As the electric vehicle (EV) market expands in the United States, utilities are going to play a central role by increasing access to critical charging infrastructure and minimizing the potential grid impacts of the new load created by new concentration of EVs, among other things.

That was one of the key points highlighted in a new report, *State Strategies to Advancing the Electric Vehicle Marketplace* [2], which the Council of State Governments published recently as a resource for state officials. The report identifies strategies and recommendations that states can undertake—either by themselves or with other partners including electric power utilities—to propel the EV marketplace, based on actions already taken in some states or as recommended by key EV stakeholders.

With the number of EVs on U.S. roads reaching 1 million and expected to grow significantly, the tide is turning among electric utilities from seeing EVs as a problem to betting on their success. Leading utilities are beginning to see how EVs can be turned into an asset to make the grid more efficient and profitable.

Southern California Edison (SCE) is one such utility. SCE is the primary electricity supply company in Southern California, serving 14 million people. The utility’s near-term goals [3] are the acceleration of transportation electrification, including 7 million EVs on the road by 2030, and electrifying one-third of space and water heaters in their territory.

The Council of State Governments (CSG) interviewed SCE’s Laura Renger, who is the principal manager of air & climate in their regulatory affairs division, to learn how the utility is investing in EVs. Renger’s answers, slightly edited for clarity, are produced below.

In previous blog posts, CSG has interviewed other stakeholders including utility regulators [4], utilities [5], and state policymakers [6] to get their perspective on how they are preparing for the coming surge in EV sales. CSG also published an infographic outlining *8 Reasons Why Electric Vehicles Are the Future of Transportation* [7].

The EV market has grown rapidly since 2010, both in volume and diversity. Can you share what this growth means for the nation’s utilities and what are the ways in which this growth impacts utility operation and planning?

Laura Renger: Utilities are a key driving force in the acceleration of transportation electrification. As California—and the nation—move towards policies to address air pollution and climate change, transportation electrification becomes increasingly important. California, in particular, will require substantial transportation sector electrification to meet its state environmental goals. Governor Brown has set a target of 5 million zero-emission vehicles in California by 2030 [8], and SCE’s analysis [9] finds that nearly 7 million EVs will be needed statewide, in combination with other measures, by 2030 to meet California’s greenhouse gas emissions reduction goal.
Utilities are uniquely positioned to help advance further EV growth by readying the electric grid to accommodate the growing EV market, and to provide the infrastructure to support EVs. As the providers of the fuel for EVs, electric utilities also much be cognizant of keeping fuel prices affordable, while ensuring grid reliability and safety of all customers. Accelerating and sustaining light-duty EV adoption requires market transformation; using the success and learnings from initial pilots and programs, utilities can help to spur this transformation—thereby anticipating customers’ evolving needs, and responding to the state’s environmental policy goals.

**Given the rapidly evolving EV landscape, how can utilities like yours best position themselves and their customers for an EV future?**

**Laura Renger:** Time is of the essence to meet California’s environmental policy goals, and it is important that utilities continue the progress that they’ve made with programs and pilots that support the growth of EVs. Of course, utilities can’t do it alone. We need the support of our regulatory agencies to approve applications for these efforts, and we need stakeholders to work with us to advance a clean transportation future. SCE and the other California utilities have been working with regulators and stakeholders to advocate for a regulatory framework that supports the need for a more expedited process to approve transportation electrification in California.

Utilities are in a unique position to grow the EV marketplace by providing guidance to customers to reduce infrastructure costs and market barriers by supporting charging and safety standards. Utilities must also be responsive to customers’ changing energy demands and their desire for choice in their energy options—including rate options for customers with EVs, and sufficient charging infrastructure throughout our service territory.

According to a recent SEPA report, about 74% of utilities remain in the early stages of planning for growth in EV ownership. From the utility perspective, what are some of the key challenges in EV deployment?

**Laura Renger:** For SCE, it is a priority for us to maintain our core values of providing reliable, safe, clean affordable energy while also expanding access to charging infrastructure to all customers. Electricity, as a fuel, must be cost competitive to EV customers. That means we need to ensure that, as we roll out the programs and infrastructure for EV, we ensure that electricity is relatively inexpensive.

Another challenge we face in California is working towards stable public policies that provide predictability to our business customers. We are still far from meeting Governor Brown’s 5 million EV goal for the state, and we are encouraging California to promote EV adoption at all levels. As one example, we will need to continue to encourage more first adopters of EVs so that we can create the secondary use market for EVs.

In California and in many states across the country, we cannot achieve vital air quality and climate goals without increased adoption of EVs. That’s why SCE supports strong greenhouse gas emission standards and maintaining California’s authority allowing it to set its own standards due to the severe air quality conditions we continue to experience. We believe federal review of these standards should recognize the economic opportunities afforded by investment in electric vehicle technologies, and the beneficial environmental impact of these standards.

When it comes to investment in medium- and heavy-duty charging infrastructure, we don't want to repeat what happened with light-duty vehicles, in which vehicle adoption got ahead of the charging infrastructure needed to support it. We want to learn from our initial efforts, such as the Charge Ready Pilot, and build on our successes.
How are you working with energy regulators, politicians, and other stakeholders to achieve progress toward an electric vehicle future?

Laura Renger: As previously mentioned, for California, achieving our state’s greenhouse gas reduction and air quality goals requires substantial growth in electric transportation by 2030 – including adding millions of zero-emission vehicles on California’s roads. The California Public Utilities Commission (CPUC) and the California utilities can and should play a key role in supporting that market transformation. Because EV adoption is expected to be – and needs to be—growing at a rapid pace, implementing regulatory frameworks to guide and swiftly approve utility programs and services for transportation electrification makes sense.

Here are a few examples of recent SCE efforts to achieve an EV future:

• In the summer of 2018, SCE filed its Charge Ready 2 Application to pursue programs that will advance further Transportation Electrification throughout California. Charge Ready 2 \[11\] includes the following proposed pilots and programs:
  1. Expanding SCE’s Charge Ready Pilot’s “make-ready” approach to 32,000 EV charging ports at workplaces, multi-unit dwellings, destination centers, and fleets. 30% of installations will be in Cal EPA designated as “Disadvantaged Communities,” – areas in our state with disproportionate levels of pollution and other socio-economic barriers.
  2. Marketing and Education campaign to address EV adoption barriers
• SCE is also pursuing Medium-Duty and Heavy-Duty Transportation Electrification Pilots and Programs, including:
  1. Charge Ready Transit Bus Program – a “make ready” program and rebate for transit bus charging for early adopter transit agencies
  2. Port of Long Beach Pilot – a make-ready program for supporting electrification of off-road port vehicles (rubber tire gantry cranes and yard tractors)
  3. Charge Ready Transport (MD/HD Program) – market-readies for electric trucks, buses, shuttles, port and material handling equipment; along with charging station rebates for transit / school buses and sites in Disadvantaged Communities.

How do you expect the EV market to change in the future?

Laura Renger: With SCE’s publication of the Clean Power and Electrification Pathway \[9\], which sets forth our plan for achieving reduction in GHG emissions of 40% by 2030, we committed to advancing a future that embraces clean energy through electrification. We absolutely believe that we can achieve our goals of replacing millions of gas cars, trucks, and buses with EVs by 2030. It is an ambitious goal, but it is also happening as we speak. Cars are coming, customers like driving them, the cost of fuel is lower, maintenance cost is lower, and there are so many new cars on the market.

But there are three barriers we must continue to overcome to ensure it happens: awareness, affordability, accessibility. Education and awareness pose huge barriers. That is why Charge Ready 2, our most recent infrastructure proposal, includes a robust electric transportation marketing, education and outreach program for our customers. To succeed, and get costs down, everyone needs to play a role, as we are seeing in SCE territory. We have interest in the market from our customers (more than 500,000 EVs in California, with greater than 6 percent of new vehicle sales in our state being plug-in electric); OEMs (each year we see a lot more models coming to market); EVSE providers; and employers (Hyundai, Panda Express, SpaceX and Cathay Bank are among the participants in our Charge Ready pilot).

Also regional action and partnerships are important. The Zero Emissions 2028 Roadmap \[12\] was announced recently by Mayor Garcetti, targeting acceleration of TE in the greater Los Angeles area to
reduce GHG emissions and air pollution by an additional 25% beyond our existing state goals by the
time of the Olympics in 2028. This is an effort convened by the Los Angeles Cleantech Incubator
(LACI), with leadership group that includes SCE, the California Air Resources Board (CARB), City of LA,
County of LA, Los Angeles Department of Water and Power (LADWP), and LA Metro. This group is
partnering with EV manufacturers, technology developers, university researchers, and others, to bring
cleaner air to our region.

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