

ELECTRIC, HYBRID VEHICLE REGISTRATIONS SURGE

Hybrid and electric vehicle registrations continued their recent rapid increases throughout Wisconsin in 2021. While these vehicles remain a small share of the state's total fleet, their growth has big implications for the state's fuel tax revenues and its infrastructure needs and funding – especially given that recent high gas prices and federal legislation may put even more electric vehicles on the road going forward.

In less than a decade, the number of electric and hybrid vehicles in Wisconsin has more than doubled, data from the Wisconsin Department of Transportation (WisDOT) show. Combined registrations of electrics and hybrids rose from 44,178 in 2013, the earliest year for which the data are available, to 102,492 in 2021, an increase of 132%.

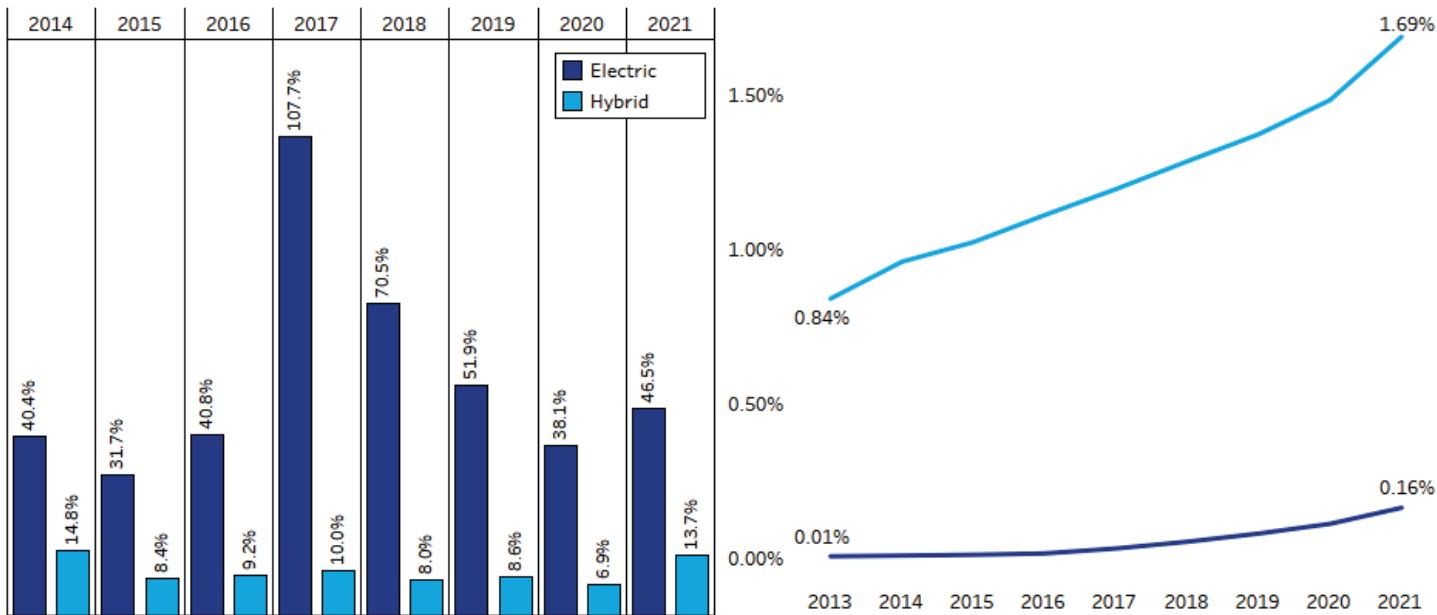
While still less than 2% of all vehicle registrations in the state, the number of electric and hybrid vehicles is on a steep upward trajectory. That is true both in urban counties with the largest concentration of these vehicles, such as Dane County, and in rural counties with fewer electrics and hybrids per capita.

This growth has implications for the state transportation fund, which relies on an excise tax on gasoline, diesel, and other fuels as its primary revenue source for financing road and infrastructure spending. The trend also is creating demand for new transportation infrastructure, such as charging stations for electric vehicles.

A heightened focus on hybrid and electric vehicles (EVs) in Washington, D.C., may accelerate these trends. Federal lawmakers and President Joe Biden in November 2021 [passed an infrastructure law](#) providing funds to expand EV charging infrastructure, and [another sweeping act signed by Biden in August](#) will [expand tax incentives to buy electric vehicles](#).

Figure 1: Hybrids & Electrics Increase Rapidly, But Still a Small Share of State's Vehicles

Year-over-year increase in hybrid & electric vehicles (left); hybrid & electric vehicles as share of total registered vehicles (right); 2013 to 2021

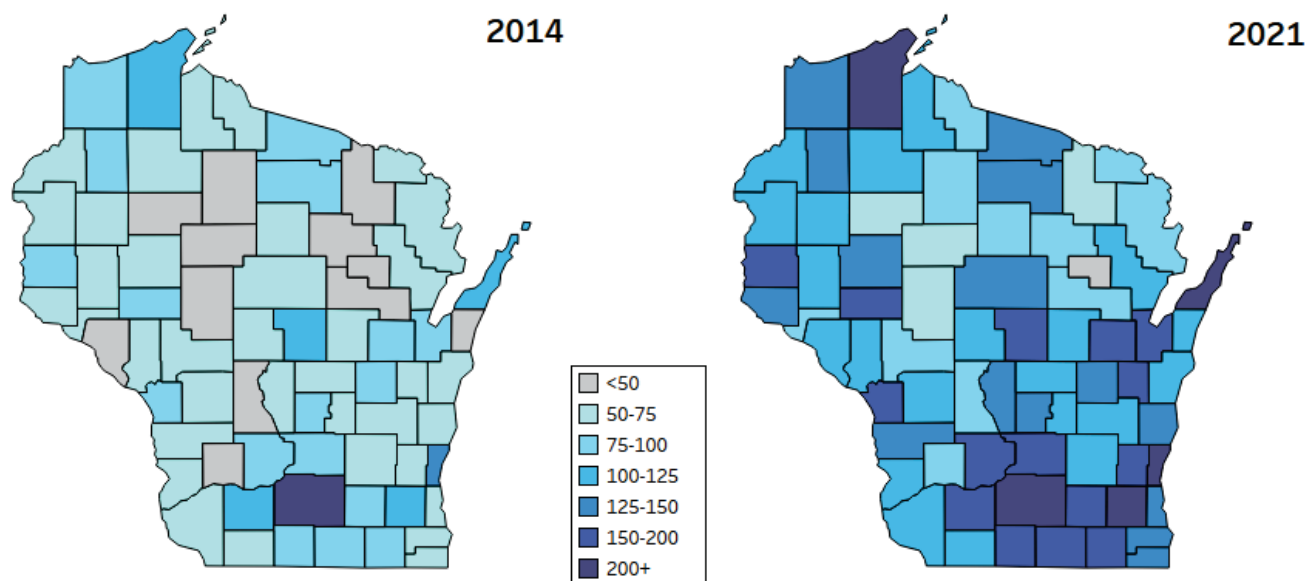


Source: Wisconsin Department of Transportation



Figure 2: Takeup of Hybrid & Electric Vehicles in All Corners of Wisconsin

Total hybrid & electric vehicles owned per 10,000 residents



Source: Wisconsin Department of Transportation

INCREASES IN METRO & RURAL COUNTIES

Statewide, the hybrid-electric vehicle trend has been driven primarily by hybrid vehicle registrations, which outnumber EVs by more than tenfold. However, electric vehicle registrations have increased at a faster pace, as shown in Figure 1 on page 1.

Hybrid vehicle registrations grew 13.7% in 2021 to 93,453, their biggest annual percentage increase since 2014. In total, they have risen 113.1% since 2013 and have averaged an annual increase of 9.9%.

Meanwhile, the total number of electric vehicle registrations is now more than 27 times greater than in 2013, when there were just 319 registered in the state. As of 2021, they are approaching 10,000 statewide. Electric vehicle registrations have increased, on average, by 51.9% each year since 2013. To put this in perspective, however, they still account for less than 0.2% of the more than 5.5 million total passenger vehicle registrations in Wisconsin in 2021.

These registrations are more heavily concentrated in metro counties, with Dane County having the highest number per capita. At 389 combined electric and hybrid vehicle registrations per 10,000 residents, Dane County has more than double the statewide level of per capita registrations. That's followed by Ozaukee, Waukesha, Door, and Bayfield counties, which suggests these more

expensive vehicles are more common in communities with higher per capita incomes.

Yet, as shown in Figure 2, these counties are far from the only places where such registrations are on the rise. From 2014 to 2021, all but two counties saw an increase of more than 50% in combined electric and hybrid vehicle registrations per capita. Twenty-eight of the state's 72 counties – a mix of urban, suburban, and rural counties – had per capita registrations increase more than 100%.

ELECTRIC VEHICLES: A NATIONAL LOOK

A recent national comparison found Wisconsin lagging many states in per-capita electric vehicle registrations. At the close of 2021, Wisconsin ranked 35th among the 50 states by this measure, according to U.S. Department of Energy data.

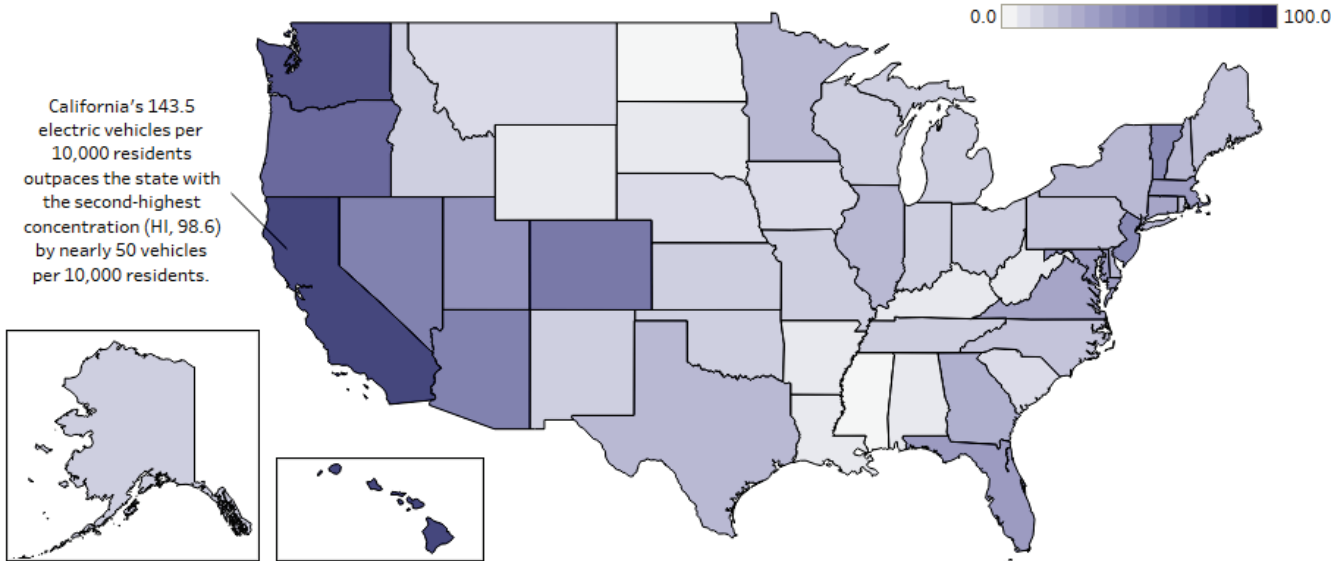
As shown in Figure 3 on page 3, EV registrations are strongly concentrated in western states, with the top five per-capita being California, Hawaii, Washington, Oregon, and Colorado. Most Midwestern states cluster relatively close to Wisconsin, with the exceptions of Illinois and Minnesota, which rank considerably higher.

One factor that could dampen the growth of electric vehicle sales in Wisconsin and other northern states is that their range can be substantially shortened – and charging time lengthened – by cold weather conditions.



Figure 3: West Coast Leads on Electric Vehicles

Total registered electric vehicles per 10,000 residents, 2021



Source: U.S. Department of Energy, Alternative Fuels Data Center

Still, electric vehicle registrations in Wisconsin are expected to continue with their dramatic growth trajectory.

WisDOT projects EV registrations will increase from less than 10,000 in fiscal 2022 to more than 217,000 in 2027 – which would be a twenty-three-fold increase in just five years. By 2050, WisDOT projects electric vehicles will account for nearly one-third of the state’s total registered vehicle fleet.

Meanwhile states farther ahead in electrification are already looking to a zero-emission future – with California recently imposing a ban on the sale of new gasoline-powered cars and light trucks starting in 2035.

FUEL TAX REVENUE IMPACTS

More electrics and hybrids on the road will affect the single largest funding source for Wisconsin’s transportation fund: revenue from the state fuel tax of 30.9 cents per gallon. The state adds an additional registration fee of \$100 for electric vehicles and \$75 for hybrid vehicles to account for the fact that these motorists pay less in gas taxes to help fund the state’s road system.

What is the net effect of those two forces? In the case of electric vehicles, the lack of any fuel tax revenue means the transportation fund is likely losing revenue even with the higher registration fee. Hybrid vehicles may be closer to revenue-neutral for the transportation

fund, since owners pay an additional fee but still use a significant amount of gasoline.

Without an adjustment in state registration fees, the rise of electric vehicles, in particular, could affect funding for infrastructure moving forward. At the same time, however, policymakers may want to consider other factors in setting the fees, such as the benefits of lower pollution and greenhouse gases with electric vehicles. Also, [the implementation of increased federal vehicle fuel efficiency standards](#) can be expected to produce additional headwinds for fuel tax revenues. Those standards are ultimately even more significant because they apply to a much larger number of vehicles.

One way to analyze transportation revenue trends over the long term is to look at fuel consumption. By this metric, taxable gallons of gasoline sold in Wisconsin in fiscal 2022 did not quite rebound to the pre-pandemic levels of fiscal 2019; the total was down 1.7%, state Department of Revenue data show.

Total gallons of diesel fuel sold, however, were up in fiscal 2022 by 10.2% relative to 2019. Since gasoline accounts for the vast majority of total sales, this meant combined gas and diesel gallons were up very slightly from fiscal 2019 to fiscal 2022, by 1.1%.

This presents a mixed picture of how the pandemic has affected fuel consumption, suggesting that gasoline sales, primarily for passenger vehicles, continue to lag



slightly. Meanwhile, sales of diesel fuel, used primarily for large trucks and freight movement, are up considerably. The net effect of these two countervailing trends is they largely negate each other in total fuel consumption.

COULD ELECTRIC VEHICLE SALES ACCELERATE?

As fuel prices have soared in recent months, electric and hybrid vehicles became a more attractive option for those seeking to pay less at the pump, making charging infrastructure more important in turn.

The federal Infrastructure Investment and Jobs Act provided \$7.5 billion for expanding charging stations for electric vehicles. [State officials recently completed, and received federal approval of, a Wisconsin Electric Vehicle Infrastructure Plan](#) to help secure \$78.7 million of those funds to build out the state's charging station network, especially along interstate and highway corridors. Some local governments have also been working to ensure the availability of charging stations in their communities.

The passage of the climate and health care legislation known as the Inflation Reduction Act will further expand federal tax incentives to buy electric vehicles. There is currently a \$7,500 federal tax credit; the legislation will extend it for another decade and lift a cap on how many vehicles are eligible – while narrowing eligibility for certain credits to only EVs assembled in North America. Used EVs also will qualify, for the first time, for a tax credit of as much as \$4,000. There are also new income limits for individuals claiming the credits.

CONCLUSION

These trends offer a glimpse of our state and nation's transportation future as federal leaders seek to transition the country away from fossil fuels as a means to combat climate change. Automakers, meanwhile, have dramatically increased production of electric and hybrid vehicles.

There are still some questions, however, about how state lawmakers plan to react to the shift toward these vehicles. Bills that were introduced, but did not pass, in the last state legislative session would have aided the build-out of electric vehicle charging stations by easing restrictions on how electric power can be sold in Wisconsin.

In considering these and other changes, state officials may also wish to consider how to balance the environmental benefits of electric and hybrid vehicles with the need to ensure both adequate funding for traditional infrastructure, such as roads, and for new infrastructure, such as charging stations.

Going forward, this emerging set of challenges will likely grow for Wisconsin's transportation finance model. Grappling with them sooner rather than later could ease our state's transportation transition from its current near-total reliance on fossil fuels to an increasingly electrified future.

