

# Charge Up New Jersey EV Dealer Guidebook

*A guide to New Jersey's best-in-nation EV incentive program and how it can benefit your customers and your dealership*





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# Partners in the production of the EV Dealer Guidebook

## Charge Up New Jersey

[Charge Up New Jersey](#) is the state's consumer electric vehicle (EV) incentive program designed to encourage residents to make the switch to driving EVs as a critical step to secure New Jersey's clean energy future. It is a subprogram of New Jersey's Clean Energy Program and the only program offering a cash incentive toward the purchase or lease of an EV in the state. It is managed by the New Jersey Board of Public Utilities (NJBPU) and administered by the nonprofit Center for Sustainable Energy.

## New Jersey Coalition of Automotive Retailers

The New Jersey Coalition of Automotive Retailers (NJ CAR), founded in 1918, is a nonprofit organization serving more than 500 neighborhood new car and truck dealerships throughout the state. NJ CAR advocates on behalf of New Jersey's \$35 billion auto retail sector and promotes public policies that ensure a fair and competitive marketplace, where the complex vehicle purchase process is made as simple and as seamless as possible. Visit [njcar.org](http://njcar.org).

## Center for Sustainable Energy® (CSE)


CSE is a nonprofit with one simple mission—decarbonize. CSE offers clean energy program administration and technical advisory services with the experience and streamlined efficiency of a for-profit operation and the passion and heart of a nonprofit. Working nationwide with energy policymakers, regulators, public agencies, businesses and others, CSE is an expert implementation partner and trusted resource. Visit [EnergyCenter.org](http://EnergyCenter.org).

## New Jersey Board of Public Utilities (NJBPU)

NJBPU is a state agency and regulatory authority mandated to ensure safe, adequate and proper utility services at reasonable rates for New Jersey customers. Critical services regulated by NJBPU include natural gas, electricity, water, wastewater, telecommunications and cable television. The Board has general oversight and responsibility for monitoring utility service, responding to consumer complaints, and investigating utility accidents. To find out more about NJBPU, visit [www.nj.gov/bpu](http://www.nj.gov/bpu).



# Welcome to the New Jersey EV Dealer Guidebook



The Center for Sustainable Energy (CSE) and the New Jersey Coalition of Automotive Retailers (NJ CAR) prepared this guide to provide dealership management and sales staff additional resources and information relevant to electric vehicle (EV) sales, such as EV technology, features, benefits and incentives.

It is intended to assist in addressing questions customers may have when shopping for an EV—questions that may be different from those asked in transactions involving internal combustion engine vehicles.

Sponsored by the New Jersey Board of Public Utilities (NJBPUB), this guide empowers EV dealers to contribute toward the state's goals of

- at least 330,000 registered light-duty vehicles in the state be plug-in electric vehicles by December 2025
- at least 2 million registered EVs by 2035
- at least 85% of all light-duty vehicles sold be electric by December 2040.

When consumers choose to purchase or lease EVs, it's also helping New Jersey meet its goal to reduce greenhouse gas emissions and achieve 100% clean energy by 2050.

## Questions and feedback

If you have any feedback related to this guide, please email [chargeupnj@energycenter.org](mailto:chargeupnj@energycenter.org).

# Introducing Charge Up New Jersey



## The incentive

New Jersey residents who purchase or lease a new, eligible electric vehicle can receive an incentive of up to \$5,000 on vehicles with a final manufacturer's suggested retail price below \$45,000, or up to \$2,000 on vehicles with a final manufacturer's suggested retail price between \$45,000 and \$55,000.

The total incentive amount for an eligible vehicle is \$25 per mile of all-electric range as rated by the U.S. Environmental Protection Agency at the website [fuelconomy.gov](http://fuelconomy.gov). Vehicles with an electric range of over 200 miles are eligible for the maximum incentive of \$5,000 for vehicles with an MSRP below \$45,000 or \$2,000 for vehicles with an MSRP between \$45,000 and \$55,000.

## The process

Car shoppers can take advantage of Charge Up New Jersey incentives directly at the car dealership or showroom and apply the incentive instantly to their purchase or lease at the point-of-sale.

The incentive will be applied to the cost of the new vehicle, and your dealership will submit the application on the customer's behalf. All the customer needs to do is complete the regular sales or lease paperwork and qualify and agree to the terms of the incentive program.

## Eligibility

The program is available only to individual state residents who possess a valid NJ state driver license, with the exception of military members stationed in New Jersey.

The main requirements are they must remain a state resident and maintain an active vehicle registration for at least two years and retain ownership or an active lease agreement for a minimum of 36 months.

## Website and online dealer hub

Charge Up New Jersey has a website that you can refer to for

- Detailed information
- Eligibility guidelines
- Eligible vehicles
- Program terms and conditions
- Dealer materials and consumer sales collateral

Visit [chargeup.njcleanenergy.com](http://chargeup.njcleanenergy.com).

# What electric vehicles are eligible?

Two types of plug-in EVs are available for Charge Up New Jersey incentives: plug-in hybrid electric vehicles (PHEVs) and battery electric vehicles (BEVs). Hybrid electric vehicles (that do not plug in) and fuel cell electric vehicles do not qualify.

For a full list of eligible vehicle models, visit [chargeup.njcleanenergy.com/eligible-vehicles](https://chargeup.njcleanenergy.com/eligible-vehicles).

## Plug-in hybrid electric vehicles

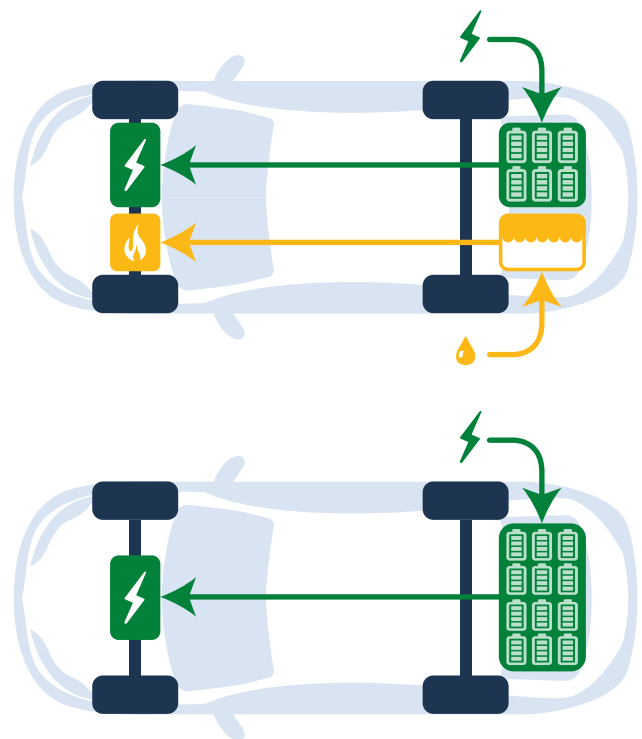
PHEVs use both a battery-powered electric motor and an internal combustion engine to run the vehicle. Different models have different modes of operation, but they primarily run either on all-electric power until the battery is depleted to a predetermined level and switch to gas or use a combination mode of gas or battery power as needed for accelerating, passing or merging. With both systems, PHEVs are able to increase fuel economy and decrease emissions.

## Battery electric vehicles

BEVs run entirely on electrical power stored in a larger onboard battery and do not have an internal combustion engine. BEVs must be plugged in and can be charged by a standard electrical outlet or using electric vehicle supply equipment. They are classified as zero-emissions vehicles because they run on charged energy and do not emit any exhaust. Any greenhouse gas emissions related to their operation comes from the source of the electricity used for charging. No internal combustion engine means no more oil changes, belt replacements or engine flushes.

## Power saving bonus

Many PHEVs and BEVs have regenerative braking (also called regen that uses the electric motor to convert the kinetic energy of braking into energy stored in the battery to help power the vehicle.





# Dealer requirements for Charge Up New Jersey

To receive dealer incentive payment, the dealership must meet requirements outlined in the Dealer Terms and Conditions and the program implementation manual. This includes the following.

- Become familiar with all incentive requirements.
- Ensure vehicle purchasers/lessees are aware of and understand their responsibilities as outlined in the Applicant Terms and Conditions.
- Ensure the vehicle purchase price is reduced by the approved incentive amount as part of the vehicle sale and is reflected as a line item deduction on the vehicle contract.
- Provide accurate and complete documentation of the vehicle purchase or lease to the Charge Up New Jersey program in accordance with the requirements in the implementation manual.

## Application submission window

Dealers have 14 days from the date of the vehicle transaction to submit an incentive application through the program's dealer portal at [apply.ChargeUpNJ.org](https://apply.ChargeUpNJ.org). Applications received after that period will be rejected. For the purpose of the incentive, the date of the vehicle transaction is the date the vehicle is delivered, and the sale/lease is finalized.

Once an application is started dealers have 14 days to submit the required documents. If documents are not submitted within 14 days, the application will be canceled. Required documents are

- Full copy of Charge Up New Jersey Incentive Terms and Conditions signed by the applicant
- Proof of temporary New Jersey vehicle registration
- Full executed copy of the purchase or lease contract
- Proof of purchaser's/lessee's New Jersey residency via a New Jersey driver license.





# Cost benefits of EV ownership

Two tax provisions can provide EV purchasers/lessees with significant savings to lower their acquisition cost.

## Exemption from New Jersey sales tax

The New Jersey Legislature exempts residents from paying state sales tax on the purchase or lease of a zero-emissions vehicle, which includes BEVs but not PHEVs. With the current sales tax rate at 6.625%, this is a significant incentive that offers hundreds to thousands of dollars off the vehicle cost – at the point-of-purchase.

To apply this incentive at the dealership, the customer must fill out a sales tax [Exempt Use Certificate \(Form ST-4\)](#), which is available from the New Jersey Division of Taxation online. The New Jersey Department of Environmental Protection's [Drive Green](#) website has a list of vehicles that are eligible for the sales tax exemption.

## Federal tax credit for electric cars

The federal government provides a tax credit for purchasing or leasing all plug-in vehicle types. The credit is equal to \$2,500, plus \$417 for a vehicle with a battery with at least 5 kilowatt-hours of capacity, and an additional \$417 for each kilowatt hour of battery capacity in excess of 5 kilowatt-hours. The maximum amount of the credit allowed is limited to \$7,500.

Note that once a vehicle manufacturer sells 200,000 eligible electric cars nationwide, the federal tax credit is used up for that manufacturer. Learn more at the IRS website [Plug-in Electric Drive Vehicle Credit](#).

## Long-term savings

Although EV owners may be confronted with higher upfront vehicle prices, various benefits of ownership can add up.

- **Low fuel costs:** Although gasoline prices fluctuate, according to the [U.S. Department of Energy eGallon calculator](#), the average distance that a gas-powered car can travel on a one gallon of gas is 28.2 miles and in New Jersey would cost \$2.25 (January 2021). To drive a comparable EV the same distance would be \$1.45, over a 40% reduction.
- **Insurance costs:** Many insurance companies provide premium discounts or rates in the same vehicle class to customers who own EVs.
- **Service and maintenance costs:** These costs for BEVs are significantly lower than comparable standard vehicles due to less engine maintenance. PHEVs require much the same service and maintenance as gas cars. This does not necessarily translate to less revenue in the service department, because EV customers may tend to bring their vehicle back to the dealer for regular service needs instead of going elsewhere.
- **Lowering vehicle costs:** Presently, EVs generally cost more due largely to the high cost of batteries, but as battery technology advances and scales to a growing market, cost will decline.

# What is different about selling EVs?

Consumers have many reasons behind their choice in vehicles: purchase price, gas prices, family size, length of commute, choice of leisure activity, vehicle appearance and styling—and the list goes on. Every customer's list of priorities will differ based on their individual circumstances. Because new EVs tend to be more expensive upfront than gas-powered counterparts, they may seem out of reach for many low- and middle-income consumers. This price differential can be greatly decreased thanks to the Charge Up New Jersey program.

There's a learning curve for most customers looking at EVs, so salespeople often spend the most time answering questions such as the following.

- How long does it take to charge up?
- What's Level 1, Level 2 and DC fast charging?
- Where can I find chargers?
- What's the cost of charging?
- Are incentives available?
- Should I buy a plug-in hybrid or all-electric?
- What is the vehicle range?
- What about battery degradation?

Dealers are expected to know the answers to these questions and more—and this guide will help answer them. While sales staff are experts on the vehicles they sell, they are not experts in things like charging infrastructure, utility rates, incentives and electric vehicle drivetrain systems, especially because those details are constantly changing.

Dealer training on EVs usually comes via the vehicle manufacturer, which makes sense due to the differences in vehicle range and attributes across vehicle makes and individual manufacturer's available models.

NJ CAR actively encourages member dealers to designate at least one salesperson to be the on-lot EV expert and has partnered with Plug In America on their PlugStar dealer training program.



# Marketing EVs

With all of the acronyms utilized to explain electric vehicle technology, the marketplace can be confusing for consumers. Terms such as ZEV, PEV, PHEV, FCEV, PZEV, BEV, HEV, LEV, SULEV and others are incredibly confusing for the average person.

To help combat some of this confusion, EVs should be marketed clearly, with obvious descriptors about all-electric range and how the vehicle is fueled. A consumer should not need to do separate research on a vehicle just to find out whether the vehicle is a plug-in hybrid or battery electric—this should be obvious in any advertisements.

## On-lot advertising

On the lot, a great way to educate customers about the difference an EV can make is the Fuel Economy and Environment Label that lists miles-per-gallon equivalents and information on fuel cost savings.

## EV on-lot best practices

- Designate one or more salespeople at the dealership as EV experts.
- Ensure that EVs are charged and ready for a test drive.
- Display EVs prominently.

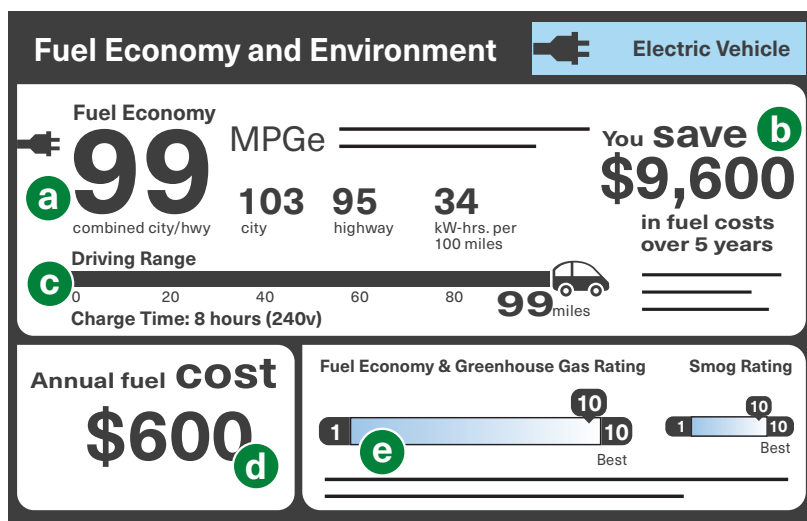
## Online advertising

Website filters on dealership websites are important to help customers looking to purchase an EV. Consumers already have the option to search through available vehicles by attributes such as model, color, price, year, body style and drivetrain—dealers should ensure that website filters also allow them to search for available vehicles by fuel type.

## EV marketing best practices

Don't assume customers know how a vehicle is fueled just by the model name or number. Be clear about what type of vehicle is being featured, without using acronyms.

- Clearly list a vehicle's all-electric range.
- Let customers know which charging system a vehicle comes with and what types of outlets can be used.
- Include "fuel type" website filters for vehicles available for sale on the dealership lot.



- a Fuel Economy – MPG or MPGe allows you to compare vehicle fuel economy, regardless of fuel type. MPGe is the number of miles the vehicle can go using the same energy content as a gallon of gasoline.
- b 5 Year Cost Comparison – How much you would save or spend compared to an average new vehicle.
- c Driving Range – Number of combined city and highway miles you can drive when the vehicle is fully charged or fueled.
- d Estimated Annual Fuel Cost – The fuel cost of driving 15,000 miles.
- e Emissions Ratings – Ratings from 1 (worst) to 10 (best) based on greenhouse gas and smog-forming pollutant tailpipe emissions.



# EV performance

Electric motors offer full torque starting from zero rpm, allowing EVs of all types and sizes to accelerate quickly from a stop—compared to internal combustion engine vehicles that usually have some amount of lag time when accelerating from a stop. With batteries typically mounted low on the chassis of an EV, it decreases the vehicle's center of gravity and improves handling characteristics.

Power output from an EV can be measured in kilowatts (kW) or horsepower (HP). For a quick comparison, kW size can be multiplied by 1.3 to show the equivalent horsepower range.

For example

- An EV might produce 120 kW, or 156 HP, during full acceleration (120 kW x 1.3 = 156 HP).
- A comparable gas vehicle in the same class may have 140 HP.

But the gas vehicle only has 126 pounds of torque compared with the EV, which has almost 300 pounds of torque. Torque is what pushes you into your seat during acceleration.



# Charging infrastructure

Charging is simple, low cost, clean and convenient, particularly when an EV is plugged in at home and filling up its battery overnight. Although EV drivers primarily charge at home, workplace and public chargers are increasingly available in communities statewide.

There are three categories of EV charging: Level 1, Level 2 and DC fast charging.

Level 1	Level 2	DCFC
<ul style="list-style-type: none"><li>• Standard current via electrical outlet</li><li>• Delivers 2 to 5 miles of electric range for every hour of charging</li><li>• Inside or outside locations</li><li>• Standard outlets and standard J1772 coupler</li><li>• In-vehicle power conversion</li></ul>	<ul style="list-style-type: none"><li>• Requires installation of charging equipment and may require utility upgrades</li><li>• Delivers 20 to 25 miles of electric range for every hour of charging</li><li>• Inside or outside locations</li><li>• Public use, often requiring payment and provider network interfaces</li><li>• Home use to decrease charging times</li></ul>	<ul style="list-style-type: none"><li>• Requires installation of charging equipment and may require utility upgrades</li><li>• 80% charge in as little as 30 minutes</li><li>• Relatively high-cost compared to Level 2 chargers</li><li>• Requires dedicated circuits</li><li>• Only available in public locations, not for residential installation</li></ul>

## Charging speed

The primary distinction between these levels is the input voltage, with higher voltages providing faster charging times.

- Level 1 uses 110/120 volts
- Level 2 uses 208/240 volts
- DCFC uses 208–480 volts and usually requires three-phase power inputs.

Numerous manufacturers produce each level of EVSE (Electric Vehicle Service Equipment), which include a variety of products with varying prices, applications and functionality.

## Home charging

As part of Charge Up New Jersey, the state plans to add an incentive of up to \$250 toward the purchase and installation of in-home electric vehicle charging infrastructure. An effective date has not been established yet (July 2021).

The cost to charge an EV at home depends on the vehicle's battery size and the local price of electricity.

While electricity pricing varies, according to the U.S. Energy Information Administration, the average cost for homeowners in New Jersey is about 13¢ per kilowatt-hour (kWh). At this price point, charging a 40-kWh EV battery with a 150-mile range would cost about 3¢ per mile (or about \$5.20 to fully charge). Meanwhile, fueling a 25-mpg gas vehicle at an average statewide gas price of \$2.52 per gallon (January 2021) would cost about 10¢ per mile (or about \$15.12 for enough gas to drive approximately 150 miles).

## Statewide electricity grid

In 2020, about 44% of New Jersey's electricity was generated by nuclear power plants, compared to the national average of 19%. Nuclear plants do not emit greenhouse gases or criteria pollutants (ozone, sulfur dioxide, particulate matter and lead), which means that nearly half of the state's energy is clean and carbon free. This makes the New Jersey electricity grid very clean and well-suited for charging electric vehicles.

## Resources for public charging

While charging at home is generally preferred due to ease and convenience, many people also charge at public charging stations. These stations can be free, pay-as-you-go or subscription-based, with prices set by charging networks or property owners. Some vehicle manufacturers provide complimentary public charging for certain vehicles.

Pricing can vary between stations, often based on the power of the chargers available. One public charging network in New Jersey charges members who frequently use their service \$1 per hour to charge on Level 2 and 10¢ per minute for DC fast charging. Another network lists its nationwide pricing as 4¢-6¢ per minute for Level 2 and from \$6.99 to \$9.99 per session for DC fast charging.

The New Jersey Department of Environmental Protection offers a public [EV charger locator app](#) that lists more than 300 charging locations. For more information about public charging networks, see the EV Resources section.





# Vehicle range confidence

Range anxiety is one of the main barriers to greater EV adoption. Dealership staff can help customers better understand range and EV charging by matching customer needs and expectations to vehicle capabilities. Framing questions based on driver usage will help gauge which EV is the most practical choice.

Two important questions are

- How far do you drive on an average day?
- How often do you take longer road trips?

BEVs are well-suited for the average person who drives roughly 40 miles a day. Determining whether the customer has access to home or workplace charging is another EV purchase variable. For customers who don't have access to workplace charging or have a shorter than 4-hour turnaround (time off the road) paired with a long commute, a PHEV may be a more compatible primary vehicle for their driving needs.

As EVs feature regenerative braking, they are a perfect choice for commuters because every time you take your foot off the accelerator the battery recaptures energy as the car brakes. Newer car models consistently continue to improve battery range due to technology advancements.





# Maintenance differences

Electric motors require less traditional maintenance services than internal combustion engines.

- An EV's regenerative braking technology drastically reduces the need for brake pad replacement.
- Services such as oil changes, spark plug replacements and most fluid transfers are unnecessary for BEVs and greatly reduced for PHEVs.

However, because of the complicated vehicle systems in EVs, in some cases it can take many hours just to diagnose a problem and only a few minutes to fix it.

Despite these differences, service departments are vital for EV customers to make repairs on their vehicle's internal switches, electrical systems, fittings, bearings, suspensions, tires and other systems. In addition, collision repair centers will continue to be utilized.

While battery replacement needs depend on use and maintenance, batteries are designed generally to last for the life of the car.

## Lack of specialized EV techs

The auto industry in general is facing a vehicle technician shortage, and since EV technicians need additional and different training than traditional techs, the shortage is only going to become more pronounced as more EVs are sold. Auto technicians who are knowledgeable about EVs will be in high demand.

Nationwide, the industry is projected to need about 46,000 more technicians by 2026, according to the U.S. Bureau of Labor Statistics. Because of the increasingly technical and computer-based systems in EVs, next-generation technicians will likely become even more specialized than they are today, have a strong background in electronics, be familiar with new technologies such as special EV scan tools and have access to even more computers in the service bay and software specific to each manufacturer.



# Common EV misconceptions



## What about battery degradation?

It is difficult to predict timelines for an individual vehicle's battery life because it depends on several variables, including owner charging habits, driving behaviors and weather conditions. Generally, over time an EV battery may lose some charging capacity and some aspects of vehicle performance may be impacted. To help remedy this, the majority of manufacturers offer warranties for an average of 100,000 miles over eight years for BEV batteries, but dealers should check with their manufacturer rep for specific details.

## Are electric cars better for the environment?

BEVs do not have tailpipes and produce zero emissions. This helps improve the air quality for the communities they are used in. EVs typically produce fewer life cycle, or total, emissions than conventional vehicles because emissions produced by electricity generation are overall lower than the process of burning gasoline or diesel. In 2020, about 44% of New Jersey's electricity was generated by nuclear power plants that emit no greenhouse gases or criteria pollutants.

With both a gasoline engine and an electric motor, PHEVs produce zero emissions in all-electric mode and only produce tailpipe emissions when operating on gasoline. However, PHEVs are more efficient than comparable gas-powered vehicles, so they still produce fewer total emissions—even when using gasoline.

Today, EV manufacturers are researching second-life options for their batteries including reusing them in household energy storage systems or recycling them to extract rare-earth metals once the battery pack has been fully discharged.

## Are electric vehicles fun to drive?

EVs have quick, smooth acceleration due to the electric motor's ability to supply instant torque to a single-gear mechanical setup. The internal-combustion concept of "engine braking"—using the vehicle's motor to slow down simply by releasing the throttle—can be replicated on an EV by using the motor as a generator, turning kinetic (motion) energy back into electrical energy using a feature called regeneration-on-demand. This is colloquially referred to as "regen mode" and can be toggled on or off on many EVs. Once drivers get used to this system, most driving is accomplished by using one pedal, resulting in a smooth driving experience and instantaneous response.

As an added bonus, electric motors have nearly silent operation, meaning that an EV's cabin is quiet and calm, helping drivers connect more with the outside environment.

## Charging seems so difficult—what if I forget?

One of the elements of purchasing an EV is a new fueling mindset. Electric vehicle owners commonly charge their EVs every night as they would their cellphone and wake up to a fully charged battery. Charger controls allow for setting on and off times to maximize charging during times of lower electricity rates. Overnight charging ensures that owners can use their EVs every day for commuting, running errands or any other purpose whether close or far from home. During the day, EV drivers can charge up at work or public charging stations—basically anywhere there's an electrical outlet. Simple-to-use apps allow EV drivers to find conveniently located charging stations near shops and restaurants.

## What is an EV's lifespan?

Due to fewer moving parts and the ability of the motor to act as a brake, there is less wear and tear on EV components. While tire pressure checks and regular inspections by certified EV technicians are recommended, data shows that electric motors, battery packs and brake parts have a much longer lifespan than equivalent gas-powered car components.

## How much do home charging stations cost?

The cost of installing EV charging at home depends on a customer's driving needs and available infrastructure. All EVs are compatible on both Level 1 (120-volt standard household) or Level 2 (240 volts, like a clothes dryer outlet). Factors used to determine which charging equipment is best include the distance of the customer's daily commute and their turnaround time (time off the road at work or at home when charging). Electricians can provide an estimate on EV installation costs.

## Is an EV a good choice for me if I live in an apartment or a condo?

Tenants can work with property managers at their apartment or condo to install on-site charging. They also are encouraged to take advantage of workplace charging and destination charging where they visit, shop and play. Nationwide, some cities are installing curbside and street charging infrastructure for residents in high-density population areas.

## What do I do on a longer trip?

Having an EV does not prevent drivers from completing road trips. Online apps and [maps](#) make it easy to locate charging stations along the route at hotels, parks, restaurants, shopping malls, etc. With some planning, EV drivers can plan fueling stops when they would normally take a break for eating or relaxing. Such regularly scheduled breaks during trips help prevent driver fatigue, a leading cause of car crashes.

## What if I need to tow my car?

Many towing companies, such as AAA, are familiar with the protocols needed for EVs. Depending on the EV's battery pack, towing may require a flatbed truck.

## How safe are EVs in a crash?

Manufacturers have created systems of fuses and circuit breakers that disconnect an EV's batteries when collision detectors become aware that the vehicle is about to sustain damage. They also publish emergency response guides for their vehicles and offer training for emergency responders as does the National Fire Protection Association.

# What do EVs offer car shoppers?



## Performance and style

EVs are fun to drive. They have quick acceleration because they produce peak torque even from a standstill, unlike gasoline engines that require time to build up their revolutions per minute by accelerating to reach maximum torque and power. EVs also have great handling, in part because the battery pack is positioned in the center of the vehicle, typically beneath the floorboard. This lowers the vehicle's center of gravity, providing superior weight distribution and stability, which improves cornering and minimizes rollover risk.

## Savings on vehicle costs

An EV can reduce fuel and maintenance bills considerably. BEVs never need oil changes, new spark plugs or smog checks. According to the [U.S. Department of Energy eGallon calculator](#) (January 2021), EV charging in New Jersey costs roughly 42% less than powering a gas-powered vehicle for driving the same distance. While charging at home provides great savings, even charging at a public station is typically cheaper than filling up with gas. There are various online tools that compare fueling costs between EVs and standard gasoline vehicles (see EV Resources section).

## Reduced environmental and health impacts

Since transportation is the number one source of greenhouse gas emissions in New Jersey and about 30 percent of the state's total smog comes from motor vehicles, cars are a good place to cut air pollution. Even limited exposure to high levels of air pollution can irritate the eyes, throat and lungs, especially for children and senior citizens. For communities in areas with high air pollution, the effects may be much worse. Long-term exposure has been linked to cancer and damage to immune, neurological and reproductive systems. The effects of air pollution are not always obvious, but its impact on public health is a serious matter.

Fewer vehicle emissions mean less pollutants in the environment, which helps air quality and promotes better health.

## Strong safety record

Safety is a top concern with all vehicles, and EVs are no different. All vehicles go through rigorous testing to ensure they meet standard vehicle regulations, but EVs undergo additional tests for limiting battery spillage, proper securing of the battery, and isolating the chassis from the vehicle's system to prevent electric shock.

# History of EVs

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## EVs have a long history in the auto market

Introduced in the 1830s, early electric vehicles ran on non-rechargeable batteries. Starting in the late 1880s, they outsold gasoline-powered cars because of their simplicity and comfort. In the 1910s, Henry Ford began to mass produce the Model T, choosing gas over electricity or steam largely because gas cars were easier to fuel up, required less servicing and could travel much further between refueling.

Renewed interest in electric vehicles began in the 1960s and 1970s as the federal government sought to reduce air pollution and concerns grew over rising oil prices and international conflicts. A combination of public and private investment spurred the production of electric vehicles in the late 1990s and throughout the 2000s.

Today, there are around 40 models of EVs available in the U.S. from various manufacturers, ranging in variety and price points to fit the interests of a larger population of car shoppers. Thanks to growing consumer demand, manufacturers are committing to release even more EV models in the future.





# EV resources



To find out more information about EVs and charging infrastructure, check these resources for dealerships and customers. In a PDF copy of this guidebook, you can click the links to go directly to the topic pages listed. If you are reading a printed copy, you will need to search the web for the organization or agency and then search for the topic.

## EV information

- [Alternative Fuels Data Center – New Jersey](#)
- [ChargEVC](#)
- [FuelEconomy.gov – Electric Cars](#)
- [DOE Electric Vehicle Basics](#)
- [PlugStar by Plug In America](#)
- [EPA Green Vehicle Guide](#)
- [Electric Drive Transportation Association](#)
- [PluginCars](#)

## EV & charger incentives

- [State sales tax exemption – Dept. of Environmental Protection](#)
- [IRS Plug-in Electric Drive Vehicle Credit](#)

## Fuel economy

- [Department of Energy eGallon](#)
- [EPA – EV Label](#)

## Clean air vehicles

- [Clean Vehicles – Bureau of Mobile Sources](#)
- [Board of Public Utilities – Clean Energy Program](#)

## Charging locations & networks

- [Alternative Fuels Data Center](#)
- [ChargePoint](#)
- [PlugShare](#)
- [Electrify America](#)
- [Blink](#)
- [Open Charge Map](#)
- [Greenlots](#)
- [EVgo](#)
- [ChargeHub](#)

## Charge Up New Jersey website

- [Homepage](#)
- [Eligible Vehicles](#)
- [Eligible Applicants](#)
- [Dealer Hub](#)



Charge Up New Jersey is the state's consumer clean vehicle incentive program designed to encourage residents to make the switch to driving electric vehicles (EVs) as a critical step to secure New Jersey's clean energy future. It is a subprogram of New Jersey's Clean Energy Program and the only program offering a cash incentive toward the purchase or lease of an EV in the state. It is managed by the New Jersey Board of Public Utilities and administered by the nonprofit Center for Sustainable Energy.