

cc: Shawn Garvin, DNREC  
Governor John Carney  
Mike Ramone, State Representative  
Chris Coons, U.S. Senator  
Mark Luszcz, DelDOT

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May 21, 2023

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89 Kings Hgwy.  
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Re.: Public Comments Regarding Delaware EV Mandate

After listening in on the virtual DNREC public hearing regarding the EV mandate for Delaware which is being proposed for the very near future, I have a number of "public comments" related to that article and other miscellaneous thoughts. I was disappointed at "who" was allowed to speak at that meeting because "public" to most of us means the people that live in Delaware who would be most impacted by this "mandate", NOT those who forcing EV's on regular citizens (such as representatives from Tesla, Environmental Groups outside of Delaware, Natural Clear Cars Commission, Al Gore's Group Representative, EV Hybrid Noire based in Atlanta, Mid Atlantic Alliance for Health, and others from similar organizations). I was originally against this "EV Mandate" but after listening to some "logical public comment", my biggest complaint about it is calling it a "mandate". IF you had described it as "The implementation or adoption of ACCII in Delaware" instead of "Delaware EV Mandate", it would have been a lot gentler way of presenting it to the actual "public" of Delaware. I also would have liked it IF all those that registered to speak would have been told to "state their name, what vehicle they currently drive, what state they lived in (since you allowed out-of-staters to call themselves "our public"), and THEN stating why they agreed or disagreed with the proposed directive."

I do agree that, by having Delaware (DNREC) officially "adopt" ACCII, it will invite some EV companies (e.g., Tesla and Rivian) to locate a business here so Delawareans could test drive one plus will facilitate that more EV's will be available from the big car manufacturers (Ford, Chevrolet, Subaru, Toyota, Nissan, etc.) and not have horrendous wait times to purchase one, if desired. Subaru has a Crosstrek Hybrid that was only sold in a few states (I asked because I would was considering buying a hybrid and wanted another Subaru). Now Subaru is discontinuing that hybrid model after 2023 because they had very few sales...no wonder, because it wasn't readily available in every state!

Now my comments:

- > EVERY major car company should have been required to produce all their gas vehicles as ONLY PZEV's long before this "EV mandate" should have been brought up for Delaware. And they should have made their Hybrids more reasonably priced and not so small that many people can't comfortably fit into them.
- > There are genius scientists and engineers that have created rocket ships that can go to outer space and back, and even land so as to fly again, but there isn't anyone smart enough to create a catalytic-type converter (under \$1000) that can dispel **ALL** bad emissions from gas powered vehicles which could be retrofitted onto any existing gas powered vehicle without costing an arm and a leg??? I cannot believe that rocket ships are more important than "fixing" the emissions from **ALL** existing gas powered vehicles without "mandating" that only new EV's be available after a particular year!!! Maybe THAT'S where the research funds should be directed??
- > Much of the air pollution in Delaware is caused by diesel-powered tractor-trailer traffic that has increased exponentially (and will continue to do so) due to the numerous new warehouses (Amazon and others) that are being approved for construction throughout Delaware, and particularly in New Castle County. Also, if the approvals that DNREC keeps giving for the transport of various kinds of solid waste by out-of-state companies into, out of, and through Delaware (by trucks that pollute and will never be replaced by EV's) are NOT actually STOPPING and LEAVING their waste in Delaware's landfills, then allowing them to travel "ONLY THROUGH" Delaware on I-95 or Rt. 1, etc. is acceptable, but still polluting our air quality. However, each state should be required to KEEP their own solid waste in their own state IF they aren't already. Our tiny state has enough to deal with on our own.

My Subaru is a PZEV, which supposedly reduces the emissions much more than normal catalytics do and was mandated in California in 1998 before EV's became "a thing" to buy (In 2020 in CA). If Delaware wants to emulate California, then they should be phasing in these regulations first, not EV's in 2-12 years! It took California from 1998 until now to get their air quality to ~67% out of 100% while Delaware right now is supposedly at ~77% without any of those restrictions yet. Why can't Delaware phase in PZEV's and hybrids for many more years before being at such a rush to crack down on Car Manufacturers to sell primarily EV's? Delaware has a large retired population, many of who are living on fixed incomes. (See attached article on PZEV's) PLUS comparing anything Delaware with anything California is ridiculous...except maybe to compare the amount of OPEN space in the state of California to the amount of OPEN space in our small state. And comparing any of this for each state doesn't mean anything if you don't also factor in the average wealth/income of all residents (which should include ANYONE who is filing a tax return...so millionaires, CEO's, minimum wage earners, retirees on fixed incomes, etc., etc.). California's cost of living is very much higher than Delaware's which also figures into whether EV's are affordable or desirable. California's population is 39,000,000+ compared to Delaware's at 1,000,000+. The News Journal article referred to how few registered EV's Delaware has compared to those registered in California. That number quoted means nothing when not taken into context with the percentage of EV's registered in either state compared to the total number of registered cars/SUVs/trucks in each state.

- > California JUST passed a "first in the nation" emission rule for trains. (See attached) It proposes to ban train engines more than 23 years old by 2030 and ban them for idling longer than 30 minutes if they have an automatic shutoff. If the proposed Newport Train Station is approved, that puts more "stopped trains" closer to my house with emissions once again (see later comment regarding the diesel truck situation we had for 10+ years until recently). The average car loan to purchase an EV costs more per month than many residents can afford to pay or are even able to secure a loan for due to income limitations and already existing mortgage or rent expenses plus the need to pay for food. Giving a federal tax credit of up to \$7500 to those purchasing an EV (most of which are \$40,000+, other than the tiny ones!) doesn't help someone trying to qualify for that huge car loan! Better if the EV manufacturers would lower the cost by the \$7500 even though that would still be outrageous! A car loan for 7 years (84 months) on a \$45,000 car is roughly \$657/month at 6% plus the cost of installing a charging station IF you have a garage or needing to live near a charging station if you don't have a garage. All the jobs that Delaware is bringing in with the construction of all the warehouses are just over minimum wage and mostly younger employees. Those don't have enough income nor the credit ratings to qualify for a decent rate even if they could afford to purchase an EV at \$600+/month especially if they have to pay taxes, rent, and eat! The gas stations will lose business and possibly will close, and many will become brownfields (due to prior gas leakage) and car dealers will be letting salespersons go because not enough sales of EV's will keep them afloat, in fact, much of the sales of EV's will likely be done over the internet as many cars are now already sold. Will bringing in the warehouse workers balance out the number of gas station owners/employees and car salespersons that will be out of work? Delaware already has enough closed businesses but construction of new office buildings and housing projects keeps getting approved. Also, where will all the "soon-to-be defunct gas vehicles" go to die??? Will they go to the same place where the "some-day-dead EV batteries" go to die???
- > The current infrastructure of most states currently cannot sustain the advanced use of electricity to charge the number of EV's that ACCII hopes to get on the road (consider what happened in Texas a few years back and, with global warming, that is going to put an increased demand on air conditioning usage in many more states). And my final observation on this mandate... I am a single elderly female that travels to visit family in other states that would require recharging of an EV during my trip IF I had one. I do not feel comfortable even now going into rest stops at night yet alone into a charging station that requires me to stay there solo while my EV recharges especially if it's 95+ degrees outside and I have to leave my car windows down in order to sit inside my car. Delaware (and I'm sure many other states) has way too many random shootings, car jacking, abductions, and rapes to make me feel comfortable traveling alone in a car that needs to "find" a charging station before it's out of "juice" rather than just stopping at the first gas station I see when I'm down to ¼ or ½ tank. I am a retired senior on a fixed income. I own a 2017 Subaru Legacy PZEV (that looks brand new) with 49,398 miles on it. I likely will not buy another vehicle in my lifetime nor could I anyway since the payments would be a hardship for me. I have some cash available to use on a new vehicle but not nearly enough to afford an EV and a charging plug in my garage. There are a lot of residents of Delaware just like me and many more that are worse off than I am. This mandate that is endorsed by President Biden and also Governor Carney and soon by DNREC Secretary Shawn Garvin may not be a hardship to each of them. But for the newly employed young high school and college graduates and those retired residents living mostly on Social Security, this EV mandate is going to cause excessive hardships on them.

The EV mandate may not affect me before I die but my children and grandchildren will have to deal with all of this. I just hope that some of what I've put in this letter will make you think about your decisions at least until the price of EV's is reduced to what a normal gas powered vehicle should cost and wages are increased for at least the lowest paid workers. Even the cost of some of the gas powered vehicles these days is way out of the range that many can afford. In 1972, I special ordered a brand new 1972 Dodge Charger through the Dodge Dealer with a 4-speed, a/c, special paint color, and a special vinyl roof for \$4400 (which would have been ~\$83/month at 5% for 5 years), I was making about \$1000/month and still had to pay \$200/month for an apartment. So my car and rent was 3.5% of my salary. Based on those numbers, someone today who has a \$662/month car payment (6% 6 year loan on a \$40,000 car loan) plus average rent of \$1,500-2,000 would have a hard time surviving with a \$20/hour job (~\$3716/month before deductions for taxes, health insurance, 401K, etc.). You can do the math.

- > And lastly, the residents of my neighborhood had to put up with poor air quality from excessive diesel-powered tractor-trailer traffic due to the public notice having a "typo on the street name of where the Highline/Twinco Company was having chemical tanks installed" which happened in January 2013. The residents at that time tried to get something done through local legislators with no success. When I moved to Silview in 2019, I started trying to get some relief for our horrendous air quality and, although DelDot has "promised" that an alternate road should be completed in 2024 to take those trucks out of Silview and Pleasant Hills, the company has now left so we've had peace and quiet since April 1. However, the owner of that property is actively trying to get a new leasee which could be equivalent or even worse than what we had with no urgency by DelDot to get this alternate road before a new leasee is found, and no one seems to care completed (if the alternate route actually does happen). However, the problem with diesel emissions effects on air quality was mentioned in the virtual public hearing as a reason for mandating EV's!

There is no need to contact me about my letter. I just wanted to be sure that you all had taken all these things into consideration. And to sign off...since President Biden has been in office, the Rt. 141 & I-95 shutdowns when he's at home for the weekends often cause hours of backed up idling traffic jams along his entire route and also the Rt. 1 shutdowns when he's traveling about while at his vacation home in Rehoboth do the same thing especially in the summer.

Respectfully submitted,



Anne Y. Koiv

Attachments:

- PZEV article from Car and Driver
- Quick Guide to PZEV's
- News Journal Article on California emissions rule for trains
- Cost of new and used EV's
- NCC proposes amending code that governs warehouse development

# Partial Zero Emission Vehicle (PZEV): Everything You Need to Know

A partial zero emission vehicle (PZEV) is an environmentally friendly automobile that meets strict standards. These vehicles have zero evaporative emissions, meet tailpipe emission standards, and have generous warranties on emission control parts.



By Hearst Autos Research

Yury Stroykin|Getty Images

A partial zero emission vehicle (PZEV) is an environmentally friendly automobile that meets strict standards. These vehicles have zero evaporative emissions, meet tailpipe emission standards, and have generous warranties on emission control parts. Let's break down the benefits and unique features of PZEVs.

## What Are Partial Zero Emissions Vehicles (PZEVs)?

PZEVs are designed with these key characteristics:

- Their fuel systems produce no evaporative emissions.
- They meet super ultra-low emissions vehicle (SULEV) tailpipe emissions standards.
- They have warranties on their emissions control parts that last for 15 years or at least 150,000 miles.

PZEVs were originally developed to meet California's strict air quality standards. According to Subaru Canada, they're considered the cleanest running gas-powered vehicles. As Sustainable America states, the PZEV category was developed as part of an agreement between automakers and the California Air Resources Board (CARB). Creating PZEVs allows carmakers to delay developing zero-emission vehicles (ZEVs), which feature electric and fuel-cell models.

These environmentally friendly vehicles offer a wide range of benefits, notes Subaru of Niagara:

- Smog reduction without a decrease in performance
- No complex or expensive technology to repair
- No need for alternative fuels, since PZEVs are gas-powered

## What Are the Unique Features of PZEVs?

To be environmentally friendly, PZEVs feature changes in several key areas. According to [Popular Mechanics](#), some of their unique features include:

- **Anti-Permeation Fuel System Liners:** When gas saturates the various parts of the fuel system, vapor can leak out and evaporate. PZEVs have specially designed fuel system liners that prevent off-gassing, evaporation, and emissions due to fuel leakage. In addition, the fuel injectors close tighter than in standard vehicles to avoid evaporation.
- **Carbon Air Intake Traps:** After turning off the engine, fuel vapors can stay in the combustion chamber and leak out, causing emissions. PZEVs have carbon air intake filters in the engine to prevent these vapors. This filtering system has a charcoal canister designed to absorb these emissions efficiently.
- **Carbon Canister Scrubbers:** Fuel vapors can also leak out and evaporate from the fuel cap, especially when outside temperature changes occur. PZEVs have carbon canister scrubbers installed in the fuel line that runs from the fuel line to the gas tank to prevent these emissions.
- **Close-Coupled Catalytic Converters:** Every gas-powered vehicle has catalytic converters, but PZEVs have a close-coupled version. These catalytic converters are designed to get vehicles to speed quickly while eliminating nitric oxide and nitrogen dioxide. Close-coupled catalytic converters are lined with precious metals like platinum, palladium, and rhodium. When nitric oxide and nitrogen dioxide pass through, the catalytic converters change them into less harmful gases.
- **Engine Control Module (ECM):** According to Subaru of Canada, Subaru PZEVs have additional modifications in their ECMs to address emissions in cold weather. Programming changes in the ECM delays ignition timing, which makes exhaust warmer. As a result, the converter and other fuel system parts warm up more quickly, which can lower emissions.

As [Sustainable America](#) states, these relatively small adjustments to the engine and fuel system contributes to a major change. Compared to a standard combustion vehicle, these features result in a 90% or more decrease in smog- and acid rain-producing emissions. These PZEV features also capture potentially harmful gases like nitric oxide, carbon monoxide, and nitrogen dioxide, which all contribute to emissions in standard vehicles.

Although these features can reduce smog and contribute to cleaner air, PZEVs have some drawbacks. They don't decrease carbon dioxide emissions or improve fuel efficiency. That's why CARB considers them to be a temporary solution for automakers striving to develop viable zero-emissions vehicles.

To develop more sustainable vehicles, many automakers are focusing on hybrid-electric PZEVs, or advanced technology partial zero emission vehicles (AT-PZEVs). Once automakers master these vehicles, they'll move on to plug-in hybrids and all-electric vehicles. Eventually, automakers will focus on the ultimate goal or alternative fuel vehicles like hydrogen fuel cell vehicles.

## Frequently Asked Questions About PZEVs

If you're considering a PZEV for the first time, you might have a few questions about these environmentally friendly vehicles. Let's review a few of the most frequently asked questions about PZEVs.

- **What's the benefit of getting a car with a PZEV badge?** Cars that have a PZEV badge can help decrease your carbon footprint significantly. According to Subaru of Niagara, Subaru PZEV cars are much more eco-friendly than standard vehicles yet still perform well without cutting corners.
- **What incentives aren't available for PZEVs?** According to the [State of California Department of Motor Vehicles](#), most PZEVs don't offer incentives beyond the extended warranties and the reduced carbon footprint. For example, PZEVs don't always qualify for the hybrid vehicle tax credit. They don't automatically allow you to drive in carpool or high-occupancy vehicle (HOV) lanes either.
- **What are SULEVs?** Vehicles that fall in the SULEV category have much stricter emission standards than either low-emission or ultra low-emission vehicles do. All SULEVs, including PZEVs, must have a 15-year or 150,000-mile warranty on all emissions-related parts.
- **How clean are AT-PZEVs?** These vehicles meet or exceed PZEV standards. AT-PZEV standards apply to plug-in hybrid electric vehicles (PHEVs) and hydrogen vehicles.
- **What is the standard PHEV warranty?** All PHEVs have a 15-year or 150,000-mile warranty on the fuel system emission parts. They also have a 10-year or 100,000-mile warranty on the traction battery.
- **Where are PZEVs available?** When they first hit the market, PZEVs were available in Canada and the six clean-car states: California, Maine, Massachusetts, New York, Oregon, and Vermont. Today, they're available across the U.S.
- **What emissions rules do the six clean-car states have?** These six states all follow California's strict automobile emissions rules.
- **What other states have strict emissions rules?** In addition to the six clean-car states, Alaska, Connecticut, Maryland, New Jersey, Pennsylvania, Rhode Island, and Washington all have stringent emissions standards.
- **Which automakers make PZEVs?** Subaru was one of the first to adopt PZEV technology. Today, Mazda, Honda, Ford, Volkswagen, and other major brands make PZEVs.

Want to find out if a PZEV is right for you? Browse our [comparison tests](#) or read our [first drive reviews](#) to find the latest news on these sustainable vehicles.

# Quick Guide To Partial Zero Emission Vehicles

by [Morgan Carter](#) /

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Everything you need to know about partial zero emission vehicles

Read in this article:

- [What are Partial Zero Emission Vehicles \(PZEV\)?](#)
- [Special Equipment Required to Meet SULEV Standards](#)
- [What are the Benefits of PZEV Technology?](#)
- [FAQs](#)

## What are Partial Zero Emission Vehicles (PZEV)?

As the name suggests, Partial Zero Emission Vehicles, or PZEV for short, are automobiles that were specially designed to meet stringent emission standards in the US. They are not necessarily [hybrid cars](#), but they are more environmentally friendly than traditional gas-fed vehicles. Key factors that define this specific classification include:

- Engine and fuel systems that produce no evaporative emissions
- Meeting super ultra-low emissions vehicle (SULEV) tailpipe standards
- Emission control parts are covered by a 15-year/150,000-mile warranty

These cars were originally developed to be sold in California, where air quality standards are stricter, but these same standards have been adopted by several other states, such as Vermont and New York. They serve as a halfway point between cheap, high-emission vehicles and much more expensive full hybrids and electric vehicles. That said, they are not the end-point but rather a step on the journey towards true zero emissions.

If you're wondering "Is my car a PZEV?", you can do a quick online search to see which vehicles in the USA meet SULEV standards. Some examples of the PZEV cars on the list include the:

- [Nissan Altima \(2011\)](#)
- [Buick LaCrosse \(2016\)](#)
- [VW Golf \(2012\)](#)
- [Subaru Forester \(2019\)](#)
- [Porsche Cayenne \(2012\)](#)

You'll note this list is mostly older vehicles; the reason for this includes the fact that most automakers chose to focus on hybrid, [electric](#), or advanced technology partial zero emission vehicles (AT-PZEVs), with PZEVs featuring more like a stepping stone in this process.

### Special Equipment Required to Meet SULEV Standards

Naturally, what it takes for the engine of a PZEV to meet these regulations varies from vehicle to vehicle, with certain automakers like Subaru taking it a step further with its enhanced engine control modules. Still, while there are quite a few enhancements, the changes are rather minor compared to what you'd find in an MHEV or PHEV. This helps to keep costs down, both for the manufacturer and the buyer.

In order for a traditional gas-powered vehicle to earn the classification of PZEV, the engine and fuel system need to be tweaked in a variety of ways. All PZEV cars need to include the following:

- **Anti-Permeation fuel system liners:** These specially designed liners, along with tight fuel injectors, prevent gas from leaking out and saturating the fuel system. This, in turn, reduces off-gassing, evaporation, and gas emissions.
- **Carbon air intake traps:** Fuel vapors remain in your car's combustion chamber for some time after you turn off your vehicle. Since these can leak out, special intake filters with charcoal canisters are fitted, which capture and absorb them.
- **Carbon canister scrubbers:** Just as vapors can escape from your engine compartment, so too can they get out of the fuel tank via the fuel cap. To meet PZEV emissions standards, a special scrubber insulates the fuel line, preventing these vapors from escaping.
- **Close-coupled catalytic converters:** A more closely coupled version of the standard equipment have an extra lining of precious metals that react to nitric oxide and nitrogen dioxide, catalyzing them into less harmful gases
- **Engine control module:** Some PZEV vehicles have special control modules that delay ignition timing in winter. This allows the rest of the system parts to warm up before the creation of emissions, meaning that they can absorb them properly.

## **What are the Benefits of PZEV Technology?**

All of these changes to the components work towards lowering the emissions of PZEVs, but there are a few knock-on advantages, too. These comprise:

- Cleaner emissions without any loss in performance
- Easier and cheaper to repair than complex hybrids
- No special fuel or charging stations are required

But this is not to say that they are perfect. Technology has advanced quite a bit since PZEVs were first introduced, proving that they are little more than a stepping stone on the route to true zero emissions. As such, they:

- Don't provide any additional performance
- Don't reduce carbon dioxide emissions
- No money saved from better fuel economy or incentives offered



Nowadays, we have wider access to hybrid vehicles, both mild or plug-in, and even quite a few electric vehicles. With many manufacturers making the move towards full electrification, it is likely that PZEV technology will be applied to the few remaining gasoline-powered vehicles to ensure that they at least try to meet emission regulations when EVs are slamming it out of the ballpark.

## FAQs

### **What does PZEV stand for?**

Partial zero emission vehicle. These are essentially gas-powered vehicles with extra equipment to reduce their harmful gasses output. Toyota has quite a long list of PZEV vehicles, as do Chevrolet, Ford, and Lexus.

### **Which states have strict emissions rules?**

In the US, six states are known as the clean or PZEV states - California, New York, Maine, Oregon, Massachusetts, and Vermont. Aside from these, other states with higher-than-average emissions regulations include Maryland, Rhode Island, Alaska, Washington, Connecticut, New Jersey, and Pennsylvania.

### **What does the PZEV warranty cover and for how long?**

To be deemed a PZEV, a vehicle must have a warranty that covers the fuel system for 15 years or 150,000 miles, as well as the traction battery for 10 years or 100,000 miles.

### **Do PZEVs qualify for incentives?**

Unlike true hybrids or electric motor vehicles, PZEVs do not generally benefit from any incentives, like tax credit awards, aside from their extended warranty periods. However, there are a few exceptions to the rule, and you'll have to check with your local dealerships for more information. With the latest changes to these incentives and tightening regulations around the world, it may still be more logical to skip over the PZEV segment and aim for a hybrid, if you can't afford a fully electric option.

Friday, April 28, 2023 , News Journal Article

## California passes emissions rule for trains

First-in-the-nation move latest by state on climate

**Sophie Austin**

ASSOCIATED PRESS/REPORT FOR AMERICA

SACRAMENTO, Calif. — California approved Thursday a first-in-the-nation, ambitious rule limiting rail pollution to aggressively cut greenhouse gas emissions in the state's latest move to establish itself as a global leader in the fight against climate change.

The rule will ban locomotive engines more than 23 years old by 2030 and increase the use of zero-emissions technology to transport freight from ports and throughout railyards. It would also ban locomotives in the state from idling longer than 30 minutes if they are equipped with an automatic shutoff.

"It is time to kickstart the next step of transformation, with trains," said Davina Hurt, a California Air Resources Board member.

The standards would also reduce chemicals that contribute to smog. They could improve air quality near railyards and ports.

But some say it's too soon for the locomotive standards. Wayne Winegarden, a Pacific Research Institute senior fellow, said the rule would be expensive for rail companies, and increased costs will mean higher prices for many goods that move by rail.

The Association of American Railroads said in a statement "there is no clear path to zero emissions locomotives."

"Mandating that result ignores the complexity and interconnected nature of railroad operations and the reality of where zero emission locomotive technology and the supporting infrastructure stand," the group wrote.

Freight railways are an efficient means to transport the roughly 1.6 billion tons of goods nationwide across nearly 140,000 miles, much cleaner than if those goods were trucked, it said.

The transportation sector contributed the largest share of greenhouse gas emissions nationwide in 2020, according to the Environmental Protection Agency. But rail only accounts for about 2% of those emissions.

Kristen South, a Union Pacific spokesperson, said in a statement the rail company is "deeply disappointed" by the vote, adding that the rule is too ambitious for the current technology and infrastructure.

Union Pacific is working to cut greenhouse gas emissions in part by spending \$1 billion to modernize locomotives and testing out engines powered by electric batteries, South wrote.

Cecilia Garibay, a project coordinator with the 50-member Moving Forward Network based at Occidental College, said California needs "the strongest, most protective in-use locomotive regulation" that sets an example for the nation.

The standards would need approval from the Biden administration to move forward. They follow rules approved by the EPA to cut emissions from heavy trucks.

Locomotives pull rail cars filled with food, lumber, oil and other products through railyards near neighborhoods in Oakland, Commerce, San Bernardino and other California cities.

They run on diesel, a more powerful fuel than gasoline, producing greenhouse gases and pollution that is harmful for nearby residents.

Other states can sign on to try to adopt the California rule if it gets the OK from the Biden administration.

The rule is the most ambitious of its kind in the country.

"The locomotive rule has the power to change the course of history for Californians who have suffered from train pollution for far too long, and it is my hope that our federal regulators follow California's lead," said Yasmine Agelidis, a lawyer with environmental nonprofit Earthjustice, in a statement.

Diesel exhaust is a health hazard. According to California regulators, diesel emissions are responsible for some 70% of Californians' cancer risk from toxic air pollution. The rule would curb emissions on a class of engines that annually release more than 640 tons of tiny pollutants that can enter deep into a person's lungs and worsen asthma, and release nearly 30,000 tons of smog-forming emissions known as nitrogen oxides.

The rule would also drastically cut greenhouse gas emissions from locomotives, by an amount akin to removing all heavy-duty trucks from the state by 2030.

It's important to tackle emissions from a sector that often burdens low-income residents and communities of color, and that has plans to expand passenger rail, said Air Resources Board Chair Liane M. Randolph.

Rail companies can participate in incentive programs run by the state to ease the cost of transitioning to zeroemissions locomotives, the agency said.

California has already set out to make big emissions cuts in other areas. The state approved a transition to zeroemissions cars and a roadmap to achieve carbon neutrality, meaning it would remove as many carbon emissions as it releases, by 2045. The board is also considering a rule to electrify a group of heavy trucks that transports goods through ports.

For activists and residents who've lived in areas affected by heavy rail pollution, the fight for cleaner trains is decades in the making.

Jan Victor Andasan, an activist with East Yard Communities for Environmental Justice, grew up in West Long Beach and now organizes residents there. It's a neighborhood near the twin ports of Los Angeles and Long Beach that is "surrounded by pollution" from trains, trucks and industry.

"We support rail, but we support rail if they're doing all their best to mitigate their emissions," Andasan said.

Residents shared stories Thursday of children who live near railways having to share inhalers to ease asthma symptoms and families taking extreme measures to rid their homes of diesel fumes.

Some activists would like California to go further, for example, to limit locomotive idling to 15 minutes.

They are also concerned that increased demand from online shopping is causing more rail traffic that burdens communities.

The EPA recently approved California rules requiring zero-emission trucks, depending on the type, to make up between 40% and 75% of sales by 2035.

Heidi Swillinger lives in a mobile home park in San Pablo, a small city in the San Francisco Bay Area, along the BNSF Railway. She estimates that her home is just 20 feet from the tracks. She said it's not uncommon for diesel fumes to fill her house, resulting in a "thick, acrid, dirty smell."

"Nobody wants to live next to a railroad track," Swillinger said. "You move next to a railroad track because you don't have other options."

*Sophie Austin is a corps member for the Associated Press/Report for America Statehouse News Initiative. Report for America is a nonprofit national service program that places journalists in local newsrooms to report on undercovered issues.*

DAMIAN DOVARGANES/AP



**The Los Angeles skyline is seen above a Union Pacific terminal. A new California rule will ban locomotive engines more than 23 years old by 2030 and increase the use of zero-emissions tech to transport freight from ports and throughout railyards.**

## Electric Car Prices: Average Electric Car Cost in 2023

January 29, 2023

Posted by: Find My Electric

With the buzz about the new Federal Clean Vehicle Credit requirements making even hesitant potential electric vehicle buyers take a second look, this year's market for EVs is surging forward. But what kind of price can you expect for a new EV these days? What is the average price for new electric vehicles on the US market, and what can we expect for EV prices in the future?

Let's take a dive into what it costs to buy a new EV in 2023:  
Average Price for New EVs in the US

Before we get to an average price for electric vehicles in the US, let's talk about the outer edges of the price spectrum for new EVs:

At the bottom end of the spectrum, the 2023 Chevrolet Bolt EV is the cheapest electric car in the US with a starting MSRP of \$27,495. The Bolt also currently qualifies for the Clean Vehicle Credit, potentially dropping its effective price down by another \$7,500. Coming in second for cheapest EV is the Nissan Leaf, which has an MSRP of \$28,040.

The most expensive EV in the US right now is the 2023 Rolls-Royce Spectre, with an asking price of a whopping \$460,000 for its Phantom trim (and yes, a few hundred people have actually gotten their deposits in to purchase one). Of course, you'll be hard-pressed to find a tax break to bring the price down on this luxury 2-door coupe.

While no reasonable, mainstream EV even approaches the price point of the Spectre, electric vehicle prices do tend to average about 33% higher than the average non-electric vehicle. This is a drop of about 9% over the past two years though, but it hasn't made as much of a dent in the actual purchasing cost of an electric vehicle as we would hope. The reality of the situation is that all vehicle prices have gone up over the past few years.

Now let's take a closer look at the average prices of new EVs by comparing the top ten best-selling EVs in the US:  
Average Price of the Top Ten Best-Selling EVs

You'll get a few different answers for the top 10 list of electric cars in the US for 2023; some focus on the price, units sold, how quickly they sold, number of reservations, perceived popularity, etc. The following list contains the Top Ten best-selling electric vehicles that we've ranked by the total number of sales made in 2022 (with pricing current as of 5/5/2023):

Rank	Make & Model	Price Range	US Units Sold
1	Tesla Model Y	\$47,240 – \$54,240	251,974
2	Tesla Model 3	\$40,240 – \$53,240	211,618
3	Ford Mustang Mach-E	\$42,995 – \$59,995	39,458
4	<del>Discontinued</del> Chevrolet Bolt EV/EUV	\$27,495 – \$33,790	38,120
5	Tesla Model S	\$87,490 – \$107,490	32,675
6	Tesla Model X	\$97,490 – \$107,490	26,121
7	Hyundai IONIQ 5	\$45,500 – \$52,600	22,982
8	VW ID.4	\$38,995 – \$55,245	20,511
9	Kia EV6	\$48,700 – \$61,600	20,498
10	Rivian R1T	\$73,000 – \$94,000	17,426

The average price of the top ten electric vehicles in the US is about \$61,442, with an average of \$54,915 for the low end trim of each model and \$67,969 for the high end trim of each model. For these ten EVs, prices range from \$27,495 at the low end (the Chevrolet Bolt EV) and go all the way up to \$107,490 for the most expensive trim of the Tesla Model X (still the base MSRP, since you can option the Model X all the way up to \$133,240).

Obviously, these ten models aren't the only EVs being sold in the US. So, what is the average price for electric vehicles across the entire US market? Currently, most estimates put the average price of a new EV somewhere around \$64,000, which is slightly lower than the average price in the spring and summer of last year (2022). For comparison, the average price in 2023 of a new car of any kind in the US is around \$48,000.

However, this EV average price doesn't differentiate between cars, SUVs, and trucks, so we'd like to break it down a little further:

The average price of electric cars (sedans, small hatchbacks, sport models, etc.) in the US is closer to \$76,000. This includes cars like the Tesla Model 3, Lucid Air, Chevrolet Bolt EV, and the Nissan Leaf. While the price seems high, the luxury sedans and luxury sports cars outnumber the economy cars in this category, increasing the average price quite a bit. Still, we'd like to point out that the electric car category also includes the cheapest EV available, the Chevrolet Bolt EV (followed closely by the Nissan Leaf).

Note: we left the Lucid Air Sapphire and the Rolls-Royce Spectre entirely out of these calculations, because the unusual quarter and half million price points on these limited, super luxury EVs would increase the average significantly.

For all-electric SUVs, the average price comes to about \$60,000. Surprisingly, many electric SUVs are quickly entering the market at or even below the average price of electric vehicles of any category. While the least expensive electric SUV, the Chevrolet Bolt EUV, actually comes in at less than \$30,000, most electric SUVs on the market cost between \$45,000-\$55,000.

The average price of an electric truck is around \$72,000, though only Ford, Rivian, and GMC have an electric pickup truck on the market at the time of writing. While this isn't a very wide range of prices to pull an average from, we do expect to see several new electric trucks added this year by multiple manufacturers, including Tesla with the Cybertruck. Hopefully, some of these new EV truck options will bring the average price down.

**Average Price for Used EVs in the US**

In early 2023, the average price for used EVs is about \$40,700.

A small but growing percentage of EVs can be found at prices below \$25,000. The cheapest used EVs tend to be either a Nissan Leaf or Chevrolet Spark, though an older Tesla Model S can show up in the \$25,000-\$30,000 price range.

Let's take another look at our top ten list of best-selling EVs, this time with their current average used price:

Rank	Make & Model	Used Price Range
1	Tesla Model Y	\$40,000 – \$69,000
2	Tesla Model 3	\$30,000 – \$67,000
3	Ford Mustang Mach-E	\$50,000 – \$68,000
4	Chevrolet Bolt EV/EUV	\$17,500 – \$35,000
5	Tesla Model S	\$30,000 – \$135,000
6	Tesla Model X	\$48,000 – \$135,000
7	Hyundai IONIQ 5	\$27,000 – \$50,000
8	VW ID.4	\$32,000 – \$50,000
9	Kia EV6	\$42,500 – \$62,000
10	Rivian R1T	\$85,000 – \$95,000

For the top ten best-selling EVs, used prices average around \$58,500. The average price of the least expensive used EVs of each model reduces to about \$40,400. For the highest asking prices, that average goes up to \$76,600.

Over half of the electric cars on our list can be found for less than the average price of a new electric car in the US. With the exception of the Rivian R1T and Mustang Mach-E, many trims of the top ten best sellers are listed with used prices below \$48,000 (though it's important to note that any Tesla Model S in that price bracket will be an older model).

The price of used electric cars in the US is still relatively high, though there are some indicators that this trend may change in the near future. In the next two sections, we'll look at why these prices have remained high despite the length of time EVs have been on the market and why those prices are starting to drop.

#### Why Are EVs Still So Expensive?

We've been listening to EV manufacturers talk about how increased production will lower electric car costs for over a decade now, so why are the prices still so high? Despite Tesla's impressive 1.37 million EV units produced last year and the ever-increasing EV production from assembly-line veterans Ford and Chevrolet, the average price of an electric car has only increased in the last couple of years, from around \$54,700 in early 2020 to today's average electric car price of \$64,000. Even if they haven't decreased, why haven't prices at least leveled out?

The price of battery packs should have been the key to the reduction in EV prices, and before 2020, it looked like we might reach the ideal battery price of less than \$100 per kilowatt hour (kWh). However, today's battery prices have unfortunately jumped to around \$152 per kWh.

We're sure our readers are more than aware that the last several years have caused a series of unfortunate manufacturing events. The disrupted supply chain and shipping nightmares, factory shutdowns, material scarcity, and increased competition for components, has left the entire car industry (not just EV manufacturers) scrambling. Most have resorted to counteracting the rising cost of materials with a rising cost to consumers.

At the same time as the supply shortage appeared, gas prices increased dramatically and demand for EVs skyrocketed. When demand outpaces supply, prices generally don't go down. The rising demand of EVs had another effect, too: some dealerships saw an opportunity to raise the cost of electric cars on their lots well above MSRP. These overpriced EVs were in such high demand that they still sold quickly despite the sticker shock.

Even on the private market, used EV prices have remained at or near MSRP thanks to long lead times for production of new vehicles and scarcity of affordable EVs. However, prices are fluctuating due to Tesla's recent price drops.

We've been in a sellers market for EVs since approximately 2020, but the cost of an electric car in 2023 may trend in the opposite direction. In fact, it already has due to Tesla's price drop, market saturation (especially for Tesla Model 3/Y), and other various factors. Let's talk about why EV car prices are on their way down:

#### When Will Electric Vehicle Costs Go Down?

At this point in EV history, we may be seeing a new and used price tipping point.

In response to new Federal law that changed which vehicles were eligible for the Federal Clean Vehicle Credit, Tesla dramatically reduced their prices. In order to stay competitive with Tesla, other manufacturers may soon follow suit. Additionally, dealership markups that have kept some EV prices sky-high have settled down. And with the reduction in new EV prices, sellers of used electric vehicles are beginning to reduce their expectations and asking prices as well. For the first time ever, we are seeing Model 3 Long Range AWD variants with asking prices below the \$30k mark.

Could new battery technology be on the horizon for EVs? Possibly; a change in battery components could bring the industry to a more stable supply situation. However, lithium is still the preferred battery type for most EVs. With this limiting factor in mind, we may see an increase in EVs with a smaller range and hopefully a smaller price tag than the current market.

As part of this potential new wave of smaller, more affordable EVs, will Tesla bring out its long-awaited Model 2 (originally called the \$25,000 Tesla)? We hope so, though at this point any information about the Model 2 is still mostly a rumor.



What's going there in Delaware, May 3, 2023

## **New Castle County proposes amending code that governs warehouse development**

Brandon Holveck

Delaware News Journal

USA TODAY NETWORK

An ordinance drafted by the New Castle County Department of Land Use would introduce standards to minimize the adverse effects of rampant warehouse development in the county and make other changes to the development code designed to promote responsible redevelopment of industrial land, strip malls, office parks and other 'grayfields.'

The ordinance, introduced to County Council on April 25, must undergo hearings before the state's preliminary land-use service and the county's Planning Board before it can return to the council for a vote. The land-use department crafted the legislation as discussions began around a proposed warehouse moratorium that would bar construction of warehouses larger than 150,000 square feet for a year. Its sponsor, Councilman David Carter, the representative of much of southern New Castle County including Middletown, proposed the moratorium to allow time for the county to revisit its zoning code governing warehouses.

At a Planning Board hearing Tuesday on the moratorium, Carter said he was pleasantly surprised by the ordinance and that it covered much of what he had hoped to discuss during his proposed moratorium. The Planning Board tabled Carter's proposal. The councilman said he plans to make an amendment shortening the moratorium to 90 or 120 days to align with the potential passage of the land-use department's ordinance.

'I don't want any more applications coming in until these tools are in our hands,' Carter said.

More than 7 million square feet of warehouse space has been built in New Castle County since 2020 when the COVID-19 pandemic exacerbated demand for distribution centers. There has been record-low vacancy in that time and record-high asking lease rates, according to market reports.

New warehouse hubs are emerging. Around Route 301 in Middletown, more than a half dozen warehouses over Carter's 150,000-square-foot threshold have been proposed. Above the canal, Route 13 borders the Delaware Logistics Park, a collection of four large warehouses near the Delaware City Refinery, and an emerging warehouse park in place of the Blue Diamond amusement park. At least three warehouses are planned on the steel mill and Tri-State Mall sites in Claymont.

The proposed ordinance would reduce the maximum size of a warehouse from 450,000 square feet to 200,000 square feet. It allows the county to approve larger warehouses as it did previously if a number of provisions are met.

The following would be new requirements.

When proposed adjacent to an existing residential district lighting must be designed so that there is zero footcandle at the property line of the residential area. A noise study must be conducted. The site must be designed so that parking, loading and circulation minimize the glare from vehicular lights visible to neighboring residential properties. A Planning Board review is required prior to submission of a record plan to the Department of Land Use.