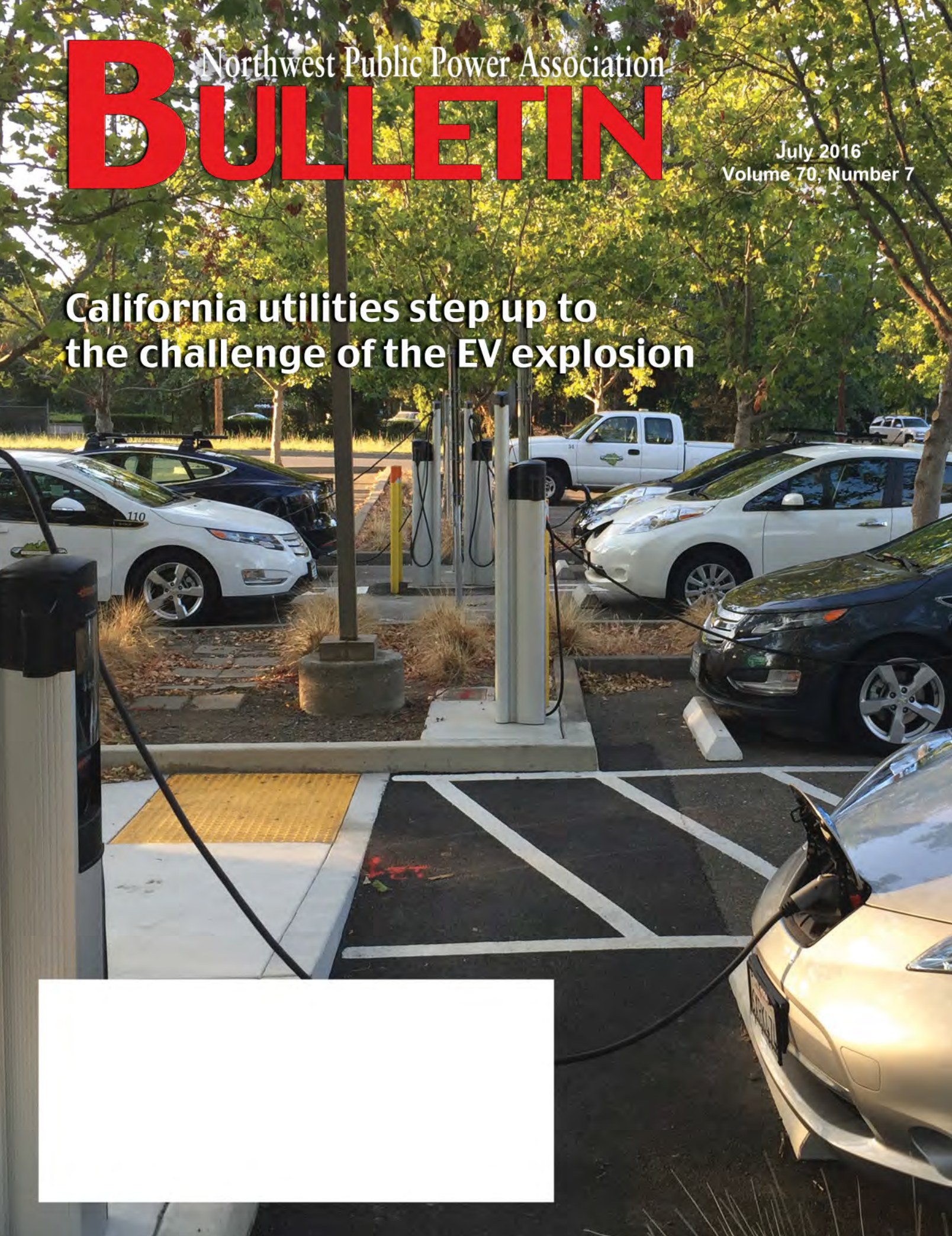
Northwest Public Power Association
BULLETIN
July 2016
Volume 70, Number 7



California utilities step up to the challenge of the EV explosion

by Mario De Bernardo

California utilities step up to the challenge of the EV explosion

"Want to see the most creative use of an EV charging parking spot?" asked Terry Crowley, the electric utility director for the City of Healdsburg, a charming northern California town known for its shopping, dining, wine, and craft beer. Crowley shows a picture of small electric vehicle — a black two-seater Smart car — parked sideways in one of the city-owned public charging stations. Hitched to the miniature-sized car is a trailer with two kayaks blocking the entrance to the adjacent charging spot. To the casual observer, it is impressive to see how much the small car is capable of towing. To Crowley, the picture helps illustrate one of the main challenges with the city's popular car chargers — parking enforcement.

As electric vehicles are becoming increasingly popular in California, publicly owned utilities are stepping up to the challenge. These utilities are installing public charging stations, offering incentives, and thinking creatively about future planning to promote and accommodate more electric vehicles. Smaller sized electric utilities, like Healdsburg, the Truckee Donner PUD, and the City of Alameda, are doing their part by being resourceful and designing programs that meet the specific needs of their communities.

"Publicly owned utilities take great pride in serving the public," explained Gary Plass, vice-mayor of Healdsburg. "We are all seeing more electric vehicles on the roads, and we have been very active in exploring ways to provide services that meet the needs of our residents and businesses, while also being fiscally prudent."

The recent growth of electric vehicles in California has been sparked in large part by state climate change policies established during the last 10 years. Chief among them is AB 32, the 2006 Global Warming Solutions Act, which calls for a reduction in greenhouse gas emissions to the 1990 level by 2020. Separately, through an executive order, the state also adopted a policy to reduce greenhouse gas emissions to 80 percent below 1990 levels by 2050.

The largest contributor of greenhouse gas emissions in the state is the transportation sector, which makes up almost 40 percent of total emissions. As a result, this sector has been a major target for state lawmakers, especially Governor Jerry Brown. In 2012, Brown issued an executive order setting the goal of over 1.5 million zero-emission vehicles on California roads by 2025. To achieve this, the governor has implemented a number of programs through agencies, such as the California Air Resources Board and the California Energy Commission, to promote transportation electrification.

One of the state's main climate change initiatives is the cap-and-trade auction program authorized by AB 32.

What not to do. The double-parked car in the above photo illustrates one of the main challenges with Healdsburg's popular car chargers — parking enforcement! Photo provided by the City of Healdsburg.

Through this program, the Air Resources Board has given carbon allowances to electric utilities, which can be sold through state-sponsored auctions. All auction proceeds must be used exclusively for the benefit of the utility's retail ratepayers, consistent with the goals of AB 32.

The City of Healdsburg, with a population just over 11,000 people, has generated hundreds of thousands of dollars by selling its cap-and-trade allowances. The city has used these funds to support its public electric vehicle charging stations and a rate discount program for home charging.

The city's efforts to install public charging stations started in 2013. Sonoma County had received grant funding for the procurement and installation of public charging stations to facilitate electric vehicle travel throughout the county. Healdsburg was deemed an optimal location for charging stations because of its proximity to the county's main highway and its popular shopping, dining, and wine-tasting sites.

Through an agreement with the city, the county agreed to have its "authorized installer," ChargePoint, set up chargers at Healdsburg's city hall. City hall was ideal because it is within walking distance of downtown, had capacity for additional electric services, and parking spaces were available. In addition to providing the public space, the city agreed to install the new electric service points and deliver electricity to the chargers, using its cap-and-trade auction proceeds to fund the initial and ongoing costs.

At first, two chargers were installed, and charging was offered at no cost to the public. Demand was so high, that

The City of Healdsburg set up the above charging station at its city hall three years ago. During that time, it has seen a 40-percent annual growth in electric vehicle energy sales. This load growth is welcomed by the utility. Photo provided by the City of Healdsburg.

within a year, four more chargers were added. Now all six chargers are near full capacity, and the city imposes an hourly fee in large part to incentivize car movement.

"One of the main complaints we get is that there are no spots to charge. This is why parking enforcement has become such a big deal," said Crowley. "Because of the popularity of the public chargers, we are looking at doubling the number of units in the next year and a half, and adding level 3 fast chargers." (Level 3 chargers can provide a substantial battery charge within 20 to 30 minutes, whereas a level 2 charger takes 4 to 6 hours.)

For Healdsburg residents who want to charge their electric vehicles at home, the city offers the Plug-In Electric Vehicle Discount Program. Under this program, residents who own a registered electric vehicle can qualify for a 15-percent discount on their electricity bill. The city is able to offer this discount without shifting utility costs to non-electric vehicle customers because of its cap-and-trade auction proceeds.

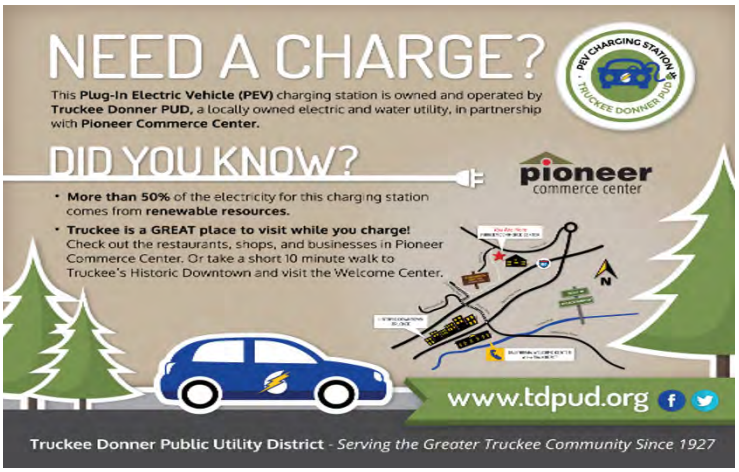
Since the city started its electric vehicle charging programs three years ago, it has seen a 40-percent annual growth in electric vehicle energy sales. This load growth is welcomed by the utility.

"The more people who use our electric utility services, the more we have sharing in the system costs," said Vice-Mayor Plass. "Out-of-town visitors and workers who pay to charge their cars here expand the utility's customer base. These added customers can help keep costs down for our other ratepayers, especially as our charging program grows."

Truckee Donner PUD, located along the Highway 80 corridor on the other side of the state from Healdsburg, is looking at electric vehicle charging from a slightly different perspective.

Unlike many other utilities, home and workplace charging in the Truckee area is not where the utility is finding demand because approximately two-thirds of the region's

Continued on page 28



The Truckee Donner PUD has been active in electric vehicle charging since 2005 with the installation of a level 2 public access charging station at Meadow Park, a community park near the utility's headquarters. This project was largely funded under a grant from the California Energy Commission, with assistance and supplemental funding from the utility itself.

houses are second homes. Where the utility is seeing the best opportunity is in areas that can accommodate out-of-town visitors, as well as drivers passing through.

"We are a major dot on the electric vehicle highway," said Steven Poncelet, public information and conservation manager for Truckee Donner PUD. "People like to visit the Truckee area to enjoy the outdoors, ski, and visit the historic downtown. We are also the gateway to Lake Tahoe and the Northern Sierra for people traveling to and from the Bay Area and Reno. A growing number of these people are driving electric vehicles, and we want them to charge in Truckee."

The Truckee Donner PUD has been active in electric vehicle charging since 2005 with the installation of a level 2 public access charging station at Meadow Park, a community park near the utility's headquarters. This project was largely funded under a grant from the California Energy Commission, with assistance and supplemental funding from the utility itself.

Usage has been low with the Meadow Park charger, but it increased dramatically in the last few years, with average annual usage growing by more than 500 percent over that time period. The utility also saw Tesla develop a network of 14 fast chargers (for the exclusive use of Tesla car drivers) in a parking lot behind a Truckee grocery store and in a popular business/restaurant area.

With these growth indicators, the Truckee Donner PUD took action last year and installed four new public chargers in areas convenient for the community and visitors. The utility plans on using these chargers to learn more about the impacts electric vehicles can have on load growth and the distribution system. Moreover, the utility is looking to better understand the electric vehicle charging business.

"This is going to be a major learning experience for the utility," said Stephen Hollabaugh, electric utility and assistant general manager of Truckee Donner PUD. "We are basically testing how to get into the charging business and also recoup our costs to serve electricity to the private networks. We see a huge potential here to provide our community with a valuable service, which is why we are doing it."

"I have been impressed with how quickly electric vehicles have grown in Truckee," said Bob Ellis, board member for Truckee Donner PUD. "I am pleased that we have been able to act so swiftly to get the chargers out there for the public to use. This project will be a big help in informing the utility as we prepare for our next steps."

In the City of Alameda (which mostly consists of an island community of approximately 80,000 residents off the Oakland coast in the San Francisco Bay), Alameda Municipal Power has been promoting electric vehicles since 1997 when it began offering a discount to residents who charge their cars at home. Currently under this program, an electric vehicle owner receives a monthly electric bill discount between $9 and $21 depending on the size of the vehicle.

In 2014, the city saw participation in its electric vehicle charging discount program nearly double over the course of 12 months. Despite the discount, some of the utility's customers expressed concern that their electric bills increased significantly due to their charging. The utility received requests from customers to replace the discount program with a new rate structure. As a result, the city-owned utility began revisiting how it approaches electric vehicles by reviewing its rate program.

"We want to be responsive to the community and develop a program that creates an incentive to own an electric vehicle," said Madeline Deaton, commissioner to the city's Public Utility Board. "We also want to recognize the customer's individual charging behavior, as well as ensure that costs are not shifted to other ratepayers."

One way to do this is through a time-of-use rate that encourages customers to charge their cars during off-peak hours when rates are lower — typically at certain points during the night. This, however, requires advanced metering infrastructure (i.e., smart meters) and billing technology that are not available at many small utilities.

In 2014, Alameda Municipal Power started a pilot pro-

ject to install smart meters, which included over 1,000 total commercial and residential meters. After further review of the potential benefits, the utility decided to completely commit to smart meters, and has set a timeline for full deployment by November 2017.

"Our smart meters will provide us with a lot of different opportunities," said Glenn Steiger, general manager of Alameda Municipal Power. "For example, once we start implementing our time-of-use rates in the winter, our customers will have more control over their charging costs."

Like Healdsburg and Truckee Donner PUD, the City of Alameda also has a number of public chargers — both level 3 and level 2 chargers — that it owns and operates. There has been a flat fee for charging at the level 3 chargers — $7 per session. The utility received substantial feedback from the community expressing interest in a per-kilowatt-hour fee to encourage use by smaller electric vehicles and those which do not need a full charge. In response, the utility changed its public charging rate from $7 per session to $0.45 per kilowatt-hour.

"The beauty of a community-owned utility like ours is that it gives our customers the ability to have a say in how the utility runs," said Steiger. "Our rate change at our public chargers is just one example of this."

A common thread that the City of Healdsburg, Truckee Donner PUD, and the City of Alameda all share is that they belong to the Northern California Power Agency (NCPA), a nonprofit California joint powers agency that includes 12 other members utilities.

"We are proud of the work our member utilities are doing in the area of electric vehicles," said Carol Garcia, chair of NCPA and mayor of the City of Roseville, which owns and operates its own electric utility. "They are able to implement their programs while also keeping rates low for their ratepayers. Designing programs that keep rates low will be critical if we want to achieve the state's ambitious goal of 1.5 million zero-emission vehicles on the road by 2025." NWPPA

Mario De Bernardo is the external affairs manager for the Northern California Power Agency (NCPA), a nonprofit California joint powers agency consisting of 15 members, including the City of Healdsburg, Truckee Donner PUD, and the City of Alameda. NCPA was founded in 1968 on the principle of environmental stewardship, and is a recognized national leader in the areas of energy efficiency, renewable generation, and carbon reduction. De Bernardo may be reached at mario.debernardo@ncpa.com or (916) 781-4222.

Truckee Donner PUD took action last year and installed four new public chargers, like the one below at Pioneer Commerce Center, in areas convenient for the community and visitors. The utility plans on using these chargers to learn more about the impacts electric vehicles can have on load growth and the distribution system. Photo provided by Truckee Donner PUD.