Rodney's Take

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Will You Give Up Control?

Last week, a number of Texans got a rude awakening. During a heat wave coupled with reduced electrical generation, power companies proactively turned up their residential thermostats to reduce the chance of a brownout.

Thousands of homeowners had enrolled in power-saving plans that gave them the chance to win $5,000 toward their electric bills. Many of the homeowners claim they had no idea that the "price" of the sweepstakes was giving power companies the right to adjust their air conditioning. They only found out when they started to sweat, and then received a text after the fact letting them know what had happened.

Such programs, supported by sweepstakes, gift cards, or straight cash giveaways, exist in several states across the country. They rely on consumers installing smart thermostats and agreeing to let power companies or electrical grid operators decide when the time is right to adjust the temperature to conserve energy. As we transition to greater renewable energy and electric vehicles (EVs), this won't be enough.

Green energy and EVs pull at both ends of the electrical grid. Green energy types, like wind and solar, vary in generation capacity based on the time of day and time of year, and electric vehicles demand power on a consistent daily schedule. The two trends collide when consumers arrive home on hot days and want to charge their cars at the same time that their air conditioning and other appliances are already in use. Something has to give, and the most likely sacrifice will be consumer choice. California Flex Alerts point the way.

Twice during the third week of June, California's Independent System Operator (ISO), which controls the state's electrical grid, asked consumers to conserve energy voluntarily to avoid brownouts. The ISO issued Flex Alerts, which call for consumers to shift use of large appliances, such as dishwashers, washing machines, and electric car chargers, to times outside of the 6:00 PM to 10:00 PM window. The authority also asked consumers to turn their thermostats up to 78°F and to shut blinds and drapes.

Some of these things are minor inconveniences, but not charging your vehicle can be a major disruption for your life the next day. Few consumers have fast-charging devices, which can replenish EVs in half an hour, in their homes. To replenish the battery on an EV, it typically takes from four hours with a level 2 charger to 17–20 hours with a level 1 charger. The longer you wait in the evening to start charging, the less charge you will have in the morning when you need to travel.

The alternative is to charge during the day when renewable electricity is plentiful, but that involves connecting and disconnecting the vehicle several times if you use the car during the day or finding a place to charge it for several hours without disruption, like a parking garage.

And that's where the fight starts.

For California to reach its goal of eliminating sales of new fossil-fuel-powered vehicles by 2035, approximately 1.2 million charging stations will need to be installed away from people's homes by 2030. Today, the state has 73,000. Along the way, EV adoption will increase electrical use by 25% across a grid that is already stressed and cannot handle high-usage days. It is true that California generates enough electricity to supply its customers, but that's only if the timing of electricity demand is matched up with the timing of supply, such as charging EVs and running air conditioners at midday, not from 6:00 PM to 9:00 PM when people return home from work and school.

Today, customers are already being asked to change their consumption habits on certain days, but bear in mind that less than 3% of the auto fleet

in California presently is electric. As that percentage grows, consumers likely will be required either to charge their vehicles during the day, if they're lucky enough to find an available charging station, or to participate in smart charging, with which they hand timing over to the grid operator and risk not getting the charge they need during the night.

It's possible that over the next five to seven years we will develop energy storage solutions, such as neighborhood battery deployments that capture energy during the day, that render this point moot. If we don't, we're likely to see consumers push back on green energy trends that encroach on their personal choices and reduce their standard of living.

The most obvious business outcome is a much slower EV adoption rate than California officials and others have forecast. Ford, General Motors, and other car companies recently increased their EV investments by tens of billions of dollars. Slower EV adoption rates will mean less return on investment for these companies and a lot of unsold inventory sitting on dealer lots. This makes the 75% and 45% year-to-date stock returns on GM and Ford, respectively, seem too high.

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Got a question or comment? You can contact us at info@hsdent.com.