



August Edition 2021

Can I power my house with an electric car?

Vehicle to home technology could help keep the lights on

Electric car batteries can hold approximately 60 kilowatt hours (kWh) of energy, enough to provide back-up power to an average U.S. household for two days. Larger electric vehicles like buses and trucks have even bigger batteries and can provide more power. The American company Proterra produces electric buses that can store up to 660 kWh of energy. Electric garbage trucks and even big-rigs, with bigger batteries, are becoming a reality too.

If equipped with vehicle-to-grid (V2G) or vehicle-to-home technology, those cars, buses and trucks could prove invaluable during future blackouts. People could rely on their cars to power their houses. Municipalities, transit agencies and school districts could send out their fleets to the areas most in need. We could power homes, shelters and emergency response centers — and could keep people warm, healthy and comfortable until power could be restored.

In October 2018, the Pecan Street, Inc. started integrating the first V2G vehicle in Texas. The pilot project used a 2019 Nissan Leaf with a 40kWh battery in Austin's Mueller neighborhood and "during the first year of the demonstration phase, Pecan Street was able to have the vehicle participate as a Behind the Meter (BTM) asset to aid Austin Energy in reducing -

its peak load during ERCOT's 4CP events. Additionally, during that first year, Pecan Street did not see major battery degradation from daily charge/discharge events requested by the utility."

There are hurdles: The technology is still developing, the vast majority of EVs currently on the road do not have this capability, and utilities would need regulatory approval before bringing it to scale. But done right it could be a great opportunity.

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Pecan Street CEO Suzanne Russo recommends the "Public Utility Commission put rules into place requiring utilities to have a low-cost, quick-permitting process that allows households to allow for a bidirectional connection with the EV to the grid, which is needed to let them power their home off the vehicle (and also provide power to the grid)." She also suggests studies to quantify the value of V2G capabilities within the ERCOT marketplace and a technical study on how those homes reconnect when the grid comes back on.

There are very encouraging signs that we will start to see a big increase. General Motors is the latest major automaker to announce an intention to move toward producing only electric cars. Several major transit agencies, including in Texas, are starting to switch to all-electric buses.

But we must move faster. If we electrified the nation's transit and school bus fleets by 2030, for example, we could have more than 500,000 large mobile batteries available across the country.

To support widespread adoption of electric vehicles, we need to invest in the charging infrastructure necessary to accommodate explosive growth. We also need to make sure that as EV adoption increases, the vehicles and infrastructure are set up to use the power-transfer technology. Nissan already does this with its Leaf-to-home system. Proterra offers transit buses equipped with the technology. Dominion Energy in Virginia is working with school bus manufacturers to develop and operationalize a large-scale school bus vehicle-to-grid program.

To standardize the technology and make it accessible to everyone, utilities should seek regulatory approval to implement programs and invest in vehicle-to-grid capable infrastructure, and automakers should make it easy for consumers to install chargers that can send power both ways.

As that happens, governments at all levels should work to incorporate electric vehicles into their emergency response plans. Shelters, hospitals, emergency response centers and other buildings critical to crisis management should be equipped with the infrastructure necessary to pull power from EVs.



Heavy-duty fleets like buses and trucks present particularly promising opportunities to provide power to people in need, but all the electric buses in the world won't do any good if we're not prepared to have them charged and ready to deploy to the areas that need them the most. With more EVs on the road and careful planning and preparation, we could have millions of mobile batteries available to help keep the power on in emergencies.



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As the executive director of Environment Texas, Luke is a leading voice in the state for clean air, clean water, clean energy and open space. Luke has led successful campaigns to win permanent protection for the Christmas Mountains of Big Bend; to compel Exxon, Shell and Chevron Phillips to cut air pollution at four Texas refineries and chemical plants; and to boost funding for water conservation and state parks. The San Antonio Current has called Luke "long one of the most energetic and dedicated defenders of environmental issues in the state." He has been named one of the "Top Lobbyists for Causes" by Capitol Inside, received the President's Award from the Texas Recreation and Parks Society for his work to protect Texas parks, and was chosen for the inaugural class of "Next Generation Fellows" by the Robert S. Strauss Center for International Security and Law at UT Austin. Luke, his wife, son and daughters are working to visit every state park in Texas.



The Electric Ford F-150 Can Power Your Entire House for Three Days on a Single Charge

If you ration your power usage, Ford says it can stretch that to 10 days.

Ford's all-new electric F-150 is here, and it shows that Detroit is not messing around when it comes to the rapid shift towards electrification. Its best-selling pickup has now received the plug-in treatment, offering buyers the option to ditch gasoline and spring for a battery, complete with an available 563 horsepower on tap.

But it's not just about speed. Ford is also integrating a boatload of useful tech into this truck. From providing backup power to energize your home when the lights go out, to a portable battery to run your tools at the worksite, there's utility to show that electrification is about more than just being environmentally friendly.

The F-150 Lightning will enable a feature called Ford Intelligent Backup Power. As the name might suggest, this enables the pickup truck to act as a reserve of energy storage for homes during their most crucial times, essentially giving owners a [Tesla PowerWall](#) on wheels.

If a weather event knocks out power, or if a car happens to hit a nearby electrical pole, the F-150 will seamlessly transfer its stored energy back into the home and automatically notify the owner via a push notification sent to their phone.

Assuming an average daily household electricity usage of 30 kilowatt-hours, the F-150 Lightning equipped with an extended range battery should be able to power an entire home for three days. With rationed power usage, Ford estimates that the battery can stretch for up to 10 days of use.

Owners will want to make use of the Ford Charge Station Pro—the automaker's top-tier Level 2 charging station. The 80-amp charger offers nearly 40 percent more amperage versus the Connected Charge Station, and 60 percent more versus the mobile charger. This provides a full charge of the extended range battery from 15 to 100 percent in just eight hours. It also enables owners to transfer 9.6 kilowatts back into the home to power anything plugged into an electrical outlet. Just don't forget to keep the truck itself plugged in. For more details and information visit :

[The Electric Ford F-150 Can Power Your Entire House for Three Days on a Single Charge \(thedrive.com\)](#)

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