

The Time is **Now**

It's easier than ever to own and drive an electric vehicle in Western Riverside County, see how much you can save by making the switch!



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Myths and Mindsets

How today's electric cars are **quickly** eclipsing their gas-guzzling cousins

by MaTT Jo CKS



Photo by Christian Lome Li

The future of driving has arrived — and, like an electric car, it didn't make much noise when it pulled up.

Electric vehicles have been around for a while, but the models on lots today are not what many consumers have in mind when they hear the term “electric car.” In fact, the advantages of electric cars have all improved, such as lower operating costs and greater environmental benefits, but there are still a few myths that drivers should confront about driving electric.

“People have a mindset about them, and it's not necessarily a true one,” said Chris Gray, Director of Transportation and Planning for the Western Riverside Council of Governments (WRCOG). “I think a lot of people have the false idea it will be like driving a golf cart on the freeway. Everyone's going to be passing them, and they're going to be run over by a truck.”

As current models have caught up to their gasoline-guzzling cousins in performance, that perception couldn't be further off the mark — however, sales of electric vehicles are still far behind gasoline and diesel vehicles. That's why WRCOG is trying to get the word out about the benefits of electric, and how affordable the investment can be.

For instance, many customers are scared off by lot price tags that run north of \$30,000. However, federal, state and local incentives can knock off a huge chunk of that price. And the very fact that public demand for electric vehicles hasn't reached its peak can reduce costs even more.

“If you go to a car lot, the electrics tend to be pushed off to the side,” Gray said. “The anecdotal evidence is that buyers tend to get pretty deep discounts because the dealers want to move them.”

Drivers may also cite concerns over driving range and accessibility of charging stations, but both have improved. Even more standard electric vehicle models, like the Nissan LEAF, can go up to 200 miles without needing a plug.

The number of stations around Western Riverside County also continues to increase, with locations at many shopping centers and workplaces. More drivers are installing home charging stations through local

programs and rebates, getting faster charges than the “trickle charge” given by home outlets.

While most consumers already know electricity is a cheaper resource than gas, many don't realize how much money they will also save on maintenance. Take away the oil and the overwhelming number of valves, gears and other moving parts, and there is suddenly a lot less that could go wrong.

Then there's the larger benefit to driving electric, the reason why these vehicles originally entered the market — their environmental impact.

“Whenever you put gas in a car, the stuff that comes out is not going to be good for the air,” Gray said. “Who doesn't want kids to be able to go out and play any time they want instead of sitting at home using a nebulizer? Aren't we, as a society, better off when kids are healthier?”

“buyers tend to get pretty deep discounts.”

Chris Gray

Director of Transportation and Planning,
Western Riverside Council
of Governments



ELECTRIC vS. PLUG-IN Hybrid: WHAT'S THE DIFFERENCE?

Cover Photo by Christian Lome Li

Although hybrid vehicles may produce less emissions than gas, they're still not the same as a fully electric vehicle. So what's the difference? Use this guide to tell which is which, and how that can impact your wallet.

Battery Electric Vehicles

- **Energy source:** Run 100 percent on electricity.
- **Tailpipe emissions:** Zero.
- **Maintenance:** Lower costs than gas.
- **Driving range:** Based on charge.
- **Price:** Higher sticker prices, but dealers are generally more willing to slash prices, particularly on leases. Higher rebates available.

Plug-in Hybrids

- **Energy source:** Electric motor supplemented by gas engine.
- **Tailpipe emissions:** Low.
- **Maintenance:** Costs comparable to gas cars.
- **Driving range:** Based on charge, plus up to an additional 400 miles from gas fuel.
- **Price:** Sticker prices comparable to standard gas cars. Some rebates available.

When Daniel Wong got his first electric vehicle, he didn't expect it to be so fun. Now, he can't get enough.

Photo by Christian Lome Li



Torque Machines

Electric vehicles are quick right off the line — **really** quick

by Mark Ior E

Which is quicker off the line, a Ford Mustang or an all-electric vehicle? Daniel Wong wanted to know.

Wong is a Senior Public Information Specialist for the South Coast Air Quality Management District.

He's also the proud owner of a Chevrolet Bolt. For fun, he challenged a friend who owned a Mustang to do a side-by-side. Turns out the Mustang was no match for the Bolt's tremendous torque right out of the gate.

Electric vehicles are often seen as strictly business, mostly because of their fuel economy and how much less harm they cause the environment. And while these features still hold true, today's electric vehicles are also making headlines because they're fun. Really fun, in fact, satiating thrill-seekers who never thought they'd appreciate something other than a standard internal-combustion engine vehicle.

"It takes a while getting used to it," said Wong. "But once you do, it's hard to go back."

Wong walks the walk. He bought his first electric car in 2013 and is currently on his third, preferring to lease his models instead of buying outright so he can explore new models every couple of years. The high-tech nature of electric vehicles initially drew him to get his own, but Wong said his Chevy Bolt also packs plenty of punch.

"The performance — it's a totally different experience," he said. "There's no shifting, no road noise, less engine noise it's almost a little disconcerting."

While electric vehicles do have an electronic governor that caps their speeds, initial acceleration from zero to 60 miles per hour can rival most gas-fueled sports cars.

"The electric vehicle can go wicked fast for a non-sports car," Wong said, and added that newer models of the Bolt can get around 238 miles of range before they need a charge.

Some of the newer models definitely stand out visually, and can even look like spaceships. Take for

example the Infiniti QX Inspiration, which made its debut at last year's North American International Car Show in Detroit. Settling into the seat will feel like you're climbing into the cockpit of the starship, and revving up the engine may conjure images of going warp speed. Tesla, of course, has taken huge strides in recent years to change perceptions of electric vehicles, both in performance and looks.

"Initially, when electric vehicles first came out, part of their appeal and non-appeal was the fact that they stuck out," said Wong. "I think manufacturers have done a lot to change a lot of the negative stigma. They've shown that electric vehicles can be high performing and sexy."

"The electric vehicle can go wicked fast for a non-sports car."

Daniel Wong
Owner of a Chevrolet Bolt

aN ExTra do SE of Cool

Electric cars include a lot of unique features that attract drivers and make the vehicles competitive in a car market that is still primarily dominated by gas-powered cars. Here are some specs that spark consumer interest:

360 navigation system

Lets you get a bird's-eye view of your vehicle and makes parallel parking a cinch.

Navigation/touchscreen features

Tesla had some fun by adding things like the "Santa Mode" into the Model 3's touchscreen panel, or the option to model navigation systems after the game Mario Kart.

Smartphone/key card unlocking

Use a card instead of a traditional key, or sync up your smartphone via Bluetooth to unlock and lock your car.

Vertical driving position

For its E-tron Sportback, Audi has shifted the driver's position higher so it feels like the driver is behind the wheel of an SUV, but with the comforts of a smaller car.

Autonomous driving

Nissan created a feature that uses the latest artificial intelligence technology for autonomous driving and increased safety features. The future is now.

Julianna Tillquist only charges her electric vehicle when she needs to, making her commute a breeze.
Photo by Christian Lome Li



Travel in STyLE

Electric cars may use no gas, but they are **a gas** for commuters to drive

by MaTT JoCkS

Yes, electric vehicles are easy on the environment and, yes, bypassing the gas station is a money-saver. But owners of these cars know a secret that others don't: They're a great commuter car.

"It feels like you're gliding," said Julianna Tillquist, who drives into another city every day for work in her all-electric Chevrolet Bolt. "It's just so much smoother. It doesn't rumble."

Tillquist, General Counsel for the San Bernardino County Transportation Authority, said she had been contemplating making the move to electric for a while before taking the leap with the purchase of a 2017 Bolt.

"The earlier models didn't have a lot of range," Tillquist said. "When I started looking at it, that was one of my top concerns. But that has changed. The range now is much greater, and that was a big factor in deciding to purchase one."

Tillquist uses her car primarily for a Riverside-to-San Bernardino commute and for running errands. For that, she said, a full charge isn't needed. With a full charge, she has made periodic round trips to Orange County and Los Angeles without needing to recharge until she returns home.

Although many electric-vehicle owners may prefer to rent a gas vehicle or use another one of their family vehicles for long hauls like vacations or business trips, even that buyer behavior

is changing. The increasing number of public charging facilities throughout Southern California makes these trips more feasible, in addition to the expanded range of the vehicles themselves.

Meanwhile, drivers like Tillquist are enjoying benefits beyond avoiding gas stations. The much lower number of moving parts and the absence of oil and other harsh, expensive chemicals keep the operation of her new wheels easy and inexpensive.

For instance, after driving her Bolt for a year and a half and putting about 27,000 miles on it, Tillquist said, "About the only thing I've done is have the tires rotated. No oil changes or anything like that."

And if anyone has an image of an electric car struggling to keep up with traffic on open freeways, Tillquist said forget about it.

"Actually, it's easy to go too fast," she said. "It's so quiet that you don't really hear it when you're going faster. It's really zippy."

Tillquist also noted that her car has more technology and a more modern feel than other cars she has driven. Her electric vehicle has "spoiled" her when it comes to how she prefers to commute and travel.

"Now," she said, "when I drive another car, it just feels so big and bulky. I am really pleased with this car. It has totally met my expectations."

**"The range
now is much
greater."**

Julianna Tillquist,
Owner of a Chevrolet Bolt

THE baSiCS: r aNGE aNd CHar GE

Think electric vehicles can't travel far?
Think again!

- Models range between 100 to 300 miles before needing a charge.

There are currently three ways to charge an electric vehicle:

- 1 Standard home units
- 2 Public charging units
- 3 Rapid Charging stations located throughout the area.

- Public charging stations are on the rise, as are workplace stations. Spot one in the parking lot of many retail centers!
- Never worry about where to find a charge. Download a phone app to find the charging station nearest you.
- Want a home charger? Ask your utility company about rebates and special rates.



Many Ways to Save

Buyers have access to resources that make going electric *less expensive*

by MaTT Jo CkS



Photo by Christian Lome Li

When customers open their wallets to purchase new electric cars, they might as well keep them open — a lot of money is soon going to fall back in.

That's because at the federal, state and local levels there are incentive and reimbursement programs that reduce the sticker price for electric vehicles — possibly cutting it in half.

It starts with a federal tax credit that can give buyers up to \$7,500 back. The state's Clean Vehicle Rebate Project can also get income-qualified buyers a \$2,500 base rebate, plus an additional \$2,000 for low- to moderate-income buyers. In the Replace Your Ride Program, those purchasing electric and retiring their gas vehicle models 2010 or older can receive up to \$9,500. Southern California Edison offers an incentive of \$1,000 for electric vehicles purchased or leased in 2019 or after, and \$450 for those obtained before.

It all adds up to a bottom line that provides an easy entry into a new world of driving — a world that will bring even more savings, because electricity is cheaper than gas, and has a more stable pricing. National studies have shown the cost to be about half that of gas cars.

Although cars can be charged through standard outlets, it can be done more efficiently with home charging units specifically for electric vehicles. The South Coast Air Quality Management District has an incentive for that as well, offering

\$250 for units that start at \$400, with an additional \$250 for low-income buyers.

In the long run, even larger savings may be realized because routine maintenance required on gas vehicles is eliminated. With no oil to change and fewer moving parts, the likelihood of consistent major repair bills is reduced.

For commuters, the ability to drive solo in carpool lanes on the freeway represents another savings of time and, in some areas, money.

There is no lack of incentives, but there has been a lack of awareness.

"We do dealership outreach, and a lot of times the staff there don't know about all the programs available," said Vallerie Gonzalez, Equity Specialist for Clean Transportation at the Center for Sustainable Energy. "They tell us that if they had known, it would have been easier to sell electric vehicles."

The trend toward greater knowledge, however, is headed in the right direction.

"I'd say four years ago in Western Riverside County, there was very little knowledge of the incentives," Gonzalez said. "Now, I

see a lot more excitement around electric vehicles. People are seeing the potential savings."

"i see a lot more excitement ... people are seeing the potential savings."

Vallerie Gonzalez

Equity Specialist for Clean Transportation,
Center for Sustainable Energy



buy ELectriC, GET MoNEy baCk

There are rebates galore for buyers who go electric. Check them out and stack them up.

Federal tax credit

\$2,500 to \$7,500:

Depends on a vehicle's battery capacity. Can be less for models that have sold 200,000+ cars.

Clean Vehicle Rebate Project

\$2,500:

Additional \$2,000 available for buyers with moderate to low incomes. First-come, first-served from limited pool of funds.

SoCal Edison Clean Fuel Rewards Program

\$1,000:

For vehicles purchased or leased after Jan. 1, 2019. For vehicles obtained before, rebate of \$450 available.

Replace Your Ride

\$5,500 to \$9,500:

Amount varies for low- to above-moderate-income buyers replacing vehicles from 2010 or older and who live in eligible ZIP codes.

City of Riverside Alternative Fuel Vehicle Rebate Program

\$500:

For city residents who purchase electric vehicles.

SoCal Edison Charge Ready Home Installation Rebate Program

Up to \$500:

For installation and permitting of home charging stations. Limited funding available on a first-come, first-served basis.

South Coast Air Quality Management District Charging Incentive Pilot Program

\$250 to \$500:

Offsets hardware purchase of home charger stations. Amount is based on income.

The Electric Tipping point

How manufacturers are responding to the **electric** demand

by Mark Ior E



Photo by Christian Lome Li

Electric cars are a new thing, right? Wrong. In fact, the earliest electric cars began popping up in the late 19th century. Unfortunately, they quickly fell out of vogue as internal-combustion engines dominated the market.

But electric vehicles are making a comeback. Taylor York, Coordinator for the Western Riverside County Clean Cities Coalition, suggested that the modern movement toward electric cars may be at a tipping point when it comes to popularity and production.

“A lot of automakers want to be leaders in technology,” York said. “But at the end of the day, they need people to buy cars.”

Aside from cost, he said, there are three key factors affecting a consumers’ decision on whether to buy electric: range (how far one can drive between charges), overall battery storage and charging speed. This is right where research and development is concentrated.

Automakers are already shifting their focus to match consumer demand. For example, Volvo made a bold announcement that it intends 50 percent of its production line to be fully electric by 2025. Chevrolet announced it was dropping its Volt hybrid model to focus solely on the full electric version. Tesla even released its electric vehicle technology into the public domain in order to encourage other automakers to invest in electric. The sheer number of manufacturers going electric demonstrates we’re at the edge of a movement.

“As far as future vehicle tech is concerned, I think a very important factor is battery and on-board charging

technology,” York said. “The vehicles need to have a comparable driving range and cost to internal-combustion engines, and charge quickly.”

York said charging station installation continues to increase worldwide. Residents of the West Coast have a greater likelihood of finding a station than other areas throughout the United States, as California is home to about half of the charging stations in the nation.

That access will continue to grow, York said, adding that the focus will be on fast-charging capabilities like DC chargers that can typically charge a battery up to 80 percent in about 30 minutes. And, because most drivers want to be able to charge their vehicles at home, there are an increasing number of incentives to make this easier than ever before.

Tesla and other manufacturers are helping to increase access to charging stations while simultaneously growing their own electric-car portfolios.

The future of electric vehicles

only shows promise, and the market will likely catch up soon.

“The perception of electric vehicles needs to be new and novel,” said York. “Once it’s a whole package, I think adoption will increase dramatically.”

“The perception of electric vehicles needs to be new and novel.”

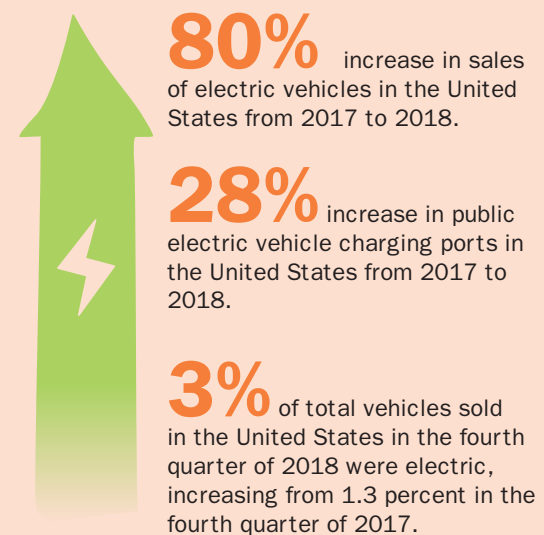
Taylor York
Coordinator, Western Riverside
County Clean Cities Coalition



availability Ty Equ al S SuSTaiNabili Ty

Since their introduction, the number of electric vehicles available in the United States has skyrocketed. People want to buy electric, and that means that there are so many more options available for those who are interested in driving sustainably.

Higher demand has led to an increase of models to choose from and better access to charging stations. Let’s see how things have changed in the last couple years alone:



Source: Bloomberg NEF 2019 Sustainable Energy in America Factbook

1

With access to the right mix of stations, electric vehicles can be **nearly free to charge.**



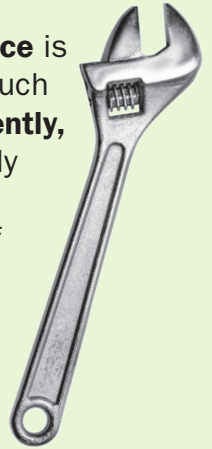
Top 10 reasons

to Buy Electric

by MaTT JoCKS

2

Maintenance is required much **less frequently**, dramatically lowering the cost of operation.



3

Electric vehicles are **powerful, quiet** and **fun** to drive.



4

Electric vehicles generate **no tail-pipe emissions**, and the generation of electricity is **far less environmentally damaging** than the extraction and processing of oil.



5

Solo drivers can use **High-Occupancy-Vehicle lanes.**



6

Tax credits and **rebates** can make electric vehicle purchases affordable. Dealers are often more willing to **go well below sticker.**



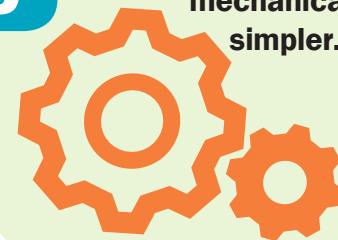
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Electric vehicles are **safe to drive.**



8

Electric vehicles are **mechanically much simpler.**



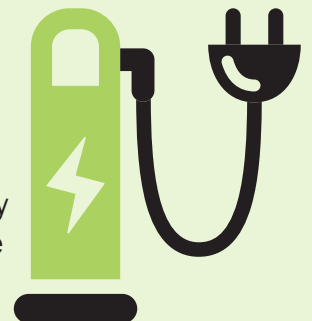
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Electric vehicles can be **fueled at home.** Utility companies may offer incentives for charging during off-peak hours.



10

Electric "**fuel**" can be **100 percent domestic.** The price of electricity is far more stable than that of oil.



Which Car **is r ight** For You?

A shopper's guide to electric vehicles*



Nissan Leaf

Compact, 4-door



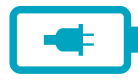
MPGe:
112
city/highway



Total range:
150
miles



Cost to drive:
\$0.98
per 25 miles



Charge time:
8 hours
at 240V



Kia Soul EV

Small station wagon, 4-door



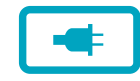
MPGe:
108
city/highway



Total range:
111
miles



Cost to drive:
\$1.01
per 25 miles



Charge time:
5 hours
at 240V



Chevrolet Bolt EV

Small station wagon, 4-door



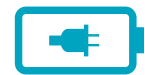
MPGe:
119
city/highway



Cost to drive:
\$0.92
per 25 miles



Total range:
238
miles



Charge time:
9.3 hours
at 240V

*MPGe refers to miles per gallon of gasoline-equivalent. Data and photos based on 2019 models.

Hyundai Ioniq Electric

Midsize, 4-door



MPGe:
136
city/highway



Cost to drive:
\$0.81
per 25 miles



Total range:
124
miles



Charge time:
4 hours
at 240V



ford focus Electric*

Compact hatchback, 4-door



MPGe:
107
city/highway



Cost to drive:
\$1.02
per 25 miles



Total range:
115
miles



Charge time:
5.5 hours
at 240V

* Model will soon be discontinued and only available used.

fia T 500e

Minicompact hatchback, 2-door



MPGe:
112
city/highway



Cost to drive:
\$0.97
per 25 miles



Total range:
84
miles



Charge time:
4 hours
at 240V



smart Eq fortwo Coupe

Subcompact, 2-door



MPGe:
108
city/highway



Cost to drive:
\$1.01
per 25 miles



Total range:
58
miles



Charge time:
3 hours
at 240V



Honda Clarity Electric

Midsize, 4-door



MPGe:
114
city/highway



Cost to drive:
\$0.96
per 25 miles



Total range:
89
miles



Charge time:
4 hours
at 240V



Tesla Model 3 Long range

Midsize, 4-door



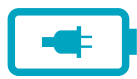
MPGe:
130
city/highway



Cost to drive:
\$0.84
per 25 miles



Total range:
310
miles



Charge time:
10 hours
at 240V





Tesla Model S 100d

Large hatchback, 4-door



MPGe:
102
city/highway



Total range:
335
miles



Cost to drive:
\$1.08
per 25 miles



Charge time:
12 hours
at 240V



Tesla Model x 100d

SUV, 4-door



MPGe:
87
city/highway



Total range:
295
miles



Cost to drive:
\$1.26
per 25 miles



Charge time:
12 hours
at 240V

More options for better Mileage (and Less Emissions)

Although they still require a gas purchase and have a larger environmental impact than fully electric vehicles, plug-in hybrid vehicles that use both gas and electricity are still a step in the right direction. See how a plug-in hybrid's miles per gallon and cost to operate compares to a fully gas-operated vehicle, and consider vehicles like the following to start on the path to electric:

bmw i8 Coupe

MPGe
69
city/highway

Cost to drive:
\$2.06
per 25 miles

Toyota prius prime

MPGe
133
city/highway

Cost to drive:
\$0.81
per 25 miles

kia optima plug-in Hybrid

MPGe
103
city/highway

Cost to drive:
\$1.07
per 25 miles

Mitsubishi outlander pHEv

MPGe
74
city/highway

Cost to drive:
\$1.63
per 25 miles

Chrysler pacifica Hybrid

MPGe
82
city/highway

Cost to drive:
\$1.33
per 25 miles

audi a3 e-tron

MPGe
83
city/highway

Cost to drive:
\$1.73
per 25 miles

Visit the U.S. Department of Energy website at www.energy.gov for more plug-in hybrid models.

Go Electric!



When it comes to purchasing your next car, it's an easy choice — go electric! With an electric vehicle, you can save money on gas and help keep Western Riverside County beautiful and the environment clean. Electric cars are fast and attractive, and can be up to five times cheaper than your standard gas vehicle. Going electric is good for the world and your pocket.

buy electric

Want more information about how to find the right vehicle for you? Visit driveclean.ca.gov and input the information about your ideal vehicle to learn more. You can also visit greencars.org to see how your current vehicle ranks with its Green Score.

Learn more about Western Riverside County transportation

If you're interested in learning more about the benefits of electric cars, visit wrcog.ca.us/173/Transportation or call (951) 405-6710. Make sure to ask about initiatives in Western Riverside County that make a commute in the region better and safer!



CHar GiNG STaTio N Map: WESTEr N r iv Er Sid E Cou NTy

Charging station locations are always being added. You can find the most recent data at afdc.energy.gov/stations.

Legend

-  Standard charging station (Level 2: 240V)
-  Fast charging station (DC: 120 kW)

Source: chargehub.com/en/charging-stations-map.html

