



California Electric Transportation Coalition

HOW ELECTRIC VEHICLES CAN SUPPORT A CLEANER, MORE RESILIENT ELECTRICAL GRID FOR CALIFORNIA

California is committed to an electrical grid that is resilient and reliable in the face of the climate crisis — connecting electric vehicles to the grid is a key part of the solution that will increase resiliency while also decreasing pollution and improving quality of life for millions of Californians.

THE GRID IS READY FOR ZERO-POLLUTION CARS & TRUCKS POWERED BY 100% CLEAN ENERGY.

California's grid can already handle millions of electric vehicles. Transitioning to 100% electric vehicles is achievable with a gradual build out of clean energy resources in the coming decades.

- The western grid can handle up to [24 million electric vehicles](#) without requiring any additional power plants. That's sixteen times the current number of electric cars currently in use in the entire country. Innovative solutions will be needed to help support charging infrastructure at the local grid level.
- To phase out polluting vehicles entirely, California will need to increase electricity [production](#). And, the rate of increase needed is achievable - and much smaller than during periods of peak electricity sector growth that we've seen in the past.

THE TRANSITION TO CLEAN ELECTRIC VEHICLES CAN INCREASE GRID RESILIENCY.

California can also capitalize on electric heavy-duty fleets to add electricity storage to support a cleaner and more resilient electrical grid. With bi-directional charging, heavy-duty electric truck fleets - like school buses - can feed electricity back onto the grid during periods of increased energy use.

- As charging companies roll out infrastructure that allows electricity to flow in both directions, large vehicle and truck fleets will be able to support grid resiliency by [feeding power back onto the grid](#) during periods of peak demand.
- SDG&E [plans to launch](#) a five-year pilot program later this year that will connect six electric school buses from the Cajon Valley Union School District to bi-directional DC fast chargers, with the aim of reducing grid impacts and lowering electricity costs for the school district.
- More pilots to advance vehicle to grid integration are coming online thanks to a recent [California Public Utilities Commission decision](#).

By incentivizing drivers to shift charging to off-peak hours we can further increase resiliency and reduce the need for new energy resources.

- A [pilot study](#) with BMW of North America and PG&E found that financial incentives could successfully prompt electric vehicle drivers to charge their cars during off-peak periods.
- Incorporating programs to optimize charging to non-peak hours can reduce the cost of grid upgrades over the next decade by 70%, according to a [study](#) by Boston Consulting Group.

In addition to increasing resiliency and helping save people money on their bills, [California agencies](#) have determined that putting more vehicles on the grid can also help:

- Cut climate pollution from the grid and vehicles.
- Better use renewable power to help balance day-time and night-time energy usage.
- Manage utility costs for upgrading the power distribution grid.
- Help manage the grid as conditions and electricity demand and prices change throughout the day.

ELECTRIC VEHICLES CAN PROVIDE POWER SECURITY WHEN YOU NEED IT THE MOST.

As technology advances, electric vehicles - which are essentially just batteries on wheels - can provide families and businesses with a back-up power supply in the event of a blackout or other grid emergency.

- [Major automakers are considering offering](#), electric vehicles that can provide backup power to homes, businesses and emergency services.
- [Ford's 2022 F150 Lightning](#), for example, will have the capacity to power a home for up to 10 days without air conditioning or three days with AC being used in the home.

ELECTRIC VEHICLES PUT DOWNWARD PRESSURE ON ELECTRICITY RATES

[Research shows](#) that connecting more electric vehicles to the grid, [even without new grid management technologies](#), can help [push electric rates down](#), saving households and businesses money - even if they don't own an electric vehicle.

