



Policy Brief:

Expanding the Electric Vehicle Grant Fund to the Private and Non-Profit Sectors

February 2014

Developing a network of publicly available charging stations across the state of Colorado is an important step to encouraging wider adoption and use of electric vehicles. Without a convenient network of charging stations, consumers will be less likely to purchase an electric vehicle and less likely to drive as far once they do own them.

In 2009, the General Assembly created the Electric Vehicle Grant Fund to provide funding for local governments to install charging stations for electric vehicles, but no revenue was allocated to the fund. In 2013, the legislature created a dedicated source of revenue (from an annual \$20 registration fee on electric vehicles) for the fund and broadened the allowed uses to include charging stations in privately owned multi-family housing. The fund is administered by the Colorado Energy Office (CEO).

Currently, the program provides funding only to governments and multi-family housing; private businesses and non-profits are not eligible to receive funding. The specific language in CRS24-38.5-103 reads as follows:

There is hereby created in the state treasury the electric vehicle grant fund, referred to in this section as the "fund." The fund shall be used to provide grants to local governments, landlords of multi-family apartment buildings, and the unit owners' associations of common interest communities as defined in article 33.3 of title 38, C.R.S., to install recharging stations for electric vehicles. The grants shall be prioritized based upon the prospective recipients' potential for, and commitment to, energy efficiency.

While local governments are a good base for charging stations, CEO should have the authority to expand eligibility to businesses and nonprofits order to create a comprehensive charging infrastructure. CEO should not be mandated to issue grants to the private sector, but should have the flexibility to allocate the funds to the uses and locations that give the greatest benefit.

Ideal places for Level 2 public charging stations are those where drivers remain parked for longer periods of time which allows them to extend their electric range. While charging for fifteen minutes at a Level 2 charging station has some value, it is will only provide electric vehicles with between three to six miles of additional electric range.

Using data from the 2011 Front Range Travel Survey conducted by the Denver Regional Council of Governments (DRCOG), SWEEP classified over 12,000 vehicle trips based on 60 types of destinations. For each type of destination, we determined the median dwell time that a vehicle remained parked at the site. The table below shows all the destination types which had median dwell times of 30 minutes or longer. While many of these destinations would be currently eligible for grants from the Infrastructure Fund, over half exist at private businesses or non-profits. Because destinations at these sites provide an opportunity to create a more comprehensive public charging infrastructure they should be considered for grants from the Fund. Additional consideration for funding should be given to entities that have longer dwell times.

| Destination | Dwell Time (Minutes) |
|--|---------------------------------|
| Skiing | 281 |
| Pepsi Center | 228 |
| University | 174 |
| Outdoor Museum (Zoo, Botanical Garden) | 161 |
| Music / Theatre | 158 |
| Casino | 155 |
| Bowling | 154 |
| Movie Theatre | 135 |
| Golf / Tennis | 131 |
| Museum | 112 |
| Ice rink | 109 |
| Soccer | 103 |
| Church | 101 |
| Recreation Center | 77 |
| Yoga / Dance / Gymnastics | 77 |
| Community / Senior Center | 76 |
| Baseball | 75 |
| Gym | 74 |
| YMCA / YWCA | 72 |
| Hike (State or National Parks, Trail) | 67 |
| Hospital | 65 |
| Martial Arts | 65 |
| Swimming | 63 |
| Bar | 61 |
| Sit Down Restaurant (not fast food) | 60 |
| Local Park | 60 |
| Health | 55 |
| Mall (Shopping Center, Big Department Store) | 50 |
| Grooming (Hair, Salon, Nails) | 45 |
| Big Box Grocery (Costco, Sams) | 40 |
| Wal-Mart / Target | 33 |
| Government Office | 32 |
| Bookstore | 30 |

Based on the U.S. Department of Energy's Alternative Fuels Data Center (AFDC) database of 103 publicly available charging stations in Colorado, approximately two-thirds have been set up by private businesses and the remainder by governments or non-profits. Of the stations set up at private businesses, 36 are located at Walgreens (pharmacies have a median dwell time of 12 minutes) and 17 are located at vehicle dealerships (median dwell time of 20 minutes, although in many situations the vehicle is being serviced and would not be able to charge during the wait). While having these stations provides convenience for EV drivers in need of a charge and will help to dispel range anxiety, there are other locations that may provide a greater benefit, and which could be facilitated by targeted grant funding.

Workplace Charging

Installing charging stations at workplaces is an important piece of creating a comprehensive charging station infrastructure. After the time spent parked at home, most vehicles will spend the most amount of time parked at workplaces. Data from the Front Range Travel Survey indicates that the median time that vehicles are parked at work is 7.1 hours. With a Level 2 charger (operating at 3.3 kW) a Nissan Leaf could be recharged from empty over 7 hours. Workplace charging could open up the possibility of owning an electric vehicle to consumers who may be unable to charge at their homes. Many residences lack a dedicated parking area (such as multi-family units or those relying on street parking) and others who may find it too expensive to install a Level 2 station at their home.

With such long dwell times at workplaces, there is also the possibility of using Level 1 charging stations, which are less expensive from a hardware and installation standpoint. A Level 1 charger could provide an electric vehicle approximately 28 miles of additional range over 7 hours, which is much greater than the average one-way commute distance of 8 miles in the Front Range.

Currently, workplace charging by local governments is an allowed use of EV grant funds. We propose to make workplace charging by private employers an allowed use, subject to the discretion of CEO to develop appropriate grant guidelines.

Viability for workplace charging could be determined based on number of employees already owning a plug-in electric vehicle or survey data on potential owners. Likewise, employers with a certain number of employees could be eligible to provide access to the largest number of people. One potential way to make workplace charging more accessible would be to have it available to the general public during non-work hours. These program design issues could be addressed by CEO in the grant guideline.

Proposed Solution:

Senate Bill 28 addresses these issues by authorizing the use of the Electric Vehicle Grant Fund to install publically available charging or workplace charging in private businesses and nonprofits, as well as at state agencies, public universities, and transit agencies. Allow CEO to rank applications based upon the suitability of the location for effective EV charging.

SWEEP supports SB 28.

More information about SB 28 is available at

http://www.leg.state.co.us/Clics/CLICS2014A/csl.nsf/fsbillcont3/0EA7E915E4D734A487257C360075FEA7?Open&file=028_ren.pdf).