



The State of Charge with EVs

AN IN-DEPTH VIEW INSIDE CURRENT ISSUES
IN THE AUTOMOTIVE INDUSTRY

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BACK TO THE FUTURE

Remember the headlines in 2015-2020? By now, we were supposed to see a Tesla in every driveway, abandoned gas stations overrun by weeds, and driverless commuter pods shuttling us from coast to coast. Volvo arguably put the deepest stake in the ground with their “no ifs, ands, or buts” commitment to full electrification by 2030. Ford, GM, VW, and others soon followed with similar pledges.

After a decade of hype, in 2024, EVs made up just 8% of U.S. new car sales. That was up 7.3% over 2023 but a far cry from the 47% surge from 2022 through 2023. Ford has paused the F-150 Lightning production and has halted plans for a three-row electric SUV. Volkswagen may face plant closures for the first time. Even Volvo has located a few ifs, and a but or two, announcing that it has “adjusted our electrification ambitions,” forecasting a product mix of 90% plug-

in hybrid or BEVs by 2030. As shared in a January 27 Automotive News article, OEMs from Porsche to Subaru have delayed launches or revised targets. The EV curve hasn’t crashed – but it is correcting.

This shift wasn’t entirely unexpected. For years, automakers announced bold climate commitments and outspent each other on EV development and battery capacity—often driven more by competitive pressure and policy incentives than by deep consumer insight. Now, the market is recalibrating as reality sets in, and buyers signal what they want...what they really, really, want.

What happened? And more importantly, where do we go from here?



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The Headwinds

If you're wondering, "Gee, why hasn't everyone gone electric yet?" First, remember when Bob Dylan tried it? Some people never forgave him. Then, consider the following.

POLICY IS PENDULUM-DRIVEN

The Inflation Reduction Act poured a trillion-plus into climate investment. But that was two elections ago. What one administration sets in motion, the next may pause or redirect. We're certainly seeing that play out now. Policy momentum matters—but it's not guaranteed.

RAW MATERIAL SOURCING ISSUES

Let's talk rare earth minerals. Specifically, is there enough supply in the world to create a zero-emissions mobility nirvana? (Hint: probably not.) And, the true cost of extraction? There's no way around it: mining of any sort is a dirty, dangerous, earth-scarring process. What is our appetite for solving one sustainability issue while creating another?

Finally, let's talk honestly about where this stuff comes from. In brief, it's largely from developing and/or totalitarian regions with little regard for environmental responsibility, child labor, or human rights. We cannot pretend that one sort of mining (coal, oil, natural gas, or uranium) is somehow more "virtuous" than another (nickel, lithium, cobalt, or manganese). It isn't. Sadly, energy is never clean. But the modern world demands more of it every day. So, we're stuck.

POWER GRID READINESS

This one's a toss-up—it could just as easily land in the Tailwinds section. Some experts argue that the nation's utilities are well-positioned to handle widespread EV adoption. Others caution that the additional load—especially from high-capacity batteries (a 100-kWh charge can rival an entire household's daily use)—could strain an already aging infrastructure.

For now, it's fair to ask how we transition to an all-electric future when some regions already struggle to meet demand during peak summer months. Until those concerns are addressed at scale, grid readiness remains a headwind.





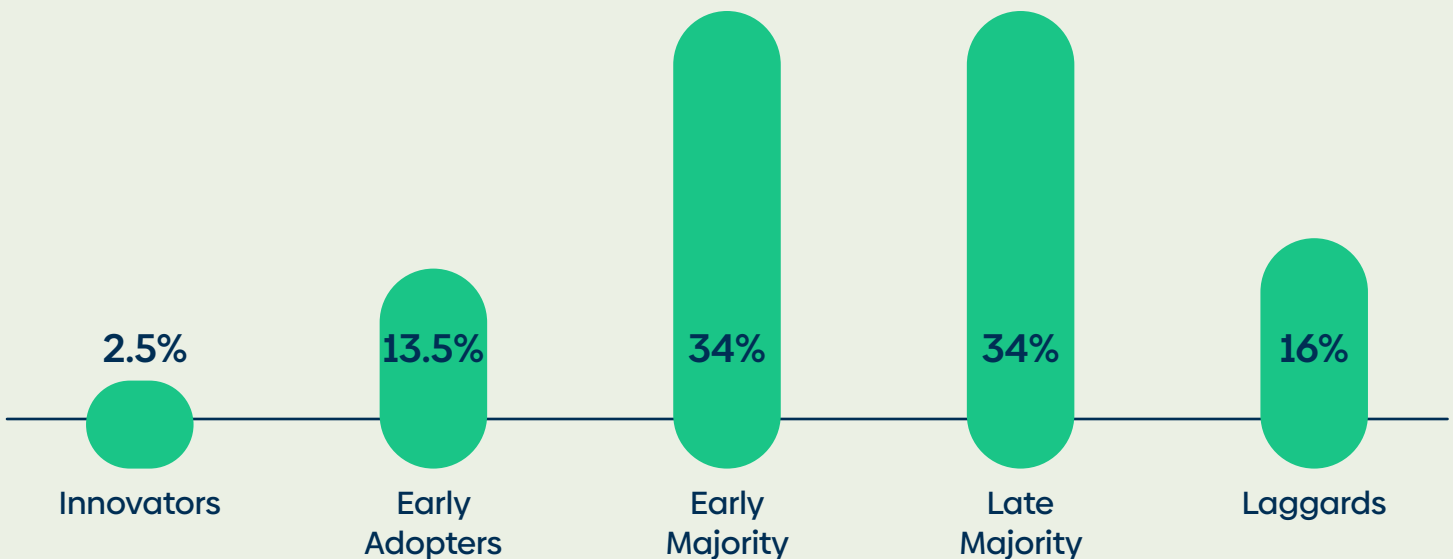
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CONSUMER ADOPTION/PUSHBACK

If you've taken a marketing class, you learned the product adoption lifecycle. This nearly inviolable business rule describes the process of introducing a truly new product into the marketplace. In short, the Innovators are easy. They want the newest, coolest thing regardless of cost or reliability—and have the cash to take a flyer on it. These are your friends who preordered the first Prius, camped out for the original iPhone, or turned their spare room into a Peloton studio. The Early Adopters take a bit longer but hop into the pool not long after—and once the price drops a bit.

Now, remember where EV adoption in the US stands today—about 8%. That's squarely between Innovators and Early Adopters. The next frontier? The Early Majority. And reaching them is both slower and more resource intensive. This group typically needs more reassurance, more proof-of-concept, and more price accessibility before making a change—especially when it means stepping away from the familiar.

PRODUCT ADOPTION LIFECYCLE



In a category with ultra-high development costs like automotive, meaningful profitability often doesn't emerge until you reach those middle stages of adoption. That's not a failure, it's just where we are on the curve. And bridging that gap is the slow and expensive work ahead.



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STILL-HIGH ACQUISITION COST

Despite more than a decade of hot and cold running subsidies, the MSRP of an average EV still runs 10-25% higher than its ICE counterpart. With federal tax credits of \$4,000-\$7,500 likely phasing out for many models, affordability may get worse. (That said, market forces have a way of leveling the field—so my personal theory is that MSRPs may suddenly drop by...oh, \$4,000-\$7,500. Stay tuned.)

THE SUSTAINABILITY (OVER)PROMISE

There's a bit of a gap between the reality of "green" cars and the all-in environmental cost of an EV. Apart from the sourcing issues outlined earlier, few people consider that EVs—due primarily to their excessive weight - are much harder on brakes, tires, suspension components, and even road surfaces than their combustion counterparts. And what are all those things (not to mention those statuesque wind turbines blanketing the country) made from and lubricated with? Yep—fossil fuels. For the foreseeable future at least, drilling is here to stay.

Then there's the half-ton high-voltage battery. At end-of-life, it's a whopper of a repair order—think five figures. And for batteries turned in, there's still no economically or environmentally viable plan to dispose or recycle them. "Downcycling" exists, but some estimates suggest more than 90% of batteries ultimately wind up in landfills, creating new hazards ranging from toxic leaks to fires. Others are shipped abroad for "recycling."

THE CUSTOMER

Let's not forget the most important stakeholder in all of this: the buyer. Governments can shape policy, incentivize investment, and even mandate behavior - but the buyer's wallet gets the final say. EVs are one option among several on the market, and that's a good thing. Choice signals maturity in the market, not weakness. Which brings us to the tailwinds driving this evolution forward.



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The Tailwinds

“Porsche is the last bastion of cars for petrolheads. When they start making electric cars, you realise the world really is changing.”

- Chris Harris

British journalist and motorsports racing driver.

MOMENTUM

For years, we stood in front of automotive training classrooms saying, “Get ready...electric vehicles are coming, like it or not.” That tone has shifted. They’re not just coming, they’re here. While pure battery-electric vehicles still represent under 10% of the U.S. market, that slice is nothing to dismiss. Consider brands like Patagonia, Dyson, or Lululemon—each holds roughly that same share in their respective categories, and they’re thriving. There’s real value in a focused, well-served niche—especially when that niche is part of an \$800 billion industry.

EVs shed their niche status a while ago. They don’t even turn heads on the street anymore—and that’s kind of the point. As one ex-COO of a luxury OEM said at a recent industry panel, “The Tesla Model Y didn’t become the world’s top-selling car because of government subsidies. People buy it because it’s a great car.” That’s the evolution: when something stops being new and just becomes normal.

HYBRIDS

What if I told you that you could do 90% of your daily driving for free? The average American clocks about 35 miles a day. Even a modest mild-hybrid can squeeze out 25+ miles of all-electric grocery-getting, errand-running, and kid-hauling before switching over to gas. Plug-in hybrid electric vehicles (PHEV) offer even more range – and when it’s time for longer, harder miles, they quietly hand things over to pistons, crankshafts, and dino-juice. And there you are—the best of both worlds!

One warning: Hybrids can also be the worst of both worlds. According to Consumer Reports, PHEVs have about 70% more problems on average than ICE vehicles. That said, conventional “mild” hybrids have achieved roughly equal reliability ratings as ICE vehicles.

GENERATIONAL CHANGE

Millennials (born 1981-1996) are now rising to middle management with mortgages, kids, responsibilities, and paychecks to match. Along the way, they formed their views on the world, like the need to take care of the planet, a “new consumerism” defined more by experiences than stuff, a desire for work-life balance, and a need to do meaningful work.

That mindset is showing up on the sales floor. While their predecessors focused on horsepower, MPG, and cargo capacity, younger buyers are more apt to ask about CO2 emission, sustainable materials, and ethical sourcing. And while it’s always risky to overgeneralize, many next-gen buyers see EVs less as a powertrain choice and more as a way forward to a sustainable planet. (Some are even rethinking car ownership altogether – hello, “Generation Uber.”)



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TOO BIG TO FAIL

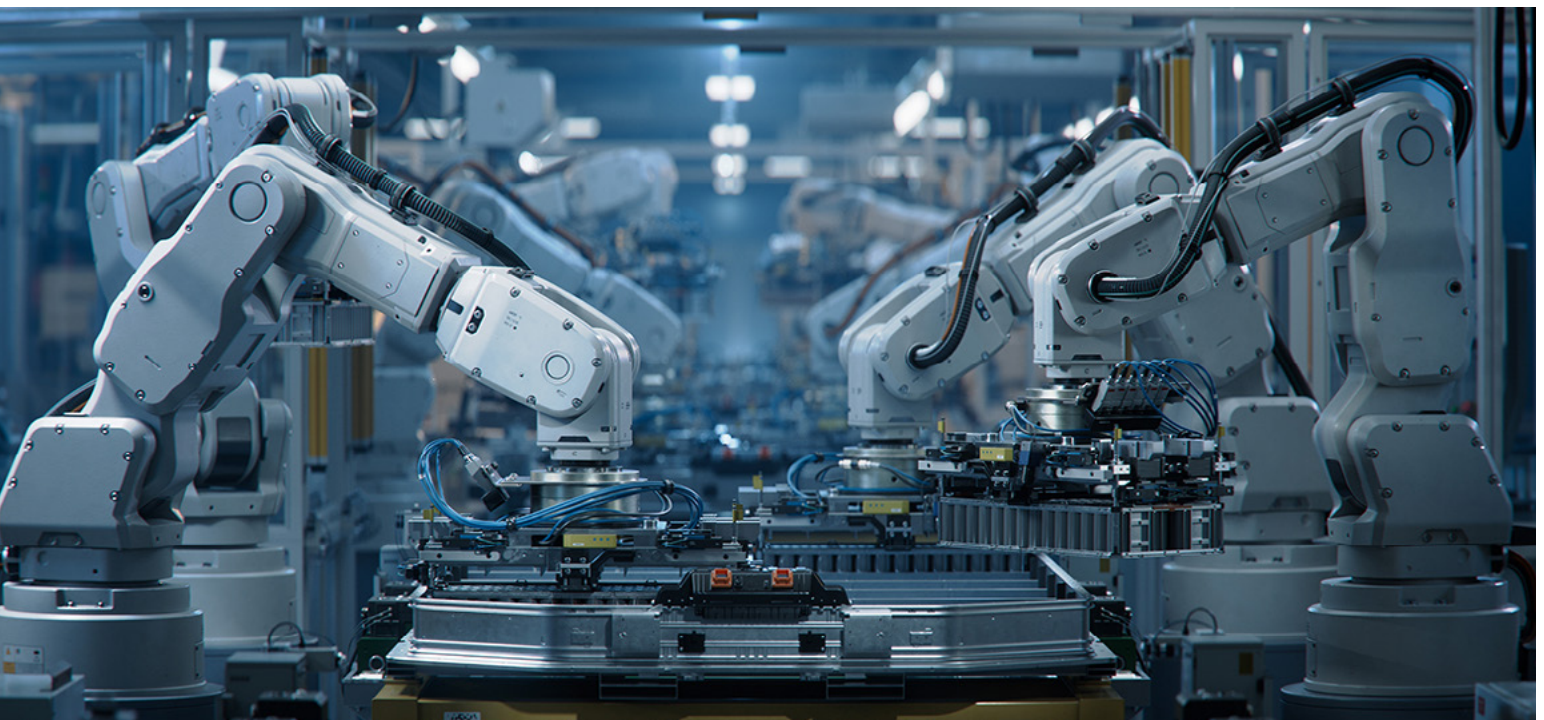
During the financial crisis of 2007-2008, the term “too big to fail” gained currency (pun intended). It described the theory that certain corporations—particularly banks and other financial institutions—are so large and interconnected that their collapse would be cataclysmic. Put simply, these institutions vanishing—along with much of their depositors’ money—would wreak more macro financial havoc than bailing them out. That’s arguably where we’re headed with electrified mobility.

Federal, state, and even local governments have pumped trillions in cash, subsidies, and tax breaks into manufacturing lines, battery plants, charging infrastructure, and more. OEMs have followed with tens of billions in product development, tooling, training, and real estate. Are some of those investments on ice right now? Yep. But there are too many corporate, private equity, and taxpayer dollars already committed. Nobody’s walking away from this.

MOORE’S LAW

In 1965, Intel co-founder Gordon Moore observed that the number of transistors in an integrated circuit doubles roughly every two years – a trend that symbolizes the inexorable pace of technology. EVs are following a similar trajectory. In just a few short years, battery chemistry has changed from nickel-cadmium (not far removed from the AAA Duracell in your TV remote) to lithium-ion to lithium-sulfur and sodium ion...and now whispers of graphene, promising the holy grail of 500-mile range vehicles. With each new development, batteries get denser, lighter, safer, cooler, and more sustainable/reclaimable.

Meanwhile, several manufacturers, including Ford, Stellantis, VW, Scout, and several Chinese OEMs, are working on a new hybrid concept called EREVs—extended-range electric vehicles. These plug-ins lengthen an EV’s range by adding a small internal combustion engine that doesn’t drive the wheels but instead acts as an onboard generator to recharge the battery. This ball game is far from over. In many ways, we’re in the first quarter. (Late Adopters and Laggards, rejoice! Your time is coming.)





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WHAT DOES IT ALL MEAN?

The lifeblood of dealership profitability is twofold—unit sales and service retention.

On the sales side, the focus is Days' Supply: how quickly a dealer can move inventory, since they own and thus finance every car from the time it leaves the port until it's sold. In service, profitability comes down to UIO (Units in Operation: how many cars their sales team has sold into their market area) and Retention (how many UIOs the dealer can keep as service clients, and for how long). Thus, when the dealer stocks inventory that customers don't want, the entire model starts to wobble.

Layer on the enormous investments required to support electrification including but not limited to sales and technician training, special tooling, new high-capacity lifts to handle extra-heavy EVs, and Level 2/Level 3 charging stations, and it's easy to understand why some dealers are tapping the brakes. This has all been driven by a combination of "the promise/threat of an electrified future" plus OEM demands, sometimes subsidized by the manufacturer, but mostly not. Result: Dealers are now digging in their heels a bit. Outside of a few EV-hot markets (looking at you, SoCal), the return on those investments is debatable.

All that said, dealers who fully support EVs - as part of a broad product portfolio - are beginning to emerge as winners. Take Tim Hovik, owner/operator of San Tan Ford in Gilbert, AZ and Chairman of Ford Motor Company's National Dealer Council. "We didn't look at EVs as unicorns. We approached it as just another powertrain in our portfolio, and I think that mindset gave us a chance to be successful." And he's not wrong—San Tan Ford sold 137 EVs in August 2024. At the time, no other franchised dealer in the country had cracked 100 in a single month.

“ We didn't look at EVs as unicorns. We approached it as just another powertrain in our portfolio. ”



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Looking Ahead (a.k.a. Bold Predictions)

I started this piece by looking at a few predictions that didn't pan out. So, what the heck, in the spirit of fair play, here are a few bold calls I'll toss against the recharging wall.

PURE EVS MAY NOT TAKE THE WHOLE PIE

According to a recent report from JD Power, more than half of current EV owners said they were influenced by federal tax credits and other incentives – swaying their decision more than purchase price or lease offer. Message: absent heavy subsidies, consumer demand is rather weak. A December 2024 Automotive News article noted that Mazda Motor Company initially expected EVs would account for 25-40% of global sales by 2030 (a number much lower than many EV zealots projected). Mazda's CEO has since indicated that figure may dial back, stating: "It is going to be a little downward compared to 25 percent. I'm sure battery EVs will increase, but the pace of penetration will slow a little."

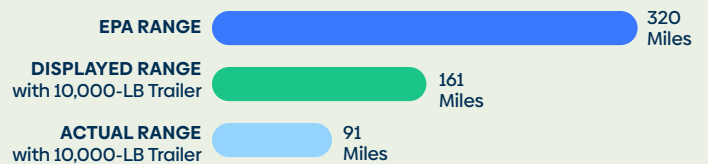
FOR SOME, IT'S JUST NOT PRACTICAL – YET

There's a reason the Ford F-150 has been the top-selling vehicle for decades. And while the F-150 Lightning has its fans, it hasn't yet proven itself as a go-to solution. EV work trucks simply don't have the range or hauling capacity to get the job done. The news is even worse when towing travel trailers, boats, toy haulers, and the other recreational playthings Americans love.

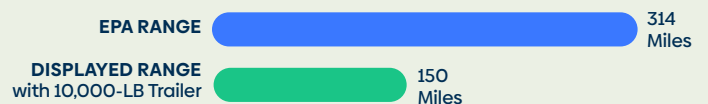
A 2023 Consumer Reports test put both the Lightning and the Rivian R1T through a real-world scenario: pulling a 10,000-pound trailer at moderate speed on a mostly flat loop. The results? The Lightning, which carries an EPA range of 320 miles when unladen,

recalculated its projected range to 161 miles once it sensed the trailer. But the actual range achieved was just 91 miles. The Rivian, with a similar EPA range of 314 miles, performed about the same—dropping to 150 miles displayed and delivering only 85. So yes, EV work trucks are making progress—but they're not quite there yet. (And remember, this was a flat test loop. The results get even worse when you add a little terrain.)

Ford F-150 Lightning (Extended Range)



Rivian R1T (Large Battery)





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DEMAND WILL ONLY POWER UP WHEN THE GRID DOES

All these electrons have to come from somewhere, and despite coal/oil/natural gas/nuclear plants operating at full capacity and additional wind/solar coming online daily, we struggle to power our *current* lifestyle. Witness California's ill-timed 2024 announcement of "rolling brownouts" and request that EV owners stop charging their cars every night--the same week they announced a plan to mandate electric-only car sales beginning in 2035.

So, can we get there? Yes and no. Theoretically, power generation is keeping pace with the EV transition. Realistically, the trouble comes when everyone decides to plug in at once (e.g., all EV owners in a given time zone arrive home from work, plug in their car, turn on the lights, crank the home air conditioning, run the washing machine, turn on the ballgame, etc.). To handle that, utilities have their work cut out updating an increasingly patchwork power grid, introducing load management, building improvements in V2G (vehicle-to-grid) integration, and a lot more. Message: The current slowdown in EV demand may be just what the doctor ordered, buying time for some much-needed upgrades and innovation.

THE ALTERNATIVE FUEL BATTLE ISN'T OVER

Hydrogen fuel cell technology is currently where EVs were a decade or two ago – full of promise but facing steep hurdles. High development costs limited fueling infrastructure, and tricky storage/transportation issues are still in play. But in heavy-duty applications such as buses, long-haul trucking, and shipping (which, for the record, generates more global greenhouse gas emissions than aviation), hydrogen's potential is hard to ignore. Best of all, what's not to like about the exhaust by-product: water?

And then there's e-fuel, a synthetic fossil fuel that's carbon-neutral and burns in an unmodified internal combustion engine. It's nowhere near mass commercialization yet, but it works. And if we're talking about a way to keep the world's 1.3 billion existing vehicles running cleanly, it's a door worth keeping open.



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THE CATEGORY 5 “CLIMATE CRISIS” GETS DOWNGRADED TO A TROPICAL STORM.

Every decade or so, we are warned of a looming, existential environmental catastrophe that must be solved within a decade. I’m old enough to remember hearing in strenuous terms that by the 2020s, New York City would be covered by (wait for it...) an ice sheet due to irreversible global cooling. Earnest-looking scientists and colorful bar charts proved it. Well, it’s 2025 and Brooklyn is not a skating rink.

Do we have issues? Absolutely. But as a wise colleague said, “I have great confidence in humanity’s ability to solve slow-moving challenges.” Climate change is exactly that - a challenge requiring resolve, not panic. We’ll figure this out and adapt to the parts we can’t. We already are.

DEALERS WILL BE FINE

Fred Koller opened the first dedicated car dealership in 1889 in Reading, Pennsylvania, selling cars made in Cleveland, Ohio. In 136 years since, the US franchised dealer system has outlasted two world wars, a depression, multiple recessions, the internet, several financial crises, 9/11, COVID lockdowns, electrification, and 24 US Presidents. Dealership owners are crafty, intelligent, and adaptive businesspeople. They aren’t going anywhere.

In fact, this could usher in a golden age of automotive service. With multiple powertrains on the road and ever-increasing technical sophistication, highly trained service technicians will be more in demand than ever. Imagine the car dealership of the near future with the talent and tooling to service everything from a vintage diesel pickup truck to a high-octane European sports car, fully electric SUV, and even a hydrogen-burning crossover yet to be commercialized. That’s the kind of transformation that doesn’t just survive, it thrives. (And yes, we’ll need more young people to enter the trades. But that’s a topic for another day.) 



An eFuel pilot plant partnership between Porsche AG and HIF Fuels in persistently windy Punta Arenas, Chile.



LET’S TALK

At TiER1, we’re helping automotive OEMs and their dealer networks learn, adapt, and thrive in an uncertain future. [Connect with one of our industry experts.](#)