

# Plugging In



Randy Johnson of Norseman Electric checks the timer for a client's electric car.

Photos Chris Lavin



An EVSE plug to a newer electric car. Electric vehicle supply equipment provides a safer way to charge up – two prongs are for power, one for a ground, one for safety so that the power will shut off if things get gnarly, and one to communicate with the car's computer.

... continued from page D1

"It's a learning curve," said his son, Travis Johnson, who works for the family business. An electric car driver must traverse that curve. Some cars might have the battery capacity to drive for a day, but the supply on the home end will require two days to charge. Early electric cars with the smallest batteries would limit their range to a 50-mile radius.

"You really had to plan the trips," Federas said.

Now there are bigger batteries, and more complicated computer systems. Whether one chooses a Tesla, a Nissan LEAF, a Volt or other brand, new electric cars come with a charging package that may well require rewiring a garage, an outside charging port, or both.

A new electric car owner today has to know how big and how strong his or her battery is and how long it will last. Onboard computers help owners know how much and how long they have left, and the computers let them know when they need to dock in. But again, it is not just a plug in the wall.

"It's a lot like plugging your phone into its docking station," said Federas. If the phone runs out of power, no calls come in. If the car runs out of power, no turning the ignition; you are dead in the road.

By using EVSE, the whole system will monitor how much charge the car battery can take, as well as how much power there is to be had. In many cases plugging in at Whole Foods or the hardware store, at BART or stores that offer free charging while shopping will be different than plugging in at home.

"It depends on where you are," Randy Johnson said. "Different docks come with different specifications." Some Tesla owners, he said, carry a plethora of adapters to be able to plug into whatever outlet is available.

Another thing to consider is when to charge the car. Pacific Gas and Electric Co. has peak hours. Even though driving by electricity is cheaper than buying gasoline, charging the car during peak hours can cost twice as much as charging on the off hours – so most electric car owners charge the car while they are asleep. Some owners use timers on the systems themselves; the more modern cars utilize on-board systems to know when to "turn on" to charge.

Other drivers have applications on their personal devices that will allow them to monitor the use of their electricity by the minute. "Yay!" they will say while watching Netflix, when a window appears in the corner of the screen. "The car just came on."

Ready to go in the morning.