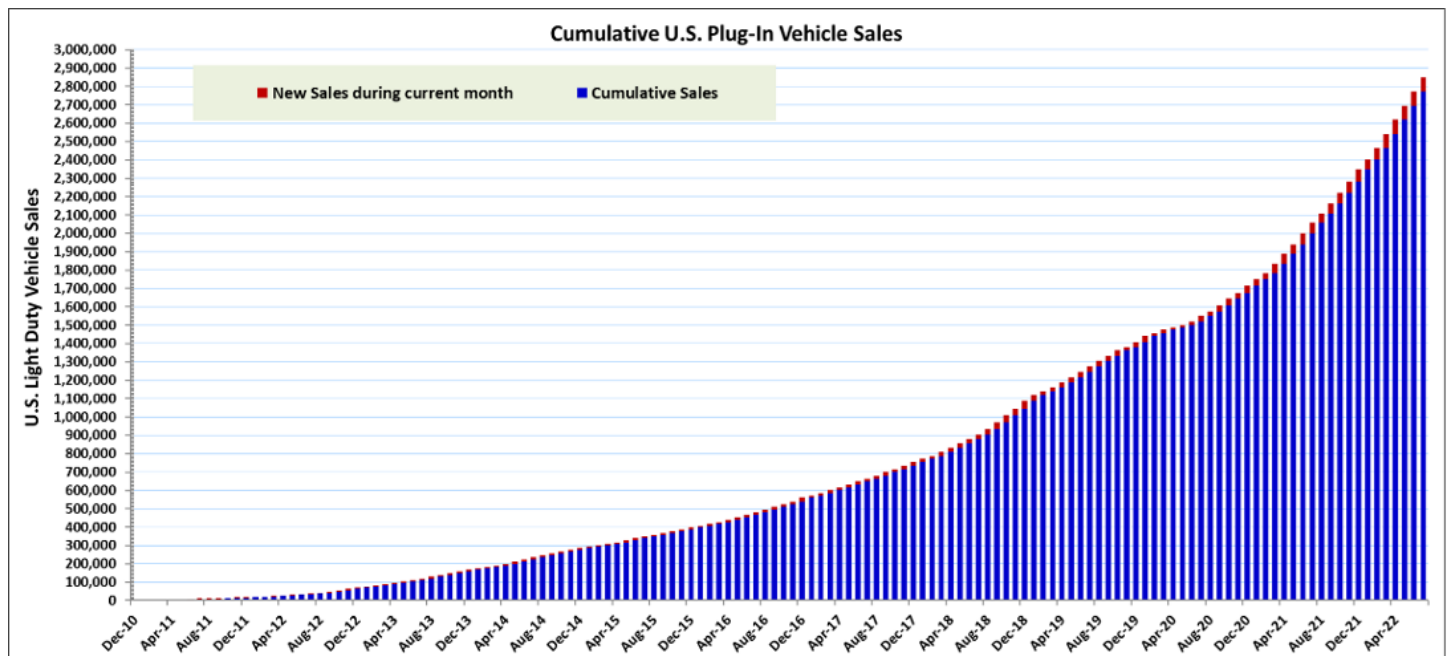




IS YOUR EV STRATEGY READY — YET?

Over 2.8 million electric vehicles (EVs) — both plug-in hybrid and battery electric vehicles (BEVs) — are on U.S. roads today.¹ BEV sales now exceed 7% of light-duty vehicle sales.² This suggests that plug-in hybrids served as a transitional technology, but BEVs are now ready for prime time. In fact, the Department of Energy predicts a 38% increase in electricity consumption by 2050, mostly due to a high penetration of electric vehicles.³ The recent passage of the federal Inflation Reduction Act and actions at the federal and state levels emphasize that EVs are now mainstream. Utilities need to take action and plan accordingly.



Source: Argonne National Laboratory

¹ July 2022 data from Argonne National Laboratory, "Light Duty Electric Drive Vehicles Monthly Sales Updates," <https://www.anl.gov/esia/light-duty-electric-drive-vehicles-monthly-sales-updates>.

² Ibid.

³ The Pew Charitable Trusts, "Electric Cars Will Challenge State Power Grids," 2020, <https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2020/01/09/electric-cars-will-challenge-state-power-grids>.



In light of the electric load and sales implications that come with the growing acceptance of BEVs and the favorable regulatory climate, many utilities have developed EV strategies that include expanded public EV charging infrastructure, EV and/or electric vehicle supply equipment (EVSE; e.g., chargers) purchase incentives, market education, modified rates, and new programs such as managed charging to support BEV. Just as we did in 2016,⁴ MCR again poses the question: **Is your EV strategy ready?**

UTILITIES AND ELECTRIC VEHICLES: OPPORTUNITIES AND CHALLENGES

The rapidly increasing rate of adoption of BEVs presents a significant opportunity for electric utility companies. EVs offer electric utilities the potential for valuable new revenue sources that will help replace lost kWh sales from energy efficiency programs and customer-owned distributed generation. On average, EV charging adds an estimated 2,200 to 3,000 kWh/year per home, representing a 25% to 40% increase in total household consumption. Outside the home, commercial BEVs, from small box trucks to tractor trailers and buses, as well as specialty work vehicles like airplane tugs and forklifts, are now appearing in the market.

The challenges of delivering and managing the new loads — and engaging the customer in new, positive ways — demand a strong, utility-specific strategy.

In addition to increased electricity sales, EVs also create investment opportunities and challenges. As residences move from 1 kW Level 1 chargers to Level 2 chargers of 9 kW or more, and as Level 3 direct-current fast chargers are now commonly rated at 150 kW of capacity per charging port with two to four ports per charger, utilities are facing the opportunity, and challenge, of creating new business models to support EV rollouts and building infrastructure to serve these loads. As utilities facilitate the build-out of EV charging infrastructure by creating new programs and incentives or potentially owning and operating EVSE, they should focus on asset and load optimization by investing in technologies and developing programs to manage the loads with appropriate rate designs.

EV adoption also presents an opportunity for utilities to increase customer engagement and improve the customer experience by becoming a champion of the changes that customers need to facilitate continued uptake. This might include introducing load control initiatives, using EVs as distributed energy resources, and better understanding customer needs, preferences, and usage behaviors.

This market is rapidly evolving, and “plain vanilla” strategic approaches will not be enough. To take full advantage of the EV opportunity and meet the challenges it brings, electric utilities need to define and answer a wide range of questions, such as:

- Can the timing of EV charging be influenced and advantageously managed through new rate structures?
- If more revenue is created by EV charging sales, will margins necessarily increase?

⁴MCR Performance Solutions, “MCR Point of View: Electric Vehicles Are Here. Is Your EV Strategy Ready?,” 2016, <https://www.mcr-group.com/utility-transformation/insights/electric-vehicles-are-here-is-your-ev-strategy-ready/>.



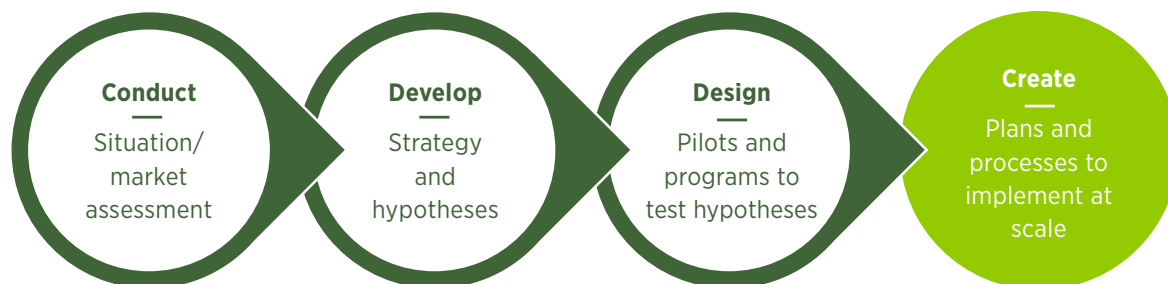
- What new rate offerings will be developed for EV customers?
- What new regulatory mechanisms need to be in place to enable or promote EV sales?
- What role should utilities play in developing the charging infrastructure? Does it make sense to own and operate EVSE? Will regulatory commissions allow utilities to earn a return on EVSE rates?
- Does it make sense to partner with third-party companies to build EV charging infrastructure? To promote the sale of EVs? How would partnering affect a utility's return?
- Are there specific concerns or opportunities for rural or low-income communities?
- What types of financial incentives (if any) should be offered to promote EV purchases or encourage others to invest in public charging infrastructure?
- What impacts will EV charging have on the distribution system? Will the clustering of EVs in a concentrated portion of the system cause reliability issues?

UTILITIES AND EV STRATEGY: IT'S TIME TO DEVELOP (OR REVISIT) YOURS

To fully capture the potential of EVs, electric utilities need to develop or update a well-thought-out EV strategy and shape and inform the ongoing, intensifying growth of the EV market. To allow the market to be shaped for them will likely be disastrous for both the utility and its customers. The strategy needs to address both the opportunities and challenges of EVs from financial, operational, customer service, and regulatory perspectives.

MCR's unique approach to developing an EV strategy centers on detailed examination of the fundamental strategies that a utility can follow to address the EV market. MCR developed these strategies based on our significant research and experience in the market; we focus on the full range of possibilities, from conservative to high risk/high reward. Each fundamental strategy is built on a core belief regarding current and future markets that may or may not apply to a particular utility.

Using these fundamental strategies as a starting point, MCR's approach employs a multidisciplinary team to complete the following steps:



The results of this approach are designed to be actionable. The detailed strategy provides a clear direction for what the utility will do and, equally important, what it will not do as it addresses the EV market. The pilots are designed to achieve specific objectives. Programs are designed at a level of detail that can guide implementation by the utility's marketing, sales, operations, customer service, customer programs, and regulatory organizations.



UTILITIES AND THE NEW EV MARKET: A PARTNERSHIP IN SUCCESS

Electric vehicles have arrived. It's not a question of whether the market will take off — it is doing so now. EVs will affect every electric utility, so utilities should plan and act now to optimize the vast potential and minimize the considerable supply and delivery risk EVs are bringing for customers, shareholders, stakeholders, and all of society.

Standing by and watching the market continue to develop, or executing a strategy developed when the EV market was still nascent, is fraught with political, regulatory, operational, and financial risk. Developing a well-thought-out strategy or updating an existing one, and testing it through research and development and pilot programs, will ensure that electric utilities proactively shape the evolving regulatory, pricing, and business impacts of EVs. And, more importantly, a proactive approach will allow utilities to take advantage of the opportunities presented by the ever-growing EV market.



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MCR is a management consulting firm serving the utilities industry. We are different because we focus on just a few of the critical issues that electric, natural gas, and water companies face. These include the need to find new opportunities in changing markets, develop new sources of revenue, manage risk, control costs, and achieve fair treatment in the regulatory process. We transform utility company performance through deep industry insights and innovative solutions. Contact:

Thomas S. Crooks

Vice President, Energy Products and Services
MCR Performance Solutions, LLC
3161 Cameron Park Drive, Suite 225
Cameron Park, CA 95682
530.313.3384
tcrooks@mcr-group.com

Cynthia A. Menhorn

Vice President, Regulatory Services
MCR Performance Solutions, LLC
155 Pfingsten Road, Suite 155
Deerfield, IL 60015
724.244.5333
cmenhorn@mcr-group.com

Edward Schmidt, Jr.

Director, Energy Products and Services
MCR Performance Solutions, LLC
155 Pfingsten Road, Suite 155
Deerfield, IL 60015
203.427.1115
eschmidt@mcr-group.com

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