

Technology Advisory

Electric Vehicles: *New models poised to make a splash*

What has changed?

Chevy plans a national rollout Chevy Bolt all electric vehicle (EV) in 2017, and Tesla is scheduled to begin production of its Model 3 in mid-2017. Car dealerships in Southern California are reporting that Bolts are currently in transit to their dealerships.

Electric vehicles:

- Represent an opportunity to lower the emissions footprint of consumers
- Offer the potential to lower the cost of fuel purchases for consumers when using off-peak charging rates
- Provide the co-op with a new load to serve during off-peak hours
- Could offer utilities the option to use excess battery power during peak. This is a future use of EVs, as this ability is not currently enabled in the United States and automakers have not indicated when this feature would be available.

What is the impact on cooperatives?

EVs also offer a new way for co-ops to engage with and serve their members. 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. 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.

Although the market is still small, adoption is increasing. EVs have significant implications for the electric utility sector and could potentially affect all aspects of co-op business operations and performance; and will be a cornerstone of “environmentally beneficial electrification.” For more information, see related reports:

- [Beneficial Electrification article: The dawn of 'emissions efficiency' \(Electricity Journal\)](#) - August 2016,
- [Environmentally Beneficial Electrification](#) (Electricity Journal, November 2015), and
- [Environmentally Beneficial Electrification: Electricity as the End-Use Option](#) - November 2015).

What do cooperatives need to know or do about it?

The Bolt has several characteristics that make it unique. The first is the EPA estimated range of 238 miles per charge. The Bolt also offers the driver the ability to select one pedal driving. This feature allows the car to slow down or even stop simply by letting your foot off of the accelerator. By not using the traditional brake pedal, the range of the vehicle can be extended. The Bolt comes with a base price of \$37,495 – which is \$3,000 higher than Tesla's Model 3. Chevy has beaten Tesla (Model 3) to the market by a year.

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."

EVs also have the potential to reshape the utility business model. Electrified transportation includes not only light-duty EVs but also the electrified "goods movement," encompassing everything from trains to garbage trucks to delivery vehicles. If more vehicles are fueled with electricity in the coming years, a significant share of the \$224 billion that American consumers spend annually on gasoline would be redirected to the electric utility sector.

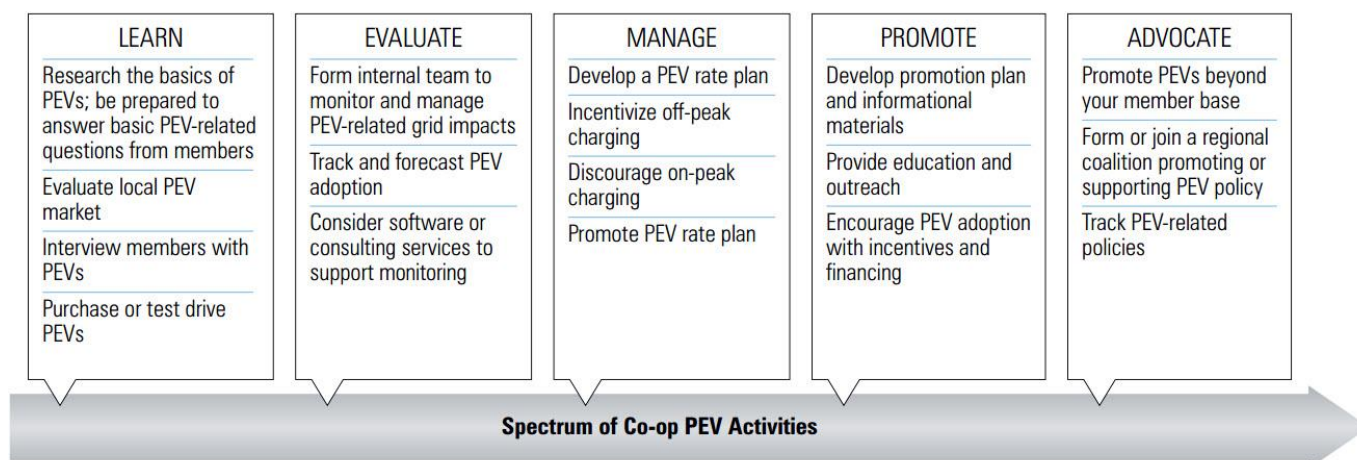
Uncontrolled EV charging during peak can potentially pose costly grid and financial risks. Co-ops may need to make distribution grid upgrades to accommodate the new EV load or purchase more power to meet higher peak demand.

Co-ops can avoid or minimize these risks by monitoring EV adoption and associated grid impacts. All modern EV models can be programmed to ensure that charging occurs during off-peak periods; charge management programs involve co-ops communicating and providing technical assistance about off-peak charging methods and schedules.

Some people are advocating using the energy in the car's battery to provide backup power to home in during an outage or as a resource for peak demand reduction. Currently, the auto manufacturers do not allow this capability to be used in cars sold in the U.S. However, co-ops should begin to think about how to incorporate these resources, if they were to become available in the future.

How are cooperatives rising to the challenge?

In response to member interest in EVs, some co-ops are beginning to implement programs that will facilitate EV adoption. Typically, co-ops are implementing special rates to encourage off peak charging. The following chart is from a related NRECA report, [Keys to Developing a PEV Program For Your Electric Cooperative](#), and provides steps in the development and implementation of an EV program.



Source: *Keys to Developing a EV Program For Your Electric Cooperative*, NRECA Business & Technology Strategies Report

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 on Cooperative.com](#)

Contact for Questions

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