

Member Advisory

Electric Vehicle Sales

Alleviating Misconceptions to Advance the Technology

What has changed?

The year 2017 may go down as the turning point for the electric vehicle. Multiple manufacturers released cars that represented true technological innovation. Volvo went so far as to announce that all of their cars will either be hybrid or electric by 2019. This announcement was so significant that it took attention away from the much anticipated Tesla roll-out of the first Model 3 off of the assembly line.

According to the Center for Automotive Research (CAR), sales of “electrified” cars were up 16.4 percent in 2017 compared to 2016. The only other car types seeing a sales increase in 2017 were CUV, SUV, and pickups. Their increases were single digits. All other segments are seeing negative sales growth.

According to CAR, electrified vehicles (hybrids and electrics) accounted for 3.1 percent of all auto sales. They actually outsold the “Large Car” segment and were only 2.1 percent behind “Luxury Car” sales.

What is the impact on cooperatives?

EVs have significant implications for the electric utility sector and could potentially affect all aspects of co-op business operations and performance. Although the EV market is currently still small, adoption is increasing. If current trends continue, co-ops could see significant penetration of electric vehicles over the next 15 years, particularly in suburban areas and bedroom communities for large cities.

The growth is expected to be a slow climb. However, long-term EV market expansion could provide significant impact, with a recent report by the Brattle Group¹ suggesting a switch to a largely electric fleet by 2050 could increase electricity demand by 56 percent of 2015 electricity sales. This would not only have an impact on utility load, but also on consumers and the environment. EPRI notes that relative to internal combustion engines, EVs can be more than twice as energy efficient, save 70 percent in fuel costs, and reduce CO2 emissions by 75 percent.²

¹ <http://www.utilitydive.com/news/brattle-wider-electrification-key-to-averting-both-climate-change-and-util/443369/>

² EPRI, Efficient Electrification, Mike Howard, July 25, EPRI Journal [Viewpoint Column](#)

Consumer research suggests that a growing number of Americans are interested in EVs and expect their electricity provider to act as a trusted resource about this new technology. This presents a new way for co-ops to engage with and serve their members. General consumer knowledge about EVs remains limited and there are many misconceptions. A survey conducted in late 2016 found that 60 percent of respondents knew little or nothing about electric vehicles and that 80 percent have never been inside of one.

Co-ops can take measures to help alleviate barriers to EV sales. A number of co-ops around the country are implementing EV programs that provide education to their members, offer discounted time-of-use rates for charging, and finance EVs through low-interest loans.

What do cooperatives need to know about it?

A 2010 survey of consumers, conducted by the Edison Electric Institute, found that almost two-thirds of respondents wanted their “utility [to] take a leadership role in encouraging a shift toward electric transportation.”

The Volvo announcement may be an indication of an industry trend in response to such positive consumer support. Volvo will produce three types of vehicles: 1) pure electric vehicles, 2) plug-in hybrids and 3) “mild hybrids.” *Autoweek* describes the mild hybrid as a car with a “beefed-up starter motor” that provides “brief bursts of electric power” to the gas powered engine. Volvo, owned by Chinese company Geely, may also have taken this initiative due to a September 2016 report that the Chinese government would mandate that 8 percent of all cars sold in that country would be some sort of electric car. Recent reports suggest that the rule may be delayed until 2019.

The outlook for electric vehicles is not all rosy and optimistic, however. The role of the federal tax credit – or rather lack of – could result in a steep decline of car sales. The current tax credit of up to \$7,500 is set to expire when an auto maker reaches 200,000 vehicles sold. Companies such as Tesla, Nissan, and Chevy are approaching that mark. Some analysts believe that once the credit expires, there will be a decline in the number of middle class consumers purchasing the vehicles. This did happen when the state of Georgia eliminated their credit in July of 2015. There was a sharp decline in EV sales. Higher end Tesla sales rebounded, but cars such as the Leaf – which are targeted for middle class consumers – never rebounded.

Misconceptions on Pricing

According to a study by UBS, electric vehicle prices will drop and could be the same price as traditional vehicles as early as 2018. However, the same survey showed that a majority of consumers perceived the vehicles as being expensive.

Much of the media focus on electric vehicles has been on Tesla. Tesla is a premium brand and their vehicles start at price points that are high. Some media outlets have described the Model 3 as “affordable.” With a starting price of \$35,000, the Model 3 is more expensive than half of the new cars sold every year. A fully loaded Model 3 can go for \$60,000 or more. This will certainly not be seen as ‘affordable’ for most consumers. However, many EVs on the market are priced lower than the Model 3, but they do not receive the same media attention. So, consumers are left with the impression that EVs are expensive compared to traditional options.

The perception that electric vehicles are only for the wealthy is one that is evident when looking at the Ford Focus. *Truecar.com* analyzed buyers of the Ford Focus EV and the traditional Ford Focus. The average Ford Focus buyer was 46 years old with a household income of \$77,000. The average Focus EV buyer was 43 years old with a household income of \$199,000. The EV version is only \$8,000 more expensive, while the annual income of the EV buyer is more than 2.5 times higher.

Concerns about Infrastructure

The USB study also showed that consumers were worried about a perceived lack of charging stations. Much of the focus of electric vehicle programs has been on charging infrastructure. There is certainly value to having charging stations at work or the store, but it is most likely not necessary. In fact, focusing on charging infrastructure could reinforce the misperception that EVs lack sufficient range to perform routine tasks.

Most electric vehicles are capable of performing the daily commute, taking kids to practice, and picking up the groceries on a single charge. Range anxiety does exist. It is real. But, education may be the best tool to combat range anxiety, instead of extensive and expensive charging infrastructure.

Charging at home, off peak will be a win-win for the consumer and the co-op. A growing number of co-ops are offering off peaking charging rates that lower the cost of charging, all without creating an extensive network that really is not needed.

An EV is most likely not a good fit for a household that only owns one vehicle, has an exceptionally long commute, or has towing or hauling needs. They are not for everyone. But, in multi-vehicle households, the EV could be the ideal daily commuter, as the operation and maintenance costs are lower.

Increasing the numbers of charging stations in our communities is a viable strategy. However, placement should be made where they have the biggest impact. Since most consumers can accomplish all of their typical daily driving on a single charge, it may not be a good choice to have charging stations at grocery stores and shopping centers. Instead, charging stations at Interstate exits geared for long distance travelers may be a better option. Employer based stations, where the employer incorporates access to EV charging as part of the employee benefits package, is another good option.

The Road Forward

For electric vehicles to gain acceptance and market share, consumers will need to understand their capabilities and that they are affordable. Buying a car is typically a stressful process for consumers. The dealership is not the place to be introduced to an electric vehicle for the first time. Educating members through a planned effort is an effective way to build awareness and increase acceptance.

The following table lists the number of zero emission vehicles in each state. There are a couple notable points to take from this chart:

- *A vast difference between California and the rest of the nation:*
The state, utilities, local communities, and auto manufacturers in California have focused their efforts on growing the market in their state.
- *States that have the most cars also have large urban and suburban areas:*
Electric vehicles should not be viewed as an urban vehicle only. People in large cities buy F-150s and people in rural areas buy Priuses. Much of where the sales take place is driven by local dealers and what they believe they can sell. Consumer and dealer education on the value of electric vehicles can and does change people's perceptions of the vehicles.

Zero Emission Vehicle Sales by State 2011-2017

(Source: <http://drivingzev.com/>)

California	279,054	North Carolina	6,634	Oklahoma	1,204
Georgia	25,989	Hawaii	5,922	Delaware	1,193
Washington	23,468	Connecticut	5,546	District of Columbia	1,193
New York	22,375	Wisconsin	5,153	New Mexico	1,098
Florida	21,793	Tennessee	4,830	Kentucky	1,071
Texas	17,751	Minnesota	3,609	Nebraska	975
Michigan	13,080	Utah	3,525	Rhode Island	970
New Jersey	12,556	Missouri	3,485	Louisiana	930
Oregon	12,380	Indiana	3,247	Idaho	744
Illinois	12,022	Nevada	3,164	Arkansas	580
Massachusetts	9,956	South Carolina	1,795	Montana	490
Pennsylvania	9,313	Vermont	1,724	West Virginia	446
Colorado	9,302	New Hampshire	1,605	Mississippi	340
Maryland	9,042	Iowa	1,529	Alaska	306
Arizona	8,452	Maine	1,291	South Dakota	224
Virginia	7,786	Kansas	1,278	North Dakota	149
Ohio	6,700	Alabama	1,274	Wyoming	140

Co-op Initiatives

NRECA members, such as Peninsula Light Company, are starting programs to identify EV owners to determine current and future impact to their system. They use a combination of methods including analyzing sales data by zip code and their member service representatives ask callers about EV ownership.

Jonathan White, Director of Member Service/Marketing, said *"The bottom line is, EVs aren't going to be the saving grace for recovering lost load for at least 5 years or more. EVs will of course provide some additional load initially, but not enough to get excited about."*

Longer term is where the significant impact will come for load, the environment, and consumers, as noted previously.

Other cooperatives, such as Vermont Electric Cooperative, offer rebates on EVs; and others are rebating or installing charging stations.

Co-ops have several options when considering how or if to promote electric vehicles to their members. These include:

- Monitor the development of the technology and possible impacts that it could have on the distribution system.
- Monitor the adoption patterns within and around the service territory.
- Consider adopting an EV rate to encourage off peak charging and increase potential savings to the member.
- Educate consumers on the advantages and disadvantages of EVs.
- Work with local employers on strategic charging station deployments.
- Offer financing options for consumers purchasing electric vehicle supply equipment.
- Consider offering rebates to members interested in purchasing a car.

Surveys show high satisfaction levels among electric car owners. The cars perform well from a noise and performance perspective. Co-op sponsored ride-alongs or track days can go a long way in educating the public about the vehicles. Focusing on truly affordable models like the Ford Focus and educating consumers on the savings associated with leasing an EV versus the full monthly payment can go a long way to furthering the adoption of electric vehicles.

Additional Resources

- [Managing the Financial and Grid Impacts of Plug-In Electric Vehicles](#)
- [Keys to Developing a PEV Program For Your Electric Cooperative](#)
- [Electric Vehicle Resource Page](#)
- [US Department of Energy Alternative Fuels Data Center Incentives Database](#)

Contact for Questions

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