

CDK GLOBAL[®]

The Charged Truth About Electric Vehicles

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Introduction

The road to electrification has been repeatedly foretold by industry watchers. Yet, significant questions remain about how this transformation will take place, how long it will take and what will accelerate — or just as importantly, put the brakes on — consumer adoption.

We surveyed people who recently purchased new vehicles (including electric vehicles) as well as those planning to buy in the next one to two years.

Some respondents also revealed a significant interest in hybrids as a bridge from internal combustion engines (ICEs) to electrification. Note that this was well before the run-up in gasoline prices during Summer 2022 that put this conversation in the spotlight.

As the automotive retail industry prepares to go electric, this study reveals what needs to be addressed for today's customer, and whether or not they are truly ready to plug in.

1,141

**respondents shed
new light on:**



What is holding some of them back from moving to fully electric vehicles (EVs, also called battery-operated electric vehicles or BEVs)

What moved the needle far enough for some of them to purchase an EV

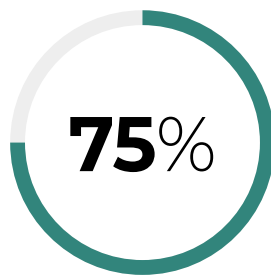
Who Is the EV Buyer?

What makes those who pull the trigger to go electric different than your average car buyer?

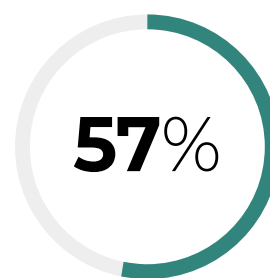
OF THOSE WE SURVEYED:



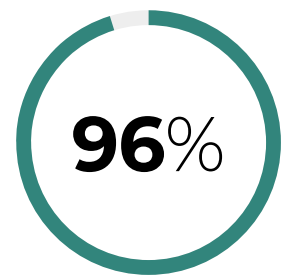
HAVE A BACHELOR'S DEGREE OR HIGHER LEVEL OF EDUCATION



ARE UNDER THE AGE OF 45



HAVE AN ANNUAL INCOME OF OVER \$100,000

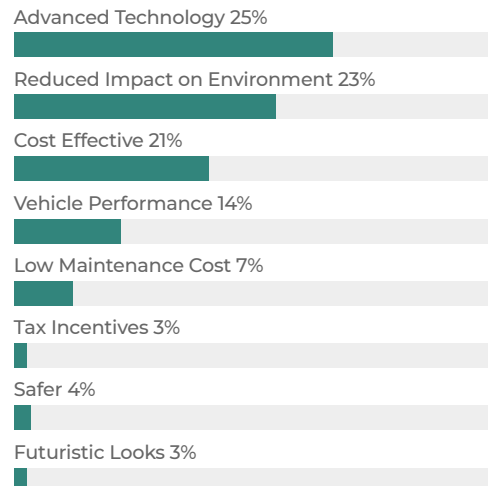


ARE EMPLOYED FULL TIME

Tech Trumps Environment

Many argue that an electric vehicle is far and away the best solution for combating harmful emissions on our roads. But for EV buyers, the technology being packed into these new models is the top motivator, with a desire to reduce impact on the environment coming in second.

MOTIVATORS

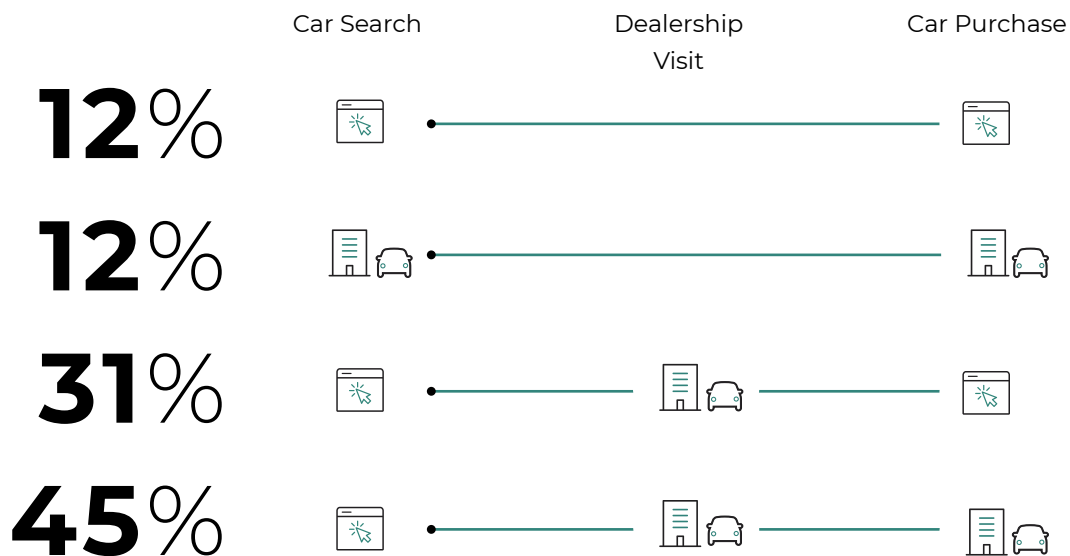


Purchase Journey

When it's time to start the shopping process, nine out of ten EV buyers start online. But only 12% said they completed the entire process digitally without visiting a dealer — the same percentage of respondents as those who did the exact opposite by completing the entire process, from research to purchase, in person at the dealership.

Both types of shoppers, however, are in the minority. As we've seen become the norm across the automotive retail spectrum, the vast majority of EV buyers (76%) mix online shopping with physical interaction at the dealership, with 45% visiting the dealer to finish the sale.

OVERALL PURCHASE JOURNEY OF EV OWNERS

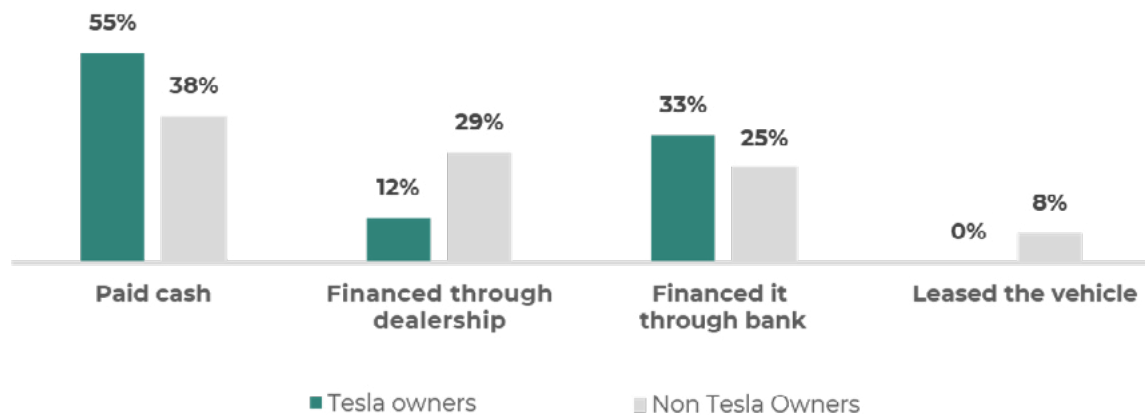


How They Buy

A full 100% of those we surveyed bought a new EV versus a used one, and hardly anybody leased their vehicle. This reinforces the perception that EV buyers have an “all-in” attitude, since one of the primary benefits of leasing any vehicle is being able to try out a model you’re not sure will be with you for the long haul. Their apparent certainty runs counter to the fact that batteries of early EV models have been shown to degrade over time, making resale value relatively unknown.

A surprising number of buyers paid cash for their EV: 55% of Tesla buyers and 38% of non-Tesla buyers. This may be another sign of an “all-in” attitude — cash says commitment in a way that credit does not. Why Tesla buyers paid cash more often than non-Tesla buyers could be due to more enticing financing offers from traditional OEMs. Only 12% of Tesla buyers financed through the manufacturer, while 29% of non-Tesla buyers financed through their dealership. Only 33% of Tesla buyers financed through the bank, while 25% of non-Tesla buyers financed through the bank. Finally, 0% of Tesla buyers leased their vehicle, while 8% of non-Tesla buyers leased their vehicle.

HOW EV OWNERS PURCHASED THEIR CARS



Category Over Brand

We know the EV buyer is enthusiastic about their transportation: 98% of owners make the electric car their primary vehicle, and that’s with 82% of them owning at least one other car.

Their enthusiasm, however, doesn’t seem to carry over to which brand the EV buyer takes home. Among non-Tesla buyers, Ford, Audi and BMW were most popular — but not by a wide margin. Specific responses from those surveyed were more informative. In the words of one Gen X buyer:

“Yes, the EV buyer is unique and excited. But there is a countering force at play that could make a wholesale transition for the industry a fraught experience.”



“I have no loyalty when it comes to EV, because electric is a new kind of unproven thing. It’s a new market so it’s anybody’s game. Having said that, I do have brand loyalty when it comes to gasoline vehicles.”

EV Enthusiasm Versus EV Hesitance

Headlines shout about the inevitability of an all-EV future. But there is a lot of work to do today before we get there. As cited earlier, EV purchasers — 9.2% of those surveyed — are enthusiastic about the technology, with a net promoter score of 69. But at the other end of the spectrum, hybrid owners have an NPS of -3.

That's a remarkable divide. And it's just one of our findings showing that post-purchase, EV owners are very happy with their decisions, while those who purchased a hybrid are nowhere near as satisfied. This could be because among hybrid buyers, the practical aspects of the vehicle seem to be the primary purchasing motivator. And practicality may simply be too boring a reason to merit extolling their purchase to anybody else.

This negativity of non-EV buyers is important and extreme. As we look at those who either bought or are shopping for an ICE vehicle, nearly half (46%) **don't plan to buy an electric vehicle now or in the foreseeable future.**

46%

of ICE shoppers don't plan to buy an electric vehicle now or in the foreseeable future.



Under Consideration

Notably, 26% of ICE shoppers considered an electric vehicle even if they didn't eventually buy one for their next vehicle. What put EVs into the consideration set for these shoppers? **88% of this group** pointed to the dealer's sales representative as introducing them to the option. This runs contrary to the commonly held belief that Sales staff may try to persuade shoppers away from EVs, for which our study found no substantiation.

Even a third (33%) of EV-resistant shoppers who did not consider an EV said their dealer sales representative mentioned the option to them. The sales representative's advocacy for EVs may be seen more clearly under these circumstances, when one considers the high volume of

total vehicle sales made up of pickups, large SUVs and crossovers — categories for which there were no EV options at the time of this survey.

What factors are most important to those who considered EVs but who nonetheless bought a traditional ICE vehicle this time around? They are most interested in advanced technology (24%), while those planning to buy an EV in the next one to two years are focused on cost effectiveness (35%) and environmental friendliness (34%). This shows that ICE purchasers who considered EVs are closely aligned with the views of EV buyers, since the latter group pointed to technology first as a motivator, and to the environment as a close second.

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88%

of this group pointed to the dealer's sales representative as introducing them to the option.



What's Holding People Back?

There has been a lot of discussion in the media about the shortcomings of EVs compared to traditional ICE, hybrid or plug-in hybrid vehicles. Most of that negativity has been focused on one factor: range — though the amount of time it takes to recharge has also surfaced as a top threat to EV adoption.

But in our survey, we found those who were interested in EVs but bought a different powertrain had other concerns that trumped both range anxiety and the time to recharge.



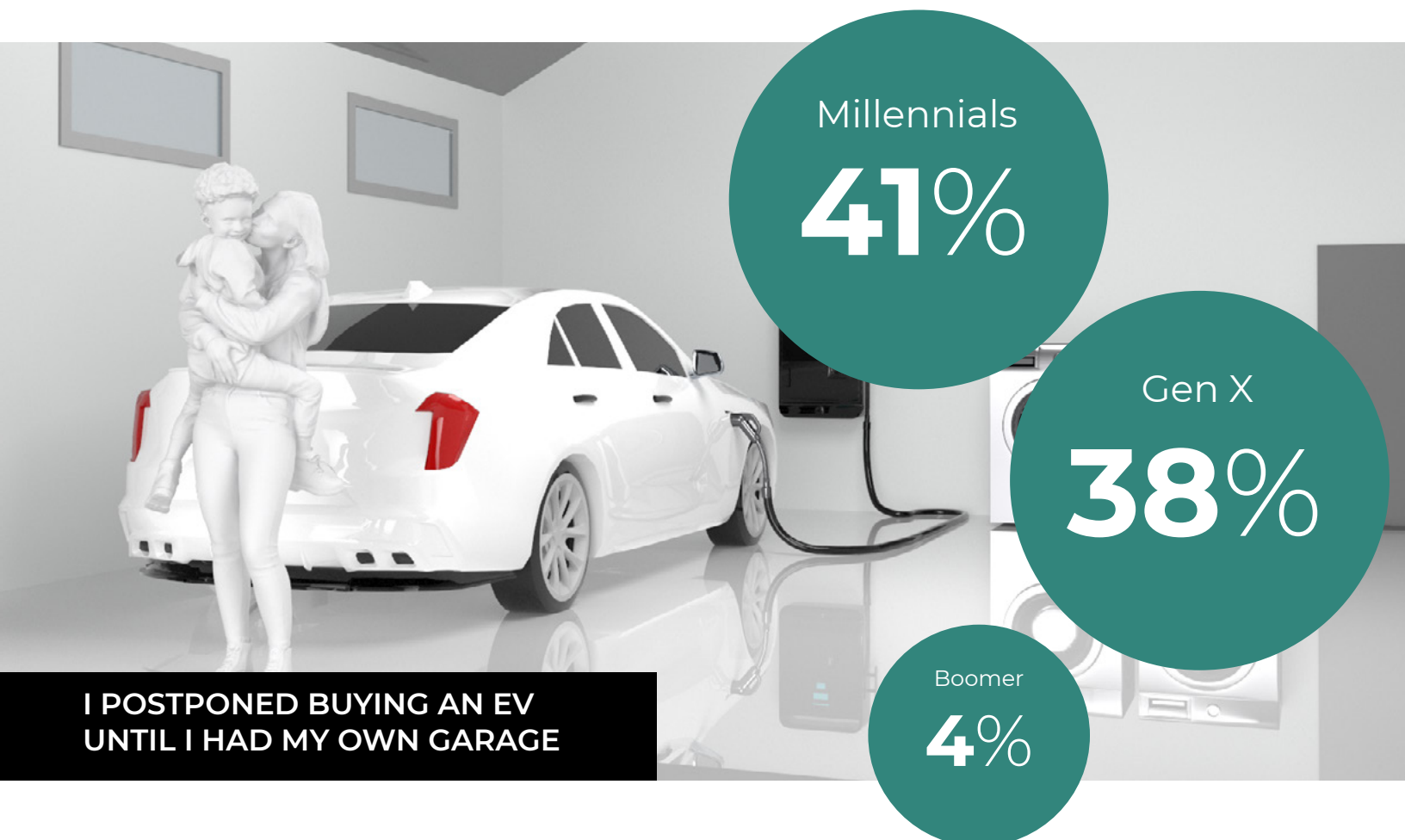
Charge Accessibility

The *where*, it turns out, is the single biggest concern when it comes to charging an EV. The practical aspect of living in an apartment without charging options was the single biggest constraint for these shoppers; lack of charging networks was a distant second. This concern is echoed by the EV buyers we surveyed: **40% postponed buying an EV until they had their own garage.**

This factor is complicated by the housing market, which is making it harder for younger generations to move out of rental apartments and into their first home (with a garage to plug into). That's likely why none of our Gen Z respondents — the smallest demographic group

surveyed — waited to own a garage before buying an EV: they either understand they will need to locate public charging, found apartments with charging capabilities, or still live at home.

Uncertainty over where to charge your EV on a daily basis (as well as on longer road trips) is something an OEM can't battle on its own by simply building vehicles with greater range. These infrastructure concerns will only be answered by a concerted effort among automakers, the energy industry, and government entities on local and national levels.



Money Matters

Expense shouldn't be brushed aside either. Currently there are only a few EVs on the market under \$30,000, including the Nissan Leaf and Chevrolet Bolt.

The majority of EVs are built by luxury automakers, including legacy brands like Audi and BMW — along with Tesla, whose cheapest model starts at \$40,000. Mainstream brands like Kia, Volkswagen and Ford have also introduced a number of models, but almost all start around that same \$40,000 mark.

It could be argued that the average price of a new car transaction of any kind is near that same magic number of \$40,000. But remember it's an average: there are dozens of non-EV models, including hybrids, available for far less. A Toyota Corolla hybrid, for example, starts under \$25,000; and even Toyota's plug-in hybrid Prius is under \$30,000.

Despite the high price tag at the onset, the money-saving advantages of an EV in terms of maintenance and fueling remain big pluses for owners and shoppers over the long term.



35%

of those surveyed said their major reason to buy an EV is to save money



Concerns After Purchase

When we asked those who purchased an EV if there were still concerns about range or living arrangements, the answers were quite different. After living with an EV, their top concern was far and away the amount of time it took to charge, followed by the availability of charging networks, and finally range. The apartment issue wasn't as significant, likely because those who made the plunge weren't apartment dwellers or had previously confirmed they could live with an EV under their current circumstances.

“They need to be less expensive and there needs to be a much larger public charging infrastructure. Also, vehicle to house or grid needs to be common.”

The concerns specifically among Tesla owners deserve separate mention. Nearly half of the EV owners we surveyed own the most popular brand, Tesla — and

charging speed was much less of a concern for them. Also, while Tesla's models can trend as more expensive, the company is known for a more robust charging network and longer range than competitors. But perhaps not robust enough for its owners. Lack of charging networks was their leading concern as voiced by more than half of Tesla owners surveyed.

This issue isn't limited to Tesla, of course. We have seen traditional automakers make a number of commitments to invest in third-party charging networks. But recently, these networks have come under scrutiny not just for the relative scarcity of chargers, but for how many (or how few) of them were operational when users went looking for them to recharge on their journeys.

This is more than a practical inconvenience: it's a psychological burden. For drivers of ICE vehicles, the prospect of running out of gas looms lightly even after the little icon illuminates on the gauge cluster; because even if they're on a long stretch of isolated road, they can expect the gallon or two of gas to get them to the next station. But the EV driving experience is different. EV drivers generally plan where they will recharge in advance and use it as a checkpoint along their way. If they arrive and find that charger is down, stress levels can skyrocket.

It's this added mental weight that manufacturers tacitly ask EV buyers to carry, and that will only be reduced to the equivalent of ICE vehicle levels when charging networks are sufficiently robust and reliable.



OVERALL CONCERNS

Charging longer than fueling

69%

Lack of charging networks

60%

EV limited range

56%

Living in apartment

37%

The Dealer Is the Center of the EV Ecosystem

Today there are plenty of car shoppers who are ready to take the EV plunge, and many more who are considering it. But regardless of the brand they choose, their final step of purchasing is still in the hands of the automotive retailer — whether that's the traditional dealer, or the Teslas and Rivians of the world trying to go directly to consumers.

The rise of Tesla and the direct sales model for its lineup has received considerable attention. They have, after all, been successful selling directly — but research suggests their impact on the industry might not be as significant as believed.

Sales Model Preferences

Do EV buyers truly want a different buying experience to go along with a different powertrain?

An overwhelming 94% of those who purchased a non-Tesla EV completed at least one visit to a dealership. But since traditional automakers selling an EV are likely to require a visit to a physical retailer, this isn't conclusive for determining the path forward.

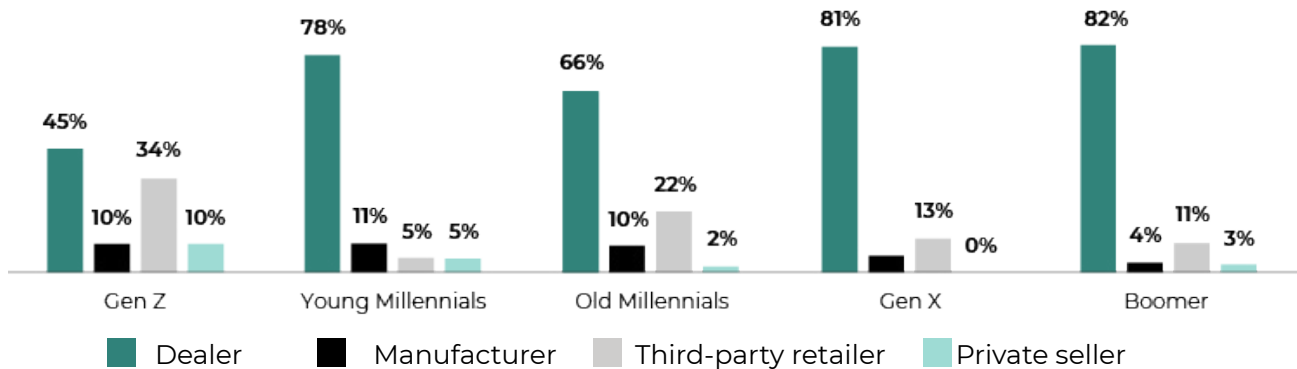
Many of these OEMs have been trying to emulate Tesla's sales process. But should they? The surprise here is that Tesla's direct-to-consumer model might not be perceived by buyers the way the brand intended. 82% of Tesla buyers mention a "dealership" in their shopping process — suggesting **they see the Tesla location as a de facto dealership** despite the brand's sales model.

94%

of those who purchased a non-Tesla EV completed at least one visit to a dealership



WHERE SHOPPERS PLAN TO PURCHASE THEIR ELECTRIC VEHICLE



Additionally, while 18% of those Tesla buyers did complete the purchase entirely online, there is still one key touchpoint compelling the majority to interact in person: the test drive. As we address shortly, the test drive is vitally important to all EV buyers.

In our larger group of shoppers considering EVs, whether new or used, 74% of them planned to buy from a dealer as well, with third parties like Carvana and private sellers entering the conversation.

Most age groups leaned heavily in the dealership direction, with the exception of Gen Z shoppers: only 45% of those that age group (18–25) planned to buy an EV from a dealer, while a significant 34% considering buying from a third-party seller.

But of the group overall, only 7% planned to buy directly from a manufacturer.

Competing With Third-Party Retailers

Dealerships need to pay attention to these stats during this pivotal time, because EV shoppers rely on dealers more than traditional shoppers.

Fewer ICE shoppers plan to buy from the dealership, primarily because of the private seller market that has been a part of the car shopping fabric for decades. EVs have not been on sale in significant numbers long enough to even register with the private market.

This means that while dealers have to compete more with newer third-party retailers, they can continue to emphasize why they are key to the EV buying and owning process. Simply look at one of the most pivotal, tried-and-true parts of the shopping experience: the test drive. It's not just important for the Tesla drivers noted above. It's a key differentiator for dealers overall.

Test Drive Dominance

83% of all EV owners said the test drive was very important, with non-Tesla owners leading all groups at 87%. That's far above the still-robust 75% of ICE shoppers who found the test drive very important to their decision-making process.

Clearly, EV shoppers are curious about just how different these powertrains are to drive. And they should be. Not only do they get instant acceleration and torque from the electric powertrain, but a quieter cabin (thanks to the lack of engine noise) that can be transformative. Studies have shown this silent operation results in drivers who are measurably happier behind the wheel.

RANKING THE IMPORTANCE OF TEST DRIVES

Dealers should embrace these EV shoppers — not the least reason being that they give higher marks when rating the buying experience. The 60+ NPS rating from non-Tesla EV buyers (as compared with a rating of 45 from ICE shoppers in another recent study) should illustrate to dealers that going electric is a positive in many respects.

1st



2nd



3rd



The Go-to for EV Service

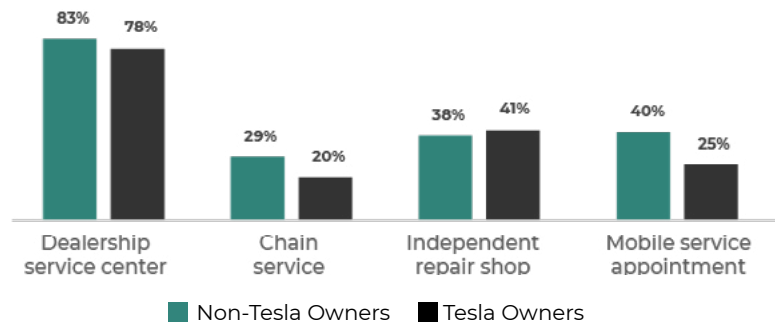
Another advantage to the EV dealership model is the opportunity it brings to the Service department. The unique nature of an electric powertrain, and its newness on the market, has owners concerned about who lays their hands on its precious internal mechanisms. For this reason, 81% of EV owners — **four out of five** — plan to get their vehicles serviced at the dealer.

To fully appreciate the impressiveness of these findings, compare them with the robust service data CDK has collected on ICE owners: just half of the latter group opts for service at the dealership — and when the warranty expires, **83% take their service business elsewhere.**

With double the number of EV owners planning to use dealer service rather than an independent or chain service operator, clearly they put more trust in their dealer's service technicians. One millennial we surveyed sums it up this way:

“If you go to the dealership, you’re just going to have that trained professional. You don’t have to worry about them screwing it up because they’re not going to be learning on the job.”

SERVICE PREFERENCES (BRAND)



4 out of 5
EV owners plan to get their vehicles serviced at the dealer



“If you go to the dealership, you’re just going to have that trained professional. You don’t have to worry about them screwing it up because they’re not going to be learning on the job.”

Service and Parts Opportunities

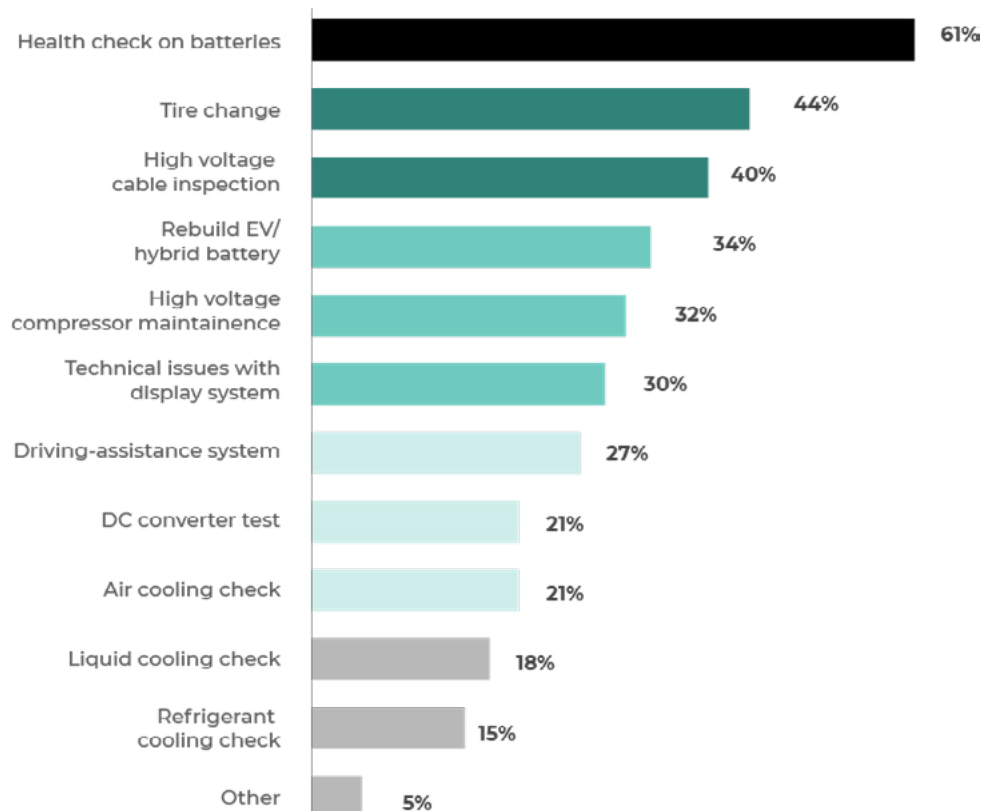
The parts EV owners are most concerned with maintaining generally differ from the age-old worries of ICE owners. EV-specific items like the battery and high-voltage cables top the list; while oil changes (which are not needed for EV motors) are the primary worry for 70% of ICE owners.

One concern both groups have in common is the part that ranks second: tires — though they are significantly more important to EV owners.

Why is that? EV buyers understand the ease of maintenance that comes with their vehicle; they know there won't be oil changes (and their brakes last significantly longer too). Yet, all the pleasing torque an EV delivers to launch them on their way takes its toll where the rubber meets the road. Early EV adopters were surprised at just how fast they wear through tires — especially Tesla owners excited to try out phenomenal 0–60 acceleration times.

Dealers who are aware of this insight and are preparing themselves for the EV transition have already begun focusing on their tire offerings. But the above numbers should help bolster the case for dealers to invest even further in tire stock. Developing an EV-specific service offering around battery health should also be a consideration.

Planning how to treat EV shoppers and owners is important for dealers to consider now, to ensure they remain a focal point throughout the lifetime of the ownership experience. As we look at the timeline for EV adoption, research suggests there is sufficient time for dealers to plan thoughtfully. But they can't delay indefinitely.



One Possible Timeframe for EVs in America

A recurring issue with media coverage about EV adoption is a fixation on a specific year in which EVs will “take over” our roads and showrooms. But while government intervention has accelerated EV adoption in Europe and China, the U.S. has been slower to incentivize these purchases. New legislation may spark new interest but the products themselves need to meet the needs of more drivers.

With the lone exception of Ford and its F-150 Lightning, no other automaker in the U.S. has an EV powertrain as an option in its best-selling models. And even the Lightning’s total sales will pale in comparison to the F-150 gas (and hybrid) offerings over the next few years.

What’s Causing Delays

Part of the reason is supply: There is no end in sight for supply chains to right themselves for any type of vehicles, and the added battery and microchip sourcing needed for EVs makes that issue worse.

Development timelines are another: While we’ve seen nearly every OEM release one EV model, none have converted their wider fleet to EVs yet. This is because typical model development takes five years; so we’re easily a decade away from seeing a non-luxury automaker release EV versions of all its vehicles.

But it’s not just development and supply that are the issue. It’s also the EV hesitance among consumers discussed earlier. The industry needs to focus on chipping away at the large chunk of shoppers who are currently resistant to EVs.

8.4 years
Average time between
car purchases

Source: iSeeCars

12.2 years
Average age of all
cars on road

Source: S&P Global

These shoppers are buying their next gasoline-powered vehicle today, and are five, eight or 12 years away from their next purchase. Over that time, how will OEMs, governments and (yes) dealers convince them that switching to EVs is beneficial? Much depends on this consumer education. Because if these shoppers aren't persuaded, their next purchase won't plug-in either — which would put them 10 to 20 years away from a third purchase that could possibly be an EV, and further delay the date for widespread EV adoption.

The Road Ahead

So, what's the earliest we can expect EVs to finally take over? Presuming that EVs currently make up 4.2% of the market* (and even that number is heavily impacted by OEMs choosing to build more EVs compared to other models with restricted supply), let's project out the rosier scenario: If that number **fully doubled every two years**, we would be 10 years away from a 100% electric fleet.

Ten years seems overly optimistic since it would even outpace Europe's recent (and aggressive) goal of putting a full stop to gasoline-powered vehicle sales in 2035.

Perhaps more realistically (but still optimistic in our outlook), let's say we're **five years behind** Europe's ambitions — a market with over 20% BEV penetration today. That would give us two decades in which U.S. dealers will still need to sell gasoline-powered cars, hybrid or otherwise, in significant numbers. And with the average lifespan of a new vehicle over 12 years, dealers can expect to continue servicing gasoline-powered vehicles well into the 2050s.

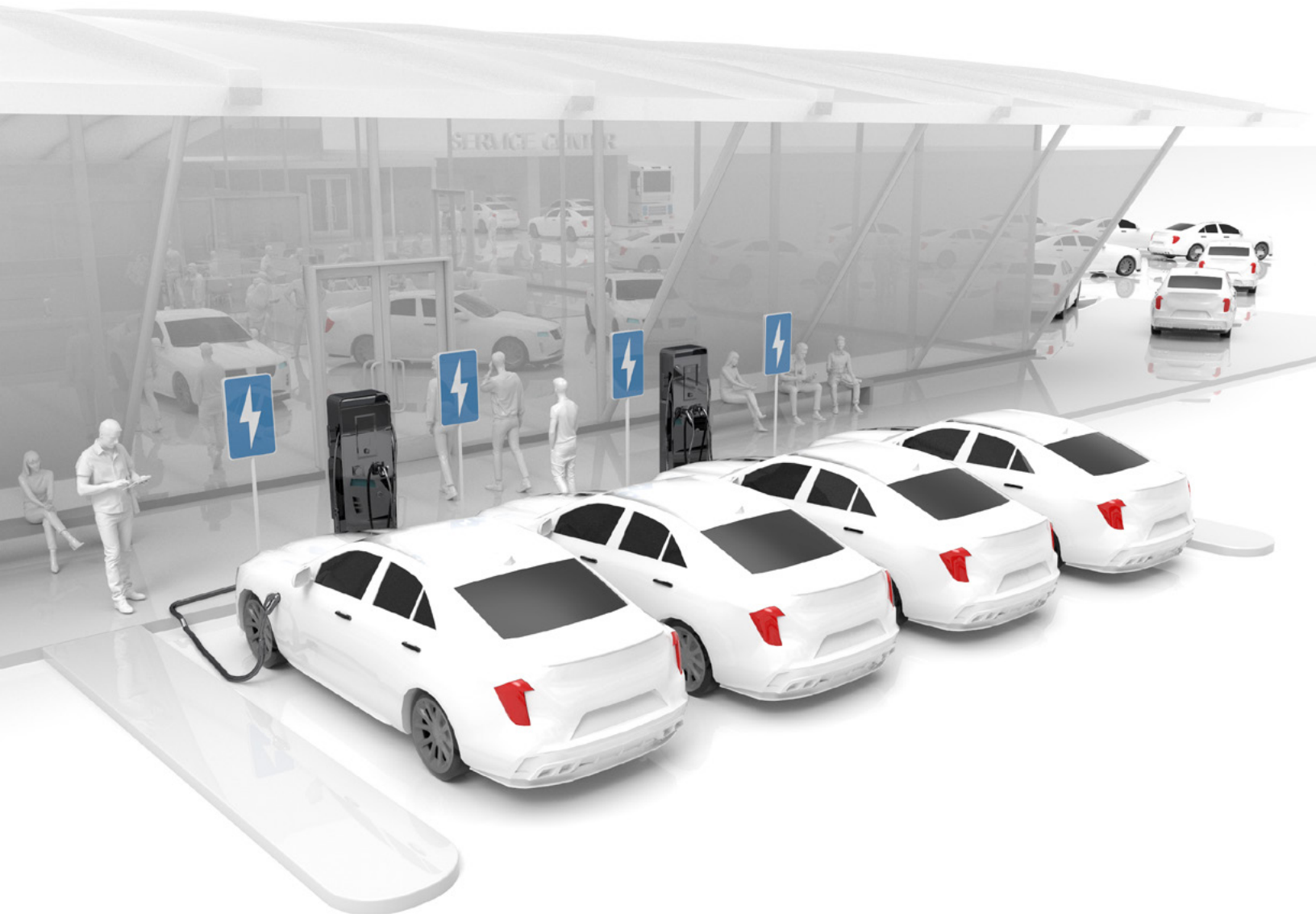
These numbers, and this report, are not intended to throw a bucket of cold water on the burning-hot EV market. Instead, we as an industry need to understand the true impact and timing of EVs so we can plan investments, develop educational programs, and advocate for our customers and their needs during this transition.

* <https://www.caranddriver.com/news/a39998609/ev-sales-turning-point/>



How To Take Action

The future of electric vehicles is almost assured, but that doesn't mean there isn't significant work to do to pave the way. Here are a few of the key actions dealers can take to address this transition.



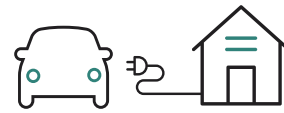
Know Your EV Strengths and Weaknesses

As we get a clearer picture of what EV buyers like and what's holding potential buyers back, be prepared to address these issues with your customers:



IF A GEN Z SHOPPER IS CONCERNED ABOUT WHERE TO CHARGE ...

be an encyclopedia of your town's charging options. If the local Starbucks or grocery store has a number of chargers, make sure to mention that. Create a map of your area with icons for how many chargers are available and hang it near your EVs in the showroom.



IF THE SHOPPER OWNS A HOME ...

understand that they might need to upgrade their electric outlet at least, and possibly install a wall charger or even a solar panel. Have a solution at the ready, whether it's coordinated with your OEM or through a trusted local provider.

The benefit of being a dealer is that you know your town — and you know it better than an OEM or a third-party can. Your understanding of these plusses and minuses makes you a knowledgeable guide when talking to EV shoppers who will need your assurance. Given their lack of brand loyalty, your role as the dealer touchpoint is key.

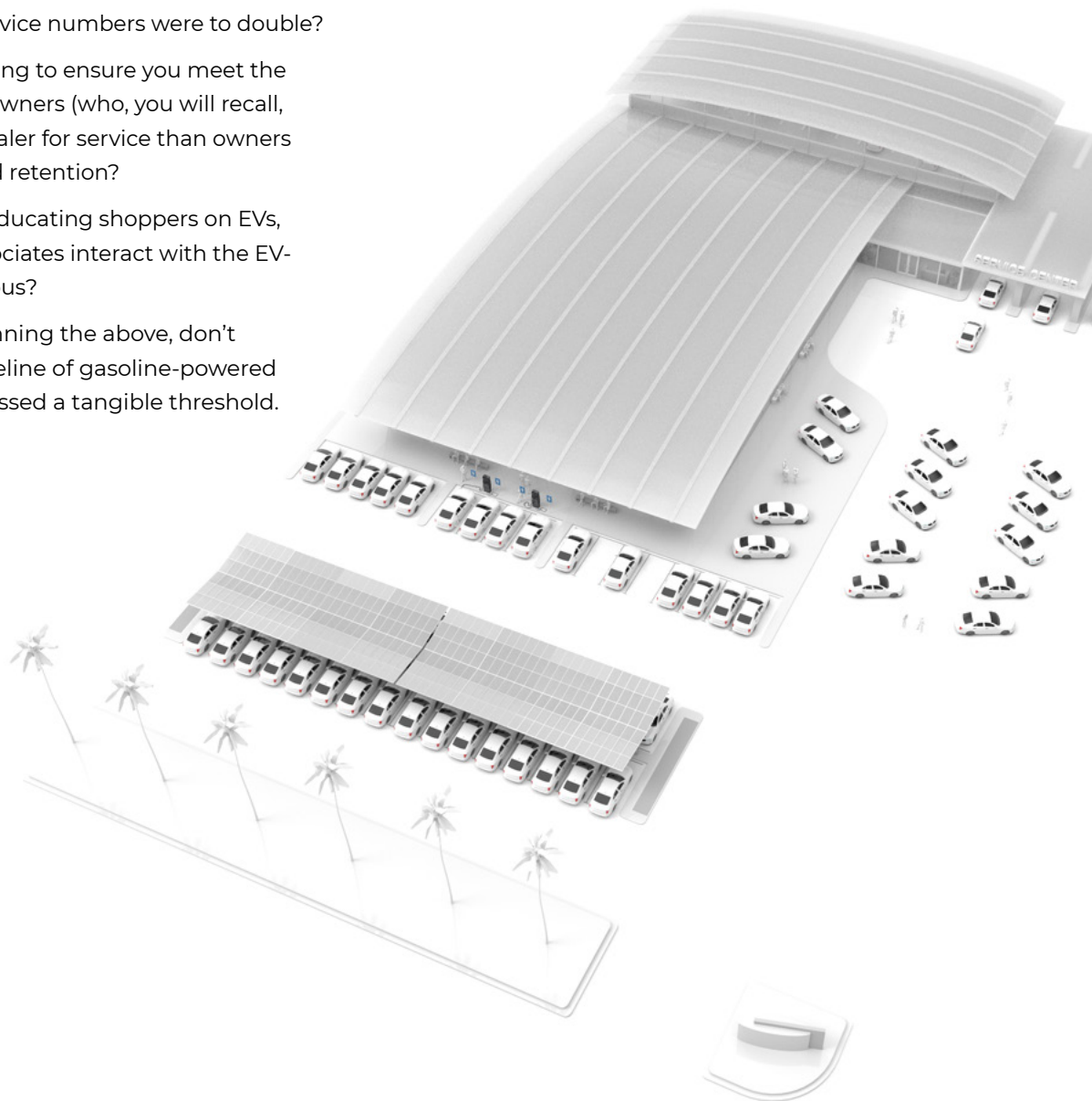
15-Year Plan

Timelines in the automotive industry are always long, whether developing a new powertrain or redesigning the look and feel of a brand's dealer network. By formulating an action plan that accounts for a realistic transition into an EV future, dealers can generate the profits they need in order to invest in EV infrastructure incrementally.

Consider:

- How many Service Technicians and bays are needed to service a fifth or a tenth of your store's total sales?
- How will you scale up if service numbers were to double?
- What services are you adding to ensure you meet the specific needs of your EV owners (who, you will recall, are more likely to visit a dealer for service than owners of other vehicles) and build retention?
- Since the dealer is key to educating shoppers on EVs, how should your sales associates interact with the EV-curious versus the EV-serious?

Most importantly, while planning the above, don't sacrifice your solid sales pipeline of gasoline-powered vehicles before EVs have crossed a tangible threshold.



Keep a Pulse on EV-Adjacent Trends

Staying on top of the automotive industry is second nature to dealers. And the trade publications we all read do an excellent job covering EV products and planning from an OEM lens. Yet, areas that influence EV adoption are not limited to discussion within our industry.

The most important area to remain aware of is the state of infrastructure supporting EV charging. This is often discussed in outside arenas, whether political or industrial in nature.

EV charging infrastructure can be influenced by a number of factors including:

- clean energy development
- electric grid improvements
- regional policymaking

Many of these factors (and the timeline for EV advancement overall) can be affected by whichever political party is in power. But regardless of your personal views, maintaining a broader outlook and taking part in your local policymaking will keep you better informed and put you on stronger footing as trends develop.



KNOW YOUR EV STRENGTHS AND WEAKNESSES



CREATE A 15-YEAR PLAN



WATCH THE PULSE OF EV-ADJACENT TRENDS



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