comment: Farley is a really important figure in the evolution of EVs, so we will spend a bit of time with him. Although Farley will make his mark in the EV-world while at Ford, he didn't start his career there, but rather with Lexus (Toyota's Luxury Brand).

Farley's marketing career took off at Toyota. His team worked on the soon-to-be stalwart seller Lexus RX-300, one of the industry's first so-called crossovers, which took on the body shape of an SUV but used the frame of a car, unlike the truck-based SUVs of the day. The setup was a more elegant design, with softer edges and a smoother ride.

Farley eventually took over the Lexus brand in North America. By 2005, he landed on Ford's radar back in Dearborn. Bill Ford arranged to have a clandestine introductory meeting that January with Farley in Detroit. Farley was impressed with Ford who was then the company's CEO-but wasn't looking to leave Toyota, which had been kicking the Blue Oval's ass in market share for years.

Two years after Bill Ford started courting Farley, it was Alan Mulally who closed the deal. Mulally, a Kansas-bred aerospace engineer and onetime head of commercial airplanes at aerospace giant Boeing, had made a surprise jump to lead Ford in 2006, allowing Bill Ford to step away from day-to-day duties. During an eight-year tenure, the ebullient Mulally built an almost legendary legacy for improving Ford's operations and globalizing the company.

Farley had spent his entire career at a company whose mission was in large part to capitalize on all the things the Detroit car companies were getting wrong, gobbling up US market share with a keen focus on quality, fuel efficiency, and manufacturing expertise. Mulally spoke that language. The two discussed kaizen, a core principle of Toyota that translates to continuous improvement, one of the underpinnings of the automaker's legendary manufacturing system.

"All those things I grew up with as basic tenets at Toyota, Alan believed in too," Farley said later. "When I met him, it was pretty instant. I said, 'I want to join this company.'"

Farley joined Ford in 2007 and soon became a core part of Mulally's team during a resurgent time at Ford. When the other Detroit automakers were suffering the ignominy of bankruptcy in 2009, Ford was growing and leveraging its status as the only US automaker that didn't undergo a federally backed restructuring – not a bad claim to tout when you're trying to sell pickup trucks in the heartland.

Farley helped Ford's product-development team lay out a new look for Ford. Its vehicles took on more stylish European profiles and driving dynamics. Meanwhile, Mulally's "One Ford" strategy standardized the mechanical layouts of Ford's vehicles across global markets, which eventually grew its economies of scale, improving manufacturing quality and the bottom line. Ford even began chipping away at Toyota's sterling reputation for green cars, in part through its own line of hybrid vehicles, helping Ford shake off its image as an old-school Detroit purveyor of gas-guzzlers.

Ford moved up the rankings for vehicle quality and became seen as a more-premium player among mainstream car brands. The brand commanded higher prices for its cars.

It's a decade later now, 2017, and Farley is in Cologne, stewing over Tesla's fast-rising profile in Europe. Jim Hackett was recently named Ford's CEO, replacing Mark Fields. Fields, a New Jersey native and Ford lifer, had replaced Mulally after waiting in the wings for years, but his run was anticlimactic. He struggled to revive Ford's flagging stock price or chart a growth strategy. The same day Hackett replaced Fields, in May 2017, Farley was summoned back from Germany to Dearborn.

Farley's new title, president of global markets, put him in charge of, or in contact with, just about every facet of Ford's business. Leaders of North America, Europe, and Asia reported to him. Farley took over the familiar role as head of marketing and would oversee the Lincoln brand. He was also tasked with charting Ford's course on electrified and autonomous vehicles.

Soon after his return to Michigan, Farley caught wind of a new, fully electric prototype in the works inside Ford's engineering center in Dearborn: there had been a fully electric car under development, and nobody thought to loop in the head of Europe, where an EV revolution was underway? Furious, he demanded to see the car. A hastily called design review was convened at Ford's studios in Dearborn. Farley listened silently as the development team walked him around the vehicle, a midsize SUV about the size of a Ford Edge. Farley stood silently for what seemed like minutes.

"It looks like a Prius. That's a joke. What are we doing?" Farley recalls telling the stunned development team. "Nothing about this is compelling. Please stop right now."

The program's engineers gently pushed back. The project was far beyond the so-called design freeze, the point at which changes to the exterior styling and vehicle's dimensions-what designers call the hard points were set in stone. Major changes would set back the model's timing by at least six months, they said.

"Fine, take a six-month delay. This is not going to fly," Farley recalls saying. "I will never approve this."

Such a harsh rebuke of a prototype was unusual. But it belied Farley's evolving viewpoint that traditional automakers, including Ford, had botched their EV strategies for a decade. They treated electrics simply as a regulatory box that needed checking. Thus, most of the EVs that went on sale over the previous decade had been small hatchbacks, outfitted with just enough battery range to get the driver around town for a day – think a Nissan Leaf or Fiat 500-e. Adding more range meant bigger battery costs, which already were so expensive they made EVs money losers.

Ford fell into that trap. It marketed an all-electric Ford Focus small car from model years 2012 to 2018, with its paltry seventy-six miles of driving range-less if the owner had the nerve to turn on the heater in winter, which sucked down the battery even faster. Ford had sold about 8,700 of them over about seven years. The company sells about 8,700 F-150 pickup trucks in less than three days.

Tesla turned that vanilla thinking on its head with its stylish, lightning-quick cars that earned a fervent, growing fan base. Executives at places like GM and VW were noticing, but remained skeptical that Tesla could make the transition to mass production.

Soon after he hijacked the electric SUV project, Farley began pressing for the EV to take on design elements inspired by the sporty Mustang, which boasts Ford's most passionate fan base. So, designers lengthened the wheelbase to give the vehicle a more athletic stance. The grille was revised to an aggressive flat-oval shape. Other unmistakable Mustang styling elements were added: taut, muscular haunches and the iconic three vertical bars on the taillights.

It wasn't unusual for a car brand to transfer styling cues like the taillight design from popular models to the rest of the lineup. Farley wanted to take things a step further: he soon began agitating to affix the Mustang name to the new model, the Mustang Mach-E.

To some inside Ford, the plan was radical and blasphemous. To put the hallowed nameplate on a sport-utility vehicle-a body style so utilitarian that the word was part of its name-would be a slap in the face to Ford's most loyal and passionate customers. Farley didn't think so, and he pressed the issue. And unlike a lot of auto executives, he had the car-guy credibility to not get laughed out of the room.

Ultimately, Farley knew he had a good case and knew he would have to get buy-in from just one person: Bill Ford. The great-grandson of company founder Henry Ford-and now the company's executive chairman-has owned dozens of Mustangs. If Farley wanted to know whether transferring the Mustang name to an electric SUV would piss off the superfans, he needed to start with this one.

Eventually, Farley's team presented its case during a high-stakes presentation inside Bill Ford's wood-paneled office at company headquarters. They came prepared to make the case that the SUV's performance traits were worthy of the pony Mustang emblem. The base version of the car would have more than 330 horsepower, good enough to beat a Porsche Macan, the executive chairman was told. The higher-performance GT version? The thing will get 460 horses and outrun a Porsche 911.

The specs were intriguing enough to move Bill Ford off his "definite no" to a solid "maybe." But before he went any further, he had to drive it. Maybe Farley was hoping for that, knowing the oomph the car would give him. Bill Ford took a quick spin in a prototype at the company's proving grounds and emerged from the car flashing a double-thumbs-up. The Mustang pony could go on the electric SUV.

Farley appointed a skunk-works crew of engineers and designers to think big about EV concepts that would turn heads. The group, dubbed Team Edison, was assembled with iconoclasts and mavericks, people Farley figured could power through Ford's corporate slog and do things differently. Before showing the world the electric Mustang, Farley was pressing this team to think about the next EV project after the Mach E.

The idea of an electric pickup had been kicked around already. But for Farley, the concept really took hold during a 2017 conversation with an unlikely source: a thirty-something portfolio manager in Southern California named Bobby Stevenson. He was an automotive analyst and managed some funds for financial giant Franklin Templeton. The energetic Californian had spent plenty of time with automotive clients in Detroit over the years. He had known many Ford executives, but he especially hit it off with Farley. They were both UCLA alums. Stevenson, though, was mostly a truck guy, who owned multiple pickups and, in his formative college years, would tool around the west side of Los Angeles in his cousin's truck—an early-2000s black Ford Lightning, a high-performance pickup truck with a massive, supercharged V-8 engine. It was no off-roader: the low-to-the-ground rocket enjoyed a cult following for a few years among urban cowboys looking to make noise and draw looks around town on weekends. Ford phased out the Lightning a few years later, a fate not uncommon for specialty models.

The Lightning had been on Stevenson's mind when he reached out to Farley in 2017. Stevenson wanted to see car companies go electric much more aggressively and thought an electric truck would be a good idea. He also had an ulterior motive: his firm was invested in Proterra Inc.,² an electric-bus startup that wanted to build lightweight municipal buses and anchor them with massive battery packs placed under the floor.

Stevenson figured he might be able to persuade Farley to consider a limited-edition electric pickup truck—make a few thousand of them, priced over \$100,000. Stevenson knew Farley would be worried about whether a battery could really provide enough range for a large pickup, so he had his pitch ready. I'm 100 percent certain that if you can put enough kilowatt-hours of batteries under a 30,000-pound municipal bus," Stevenson told Farley, "...you can build one that would give you the range and ruggedness you'd need for the F-150."

² Proterra has morphed into a battery manufacturer, primarily for road vehicles. <https://proterra.com/>

Plus, Stevenson played up the serendipity of the Lightning name being resurrected for an EV. "The F-150 Lightning? For an electric truck? Are you kidding me?" Stevenson told Farley. "This is such a no-brainer. You own this trademark already."

Ford had a window, Stevenson noted, before Tesla would be coming out with an electric truck. "Just source some battery packs, put them under an F-150, and get them out as fast as humanly possible. This is doable."

Farley was intrigued enough to grab some Team Edison members and head off to Proterra's Bay Area facility to take a look.

Farley would later call Ford's visit to Proterra "a huge light-bulb moment." When he got back to Dearborn, he grabbed Sherif Markaby, who was running Ford's EV programs at the time. "Sherif, we're gonna have to do an F-150 Lightning," he told him. Markaby responded: "Yep."

The Ford team got to work right away and didn't stray far from Stevenson's advice. Engineers never considered starting with a from-scratch platform, like GM did. They would never have been able to sink the money into a stand-alone platform, which would take longer and add hundreds of millions of dollars in cost when there was plenty of uncertainty about future demand.

Ford effectively took an engineering shortcut with this project. Ford makes nearly 1 million internal-combustion F-150s annually; it's been the best-selling US vehicle for decades running. The most cost-effective way to electrify the truck would be to strip out the engine, transmission, exhaust system, and other guts, and insert a big battery pack and connect it to motors. Use what you have. Only change what you need to.

A few months later, CEO Jim Hackett wandered over to Ford's engineering center, around the corner from corporate headquarters, to see what his team was cooking up. Hackett watched bemused as a prototype electric F-150 crawled out of a side door and into the parking lot.

"Do you want to drive this around?" one of the engineers asked the CEO. The prototype looked like a regular F-150, but with a mess of cords and wires protruding from under the hood. "They basically jury-rigged it so it would work as an electric. It was a mess-like your worst teenage car, minus the beer cans," Hackett recalled.

Hackett was tentative. He climbed in and, for a few minutes, hesitated to take the steering wheel, worried he might unplug something or short it out. "I'm sitting there treating this thing like it's crystal. And they tell me, 'You gotta hit it.' So I took off." The instant thrust of the dual electric motors pinned the six-foot-three-inch former University of Michigan lineman back against his seat.

"I turned to the engineer and said, 'I used to own a turbo Porsche Cayenne, and this is better than that,'" Hackett recalled. "And this is the frickin' prototype!" Hackett went up to his office, across the hall from Bill Ford, and gushed to the executive chairman about his experience. The Ford scion just smiled. The idea of creating a credible electric version of Ford's biggest money-maker was an inviting one for the executive.

Hackett and his team would reference a forthcoming "Mustang-inspired SUV" but didn't divulge that it would carry the iconic name and the pony. Lightning was still under wraps.

Final author's comment: The Ford Mustang Mach-E was first unveiled in November 2019 and began deliveries to customers in late 2020. Ford shipped the first F-150 Lightning in 2022. Regarding the Lightning, there was a significant recall and production pause. See the excerpt below for details.

The National Highway Traffic Safety Administration (NHTSA) published several documents yesterday regarding the recall of certain Ford F-150 Lightning pickups that may be fitted with faulty high-voltage battery packs.³

When Ford became aware of the problem (see below) it halted production for slightly over a month to investigate and resolve it.

According to the federal agency, “when the vehicle’s high voltage battery is at a high state of charge, the vehicle could experience an internal short circuit in the battery due to production process deviations at the supplier. The short circuit could result in a fire,”

The battery packs were manufactured by SK Battery America in Georgia and fitted to 2023 Ford F-150 Lightnings assembled between January 20 and January 26, 2023. As per the NHTSA, the owners of the affected vehicles were notified by Ford and directed to a nearby dealer, where the entire battery pack was replaced free of charge.

Final author's comment (for Part 2): I thought I had better follow up on the above excerpt with some additional information. SK Battery America is a division of the Korean specialty battery manufacturer, SK-on. Both the parent company and the U.S. division appear to only manufacture vehicular batteries. However, with new battery designs in new vehicles, process issues pop up from time to time, and the narrative above describes the proper process to manage these anomalies per the NHTSA and the auto industry in general. For more information, go through the links below, and in Reference 3 below.

<https://www.skbatteryamerica.com/main/main.html>

<http://eng.sk-on.com/company/overview.asp>

³ Iulian Dnistran, INSIDEEVs, “Ford F-150 Lightning Recall That Stopped Production,” Mar 22, 2023, <https://insideevs.com/news/658422/ford-f150-lightning-recall-documents-reveal-cause/>