EXECUTIVE SUMMARY

Major electric utilities in the Southwest generally have thousands of megawatts (MW) worth of underutilized power plant capacity because they need to produce significantly more power during summer afternoons than during the rest of the year. Power plants which generate less than optimal amounts of electricity are an economic drain on the entire system. The costs of building these power plants must be recovered through higher electricity prices if the costs cannot be spread over a larger amount of electricity generation. In addition, due partly to energy efficiency programs and distributed generation such as rooftop solar photovoltaic (PV), utilities also face lower rates of growth in residential electricity sales than they have historically experienced.

Electric vehicles (EVs) offer utilities the opportunity to address both these issues by smoothing out seasonal differences and increasing electricity use during off-peak hours.

Across the Southwest, utilities are demonstrating various levels of engagement as more customers are driving and charging EVs in their service territories. Nevada’s main utility, NV Energy, is a clear leader both in the Southwest and nationwide in supporting EVs and proactively addressing the challenges and opportunities that EVs create.

NV Energy has demonstrated strong leadership and foresight in supporting EVs.

NV Energy provides electricity to approximately 1.2 million customers in Nevada, mainly in the state’s major metropolitan areas, via its subsidiaries Nevada Power Company in the south and Sierra Pacific Power Company in the north.

The utility has adopted policies and taken actions that create a very positive environment for EV owners in Nevada. Highlights of these actions include:

- NV Energy’s Shared Investment Program helped to develop a robust public charging infrastructure across the state by facilitating the installation of nearly half of the state’s public charging stations. This network allows EV drivers to make longer trips and reduces
range anxiety for potential EV purchasers. Uniquely among utilities across the country, NV Energy did not rely on outside funding and set up the program outside of any mandate.

- NV Energy led a statewide working group to share best practices and promote EVs and charging stations.
- NV Energy provides a time-of-use rate to encourage off-peak vehicle charging and an additional EV-specific rate to further reduce off-peak charging costs for EV owners.
- NV Energy led by example, purchasing twelve EVs for their fleet and installing publicly available charging stations at several of their office locations.
- NV Energy's relatively clean electricity mix, which is becoming less dependent on coal-fired power plants over time, makes driving an EV significantly cleaner than a gasoline powered vehicle.

NV Energy has shown leadership and foresight in addressing EVs. While there are a number of general reasons to support EVs such as energy independence, economic growth and clean air, NV Energy seems to recognize that it is in their own best interest to advance the adoption of EVs. By proactively addressing the issues raised by EVs, they have minimized the challenges while maximizing the potential. SWEEP encourages other southwestern utilities to follow NV Energy’s lead and proactively support EVs.

However, even with the progressive actions of NV Energy, sales of EVs in the state have not kept pace with other leading states in the Southwest (Colorado and Utah) which have implemented a number of policies that support the adoption of EVs. Additional support from the state government could be valuable and is recommended as a complement to the actions already taken by NV Energy.
I. INTRODUCTION

Why Electric Vehicles Are Important

Driving electric vehicles (EVs) saves consumers money. The cost to power a vehicle with electricity is significantly less than gasoline; an EV driver can save over $1,000 annually in fuel costs. These cost savings are resources freed up to be spent on other goods and services or invested in Nevada. Because Nevada has a single oil refinery that produces small amounts of mainly asphalt and diesel fuel, the state must import almost all of its transportation fuels from California and Utah via pipelines. Each year Nevada drivers spend over $5 billion on imported transportation fuels; almost all of that money leaves the state’s economy. EVs can be powered by electricity from resources that Nevada has in abundance: solar and geothermal energy. While these resources do not meet all the state’s electricity needs, they do allow the transportation sector to begin to shift to locally produced energy sources.

EVs can also provide environmental benefits by reducing emissions of harmful pollutants and greenhouse gases. This is especially true in Nevada, where coal is used for only about 20 percent of the state’s electricity generation, and there will be even less as most of the state’s remaining coal-fired plants are expected to be replaced with natural gas and renewables by 2019. Based on the state’s electricity mix in 2013, EVs reduce smog forming nitrogen oxides (NOx) and volatile organic compounds (VOCs) by 16 percent and 92 percent respectively and reduce greenhouse gas emissions by 28 percent, compared to a gasoline powered vehicle.

Shifting the transportation sector away from imported oil to domestically produced electricity also increases the energy independence of the United States.

II. HOW ELECTRIC VEHICLES CAN ADD VALUE TO NV ENERGY AND OTHER UTILITIES

Increasing Electricity Sales

Historically, utilities in the Southwest could rely on annual increases in residential electricity sales of between four and five percent. However, southwestern states have experienced very low or even negative growth in this area since 2007, and the U.S. Department of Energy (DOE) Energy Information Administration forecasts an annual growth rate of residential electricity consumption of 1.4 percent in the region through 2040. With slower economic growth, states adopting more energy efficiency measures, and distributed generation such as rooftop solar becoming more prevalent, utilities are no longer able to rely on steadily increasing residential electricity sales.
EVs offer utilities entry into an entirely new sector of the economy with significant growth potential. If every light duty vehicle in Nevada Power’s service territory was an EV, the additional demand would be equal to nearly 20 percent of Nevada Power’s current sales. This is about 41 percent of the growth the utility would see if consumption increased by 1.4 percent annually through 2040, without EVs coming into play.

However, new electricity sales from EVs are only advantageous to utilities and their customers if they occur during off-peak hours so that new capacity is not required to meet growing peak demand. With most EV charging expected to take place at people’s homes, the introduction of time-of-use (TOU) rates strongly encourages (but does not ensure) that charging occurs during off-peak usage periods. This is especially important as EV drivers may otherwise charge their vehicles at the workplace or at home in the late afternoon when people often return home from work. TOU rates give EV owners the opportunity to get better electricity prices if they charge their vehicles late at night or early in the morning when utilities generally have excess generating capacity.

**Creating More Value from Underutilized Capacity**

EVs offer utilities an opportunity to increase the demand for electricity, but to do so during off-peak hours when there can be significant underutilized electric generating capacity. A utility such as Nevada Power, which has a very high peak demand compared to its average load, requires a significant amount of generating capacity that is underutilized for the majority of the year. The highest peak demand during the summer, almost 5,800 MW, is nearly double the average demand of 2,900 MW (see Table 1 below). During winter months, when peak demand is much lower (around 2,600 MW), even more spare capacity is available.

Underutilized capacity is an economic drain on the entire system because the capital costs of this capacity must be recovered through higher rates if it cannot be spread over a large amount of electricity sales. If underutilized capacity is used more frequently, the fixed capital costs will be spread out over more generation, which would reduce pressure on rates for all customers.

EVs, when paired with TOU rates, offer NV Energy the opportunity to increase electricity demand during off-peak hours when they have significant capacity available.

Of the major southwestern utilities, Nevada Power has the lowest load factor, meaning that it has the greatest difference between average demand and summer peak demand. While other southwestern utilities may have less underutilized capacity, each one has the potential to smooth out its demand curve by adding EV charging during off-peak hours.

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"Growing off-peak load can help lower rates for all our customers."

Jared Friedman, NV Energy
Table 1 | Peak Demand, Average Demand and Load Factor from Major Southwestern Utilities\(^8\)

<table>
<thead>
<tr>
<th>Utility*</th>
<th>Summer Peak Demand</th>
<th>Winter Peak Demand</th>
<th>Average Demand</th>
<th>Load Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nevada Power**</td>
<td>5,761</td>
<td>2,652</td>
<td>2,899</td>
<td>0.50</td>
</tr>
<tr>
<td>Sierra Pacific Power**</td>
<td>1,676</td>
<td>1,327</td>
<td>1,054</td>
<td>0.63</td>
</tr>
<tr>
<td>Arizona Public Service</td>
<td>7,207</td>
<td>4,113</td>
<td>3,965</td>
<td>0.55</td>
</tr>
<tr>
<td>Salt River Project</td>
<td>6,726</td>
<td>3,708</td>
<td>4,005</td>
<td>0.59</td>
</tr>
<tr>
<td>Tucson Electric Power</td>
<td>2,759</td>
<td>1,959</td>
<td>1,558</td>
<td>0.56</td>
</tr>
<tr>
<td>Xcel-CO</td>
<td>6,703</td>
<td>5,247</td>
<td>3,995</td>
<td>0.59</td>
</tr>
<tr>
<td>Public Service Company of NM</td>
<td>2,016</td>
<td>1,593</td>
<td>1,434</td>
<td>0.71</td>
</tr>
<tr>
<td>El Paso Electric</td>
<td>1,683</td>
<td>1,213</td>
<td>1,311</td>
<td>0.78</td>
</tr>
</tbody>
</table>

*Rocky Mountain Power (RMP) is reported in the EIA statistics as PacifiCorp (which includes CA, OR, WA, ID and WY as well as UT), so it is not possible to give accurate demand information for RMP in Utah.

**Nevada Power (serving Southern Nevada) and Sierra Pacific Power (serving Northern Nevada) are the two companies which make up NV Energy.

III. NV ENERGY ACTIONS TO PROMOTE ELECTRIC VEHICLES

Nevada Electric Vehicle Accelerator

NV Energy has been one of the lead organizations in the Nevada Electric Vehicle Accelerator (NEVA) group, was organized in 2011 and has worked to develop EV charging infrastructure and promote EVs across Nevada. NEVA is made up of a diverse group of stakeholders including local governments, businesses, non-profits and state agencies with an interest in promoting EVs. NEVA hosts conference calls and meetings to share best practices, information about opportunities and updates on EVs and electric vehicle supply equipment (EVSE) in the state.

Time-of-Use and Electric Vehicle Rates

Time-of-use (TOU) electricity rates charge different prices per kWh, based on the time of day when the electricity is consumed. Prices are higher during peak hours and lower during off-peak hours, reflecting the cost of generation and supply at these different times and encouraging demand to shift from peak to off-peak periods. TOU electric rates are an important tool for utilities interested in managing the additional load that EVs will add to the electric grid. If large numbers of EVs begin to charge in the late afternoon when people return from work, this could add to the peak load and the number of critical hours that utilities experience, usually on hot summer afternoons when there is already significant demand due to high air conditioning load.
Since 2009, NV Energy has offered a variety of TOU rates for single family homes as well as an EV-specific off-peak rate (See the Appendix for more detailed information on their TOU and EV rates). The EV rate offers a slightly reduced cost (compared to the regular TOU rate) for charging during off-peak hours (10 pm to 6 am). When the EV rate is combined with a TOU rate, EV owners can save between $140 and $230 each year compared to the cost of charging an EV using regular residential rates. Furthermore, if the vehicle is charged off-peak, the annual fuel cost for a typical vehicle drops from $1,200 (assuming gasoline at $3.78 per gallon) to just $200 using electricity (see Figure 1).

While the use of TOU rates to encourage off-peak vehicle charging is a relatively new phenomenon, there is evidence that TOU rates do impact when EV owners decide to charge their vehicles. Data collected on charging behavior shows that, in areas where a TOU rate is offered, most charging will begin once off-peak rates go into effect. In contrast, areas without TOU rates show a steady increase in later afternoon charging, coinciding with people’s returning from work.\(^9\)

By offering the EV rate, NV Energy sends a message that it supports and welcomes EVs in its service territory. NV Energy also guarantees customers the lowest available rate. If, after one year, the customer has spent more on the EV rate than they would have on a regular residential rate, NV Energy will refund the difference and allow them to return to the regular rate.

As Table 2 shows, almost all of the major utilities in the Southwest have adopted TOU rates, although only a handful—Arizona Public Service, Tucson Electric Power and NV Energy—have a rate that specifically focuses on EVs.

<table>
<thead>
<tr>
<th>Utility</th>
<th>TOU Rate</th>
<th>EV-Specific Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arizona Public Service</td>
<td>✦</td>
<td>✦</td>
</tr>
<tr>
<td>Salt River Project</td>
<td>✦</td>
<td></td>
</tr>
<tr>
<td>Tucson Electric Power</td>
<td>✦</td>
<td>✦</td>
</tr>
<tr>
<td>Xcel-CO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NV Energy</td>
<td>✦</td>
<td>✦</td>
</tr>
<tr>
<td>Public Service Company of NM</td>
<td>✦</td>
<td></td>
</tr>
<tr>
<td>El Paso Electric Power</td>
<td>✦</td>
<td></td>
</tr>
<tr>
<td>Rocky Mountain Power-UT</td>
<td>✦</td>
<td></td>
</tr>
</tbody>
</table>
Shared Investment Program

Over the last year, NV Energy has partnered with private and public sector entities to set up 133 charging ports (each charging station may have multiple ports for charging different vehicles at the same time) at 47 locations across the state of Nevada as part of their Shared Investment Program. Stations have been installed at diverse locations such as universities, casinos, resorts, shopping centers, recreation destinations and airports.

The focus was on publicly available charging stations, although employers who provided charging to their employees were also eligible to participate in the program. The program has focused on Level 2 charging stations, although it did support Level 1 chargers at the Reno airport due to longer parking times.

The charging stations are owned and operated by the partners. NV Energy offered partners up to $5,000 off the cost of a single port charger and up to $7,000 off the cost of a dual port charger. This amount is intended to cover approximately half the cost of an EVSE installation, leaving the partner to pay for the remaining installation costs.

As a condition of subsidizing these charging stations, NV Energy required partners to provide electricity free to the public for five years and to make the charging station usage data available to the utility. After the five year period, the partner is able to charge whatever price they wish for use of the stations in accordance with state law, though they may choose to continue to allow people to charge their vehicles for free. By analyzing the charging station data, NV Energy will be able to understand the effects of charging on its system which will allow the utility to better serve the demands of its growing EV customer base.

The total budget for the program was $500,000. As of June 2014, there are 108 sites with charging stations with 330 charging ports in the state of Nevada. The program added significantly to the publicly available charging infrastructure in Nevada, providing nearly half of the current public locations to charge an EV.

Other Charging Station Incentive Programs

Only four other utilities in the United States are known to currently offer any type of incentive for the installation of commercial charging stations:

- The Orlando Utilities Commission (OUC) in Florida offers a rebate of up to $1,000 per charging station. OUC’s program is part of the ChargePoint America program and is in part funded by a grant from the US Department of Energy.

- The Los Angeles Department of Water and Power (LADWP) offers rebates of up to $1,000 per commercial charging station. Larger sites may receive rebates for multiple chargers. Sites with at least 7,000 daily vehicle visits can choose to receive a $15,000 rebate for the installation of a DC fast charging station. The LADWP program is funded by grants from the South Coast Air Quality Management District.
Northern Indiana Public Service Company (NIPSCO) offers a free ChargePoint station and up to $3,000 of the cost of installation for Level 2 charging stations. For DC fast charging stations, NIPSCO also offers up to $37,500 off the capital costs and installation. NIPSCO’s EV infrastructure program is part of its settlement with EPA over new Source Review violations.14

Central Maine Power (CMP) offers grants of up to $2,500 for the installation of a charging station, although the stations may be used for fleets or employee charging so some may not be publicly available.15 CMP is required by the Maine Public Utilities Commission to develop programs to increase the use of EVs through its Maine Power Reliability Program.16

NV Energy appears to be the only utility in the country that has developed a program for public charging stations that has not relied on outside funding and outside of any mandate.

A number of utilities across the country offer rebates for EV owners to install a Level 2 home charging station, but NV Energy chose rather to invest in public charging stations. There is an economic benefit for EV owners who charge their vehicles at home, as powering a vehicle with electricity is significantly cheaper than gasoline. Because EV drivers do most of their charging at home, an investment in their home refueling stations can pay off quickly. In addition, many EV drivers are able to make use of Level 1 charging via a regular electric outlet and do not need to upgrade their home charging infrastructure. Therefore, NV Energy focused on public charging stations strategically placed throughout its service territory to ensure EV drivers have access to charging stations while away from home. Reducing the upfront installation costs makes the idea of putting in charging stations much more attractive to the program’s partners and removes a barrier to more public charging. In addition, the availability of public charging stations helps to reduce range anxiety and gives EV drivers (and potential EV owners) more confidence in their ability to make longer trips in their EVs. With a public charging station, all EV owners (as opposed to a single homeowner) can benefit from the use of the station.

In December of 2013, as part of the NV Energy’s Shared Investment Program, the College of Southern Nevada (CSN) installed three Level 2, single-port charging stations outside of the telecom building on their Cheyenne Campus. These replaced older and outdated charging stations that had been installed a decade ago. In addition to anticipated use by students, faculty and staff, the charging stations will be used as part of the College’s Automotive Technology classes on plug-in vehicles.

“NV Energy’s generous support was very much appreciated, and was instrumental in the installation of the charging stations,” said Sherri Payne, Associate Vice President for Facilities Management at the College of Southern Nevada.
Trainings and Technical Assistance

To help to streamline the process for residents or businesses to obtain permits to install their charging stations, NV Energy hosted training sessions in both Las Vegas and Reno for city and county permitting agencies on codes and standards related to charging stations. Electrical contractors that would be installing the equipment were also invited to increase their understanding of how EVSE installation correlates with other types of electrical installations.

NV Energy has also provided technical assistance to entities interested in installing charging stations by giving advice on how to minimize installation costs and on what type of charging stations might be the best fit for the interested party.

Leading by Example and Investing in EVs

NV Energy has also purchased or leased several EVs (three Nissan Leafs and nine Chevy Volts) for use in its own fleet and has installed charging stations at six of its office locations (five of which are open to the public). Since 2010, NV Energy has had on staff a Manager for Electric Transportation. This position has worked to promote EVs and EVSE in Nevada.
IV. THE ROLE OF ELECTRIC UTILITIES IN SUPPORTING ELECTRIC VEHICLES: A BROADER CONTEXT

As the source of fuel for EVs, electric utilities can play an important part in encouraging the adoption of EVs. However, state government leadership is also needed to spur high adoption rates of EVs. Figure 2 shows EV registrations as a percentage of all new vehicle registrations in each of five southwestern states in the last two years. Nevada has a similar rate of adoption to Arizona and is ahead of New Mexico, but the state trails both Utah and Colorado.

![Figure 2](image-url)

**Figure 2 | Electric Vehicles as a Percentage of New Vehicle Registrations**

Figure 3 below compares the number of publicly available charging stations per million residents in the southwestern states. Arizona’s number is somewhat inflated compared to other states as it received a significant amount of its charging stations essentially at no cost via the EV Project. Due to the efforts of NV Energy, Nevada compares favorably with other states, which may indicate that public charging by itself is not sufficient to drive EV sales.

In 2014, SWEEP published *Policies to Promote Electric Vehicles in the Southwest: A State Government Report Card*, which graded southwestern state governments on how much they had done to support EVs. Nevada received a C, having adopted only six policies that support the adoption of EVs. Colorado, the state receiving the highest grade of an A-, had adopted twelve policies supporting EVs. Among these policies was a tax credit of up to $6,000 for the purchase or lease of an EV as well as...
an EV infrastructure fund, funded by an annual fee on each EV, to invest in a network of charging stations. Utah also has adopted a $1,500 tax credit for the purchase or lease of an EV and received the second highest grade of a B+. The two states (Colorado and Utah) with the most robust EV policies are those that have experienced the highest rate of EV adoption in the Southwest.

Figure 3 | Public Charging Stations per Million Residents

<table>
<thead>
<tr>
<th>State</th>
<th>Charging Stations per Million Residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arizona</td>
<td>44</td>
</tr>
<tr>
<td>Colorado</td>
<td>29</td>
</tr>
<tr>
<td>Nevada</td>
<td>27</td>
</tr>
<tr>
<td>New Mexico</td>
<td>9</td>
</tr>
<tr>
<td>Utah</td>
<td>16</td>
</tr>
</tbody>
</table>

SWEEP recommends that the state of Nevada take more actions to support EVs, spurred on in part by NV Energy’s leadership. Doing so would increase Nevada’s reliance on local sources of energy and help improve the operation of the state’s electricity system by adding demand during off-peak hours. A suite of policies that state governments have implemented to support EVs can be found in the SWEEP Report Card referenced above.

V. CONCLUSION

Nevada’s main electric utility, NV Energy, has demonstrated strong leadership in supporting EVs and proactively addressing the challenges and opportunities that EVs can create. The utility has adopted policies and taken actions that have created a very positive environment for EV owners in Nevada.

By offering a TOU electricity rate, along with a special EV rate, NV Energy has created a strong incentive for EV owners to charge their vehicle during off-peak hours at low cost. This reduces the need for expensive new generating capacity and increases the use of currently underutilized capacity. If underutilized capacity is used more frequently, the recovery of fixed capital costs will
be spread out over more electricity sales, thereby reducing pressure on rates for all customers.

NV Energy’s other significant initiative is its Shared Investment Program, which has helped to create a robust charging infrastructure by facilitating the installation of nearly half of the state’s publicly available charging locations. These stations allow EV owners to make longer trips and reduce range anxiety for potential EV purchasers. Uniquely among U.S. utilities, NV Energy did not rely on outside funding and set up the program outside of any mandate. SWEEP encourages other utilities in the Southwest to follow NV Energy’s lead by establishing attractive TOU electricity rates for EV owners and incentivizing the installation of public charging stations.

However, even with the aggressive actions of NV Energy, sales of EVs in the state have not kept pace with other leading states in the Southwest (Colorado and Utah). It is clear that additional state action would complement actions already taken by NV Energy and help to increase EV adoption rates in Nevada.
## APPENDIX: NV ENERGY TIME-OF-USE RATES

### Table A1 | Comparison of Northern Nevada Rates

<table>
<thead>
<tr>
<th>Type of Rate</th>
<th>July – September</th>
<th>October – June</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Time of Day</td>
<td>$/kWh</td>
</tr>
<tr>
<td>Regular Residential</td>
<td>24 Hours</td>
<td>$0.102</td>
</tr>
<tr>
<td>TOU &amp; EV Peak*</td>
<td>1 pm - 6 pm</td>
<td>$0.415</td>
</tr>
<tr>
<td>TOU &amp; EV Mid-Peak*</td>
<td>10 am - 1 pm</td>
<td>$0.209</td>
</tr>
<tr>
<td></td>
<td>6 pm - 9 pm</td>
<td></td>
</tr>
<tr>
<td>TOU Off-Peak</td>
<td>9 pm - 10 am</td>
<td>$0.071</td>
</tr>
<tr>
<td>EV Off-Peak</td>
<td>10 pm - 6 am</td>
<td>$0.063</td>
</tr>
</tbody>
</table>

*The TOU and EV Rates charge the same price during Peak and Mid-Peak Hours.

### Table A2 | Comparison of Southern Nevada Rates – Option A

<table>
<thead>
<tr>
<th>Type of Rate</th>
<th>June – September</th>
<th>October – May</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Time of Day</td>
<td>$/kWh</td>
</tr>
<tr>
<td>Regular Residential</td>
<td>24 Hours</td>
<td>$0.124</td>
</tr>
<tr>
<td>TOU &amp; EV Peak*</td>
<td>1 pm - 7 pm</td>
<td>$0.340</td>
</tr>
<tr>
<td>TOU Off-Peak</td>
<td>7 pm - 1 pm</td>
<td>$0.083</td>
</tr>
<tr>
<td>EV Off-Peak</td>
<td>10 pm - 6 am</td>
<td>$0.075</td>
</tr>
</tbody>
</table>

*The TOU and EV Rates charge the same price during Peak Hours.

### Table A3 | Comparison of Southern Nevada Rates – Option B

<table>
<thead>
<tr>
<th>Type of Rate</th>
<th>July – August</th>
<th>September – June</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Time of Day</td>
<td>$/kWh</td>
</tr>
<tr>
<td>Regular Residential</td>
<td>24 Hours</td>
<td>$0.124</td>
</tr>
<tr>
<td>TOU &amp; EV Peak*</td>
<td>2 pm - 7 pm</td>
<td>$0.512</td>
</tr>
<tr>
<td>TOU Off-Peak</td>
<td>7 pm - 2 pm</td>
<td>$0.070</td>
</tr>
<tr>
<td>EV Off-Peak</td>
<td>10 pm - 6 am</td>
<td>$0.064</td>
</tr>
</tbody>
</table>

*The TOU and EV Rates charge the same price during Peak Hours.*
ACKNOWLEDGEMENTS

The author would like to thank the following individuals for their input and feedback on the report: Marie Steele, NV Energy; Jared Friedman, NV Energy; Stan Hanel, Nevada Electric Vehicle Accelerator; and Sherri Payne, College of Southern Nevada.

The author would also like to thank the following SWEEP staff members for their contributions: Will Toor, Suzanne Pletcher, Howard Geller and Gene Dilworth.

ABOUT SWEEP

The Southwest Energy Efficiency Project is a public interest organization dedicated to advancing energy efficiency in Arizona, Colorado, Nevada, New Mexico, Utah and Wyoming. For more information, visit www.swenergy.org.

SWEEP’s Transportation Program seeks to identify and promote the implementation of policies designed to achieve significant energy savings and reductions in greenhouse gas emissions from the transportation sector. SWEEP’s work focuses on two general strategies: reducing vehicle miles traveled and improving vehicle fuel efficiency.

Questions or comments about this report should be directed to Mike Salisbury, Transportation Program Associate, msalisbury@swenergy.org.
ENDNOTES


3 Even in a good year for gas station operators, such as 2013, profit margins from gasoline sales are around 3%, meaning that of the approximately $5 billion spent on transportation fuels, only $150 million remains in the state’s economy from gas station operators. Prior to 2013, profit margins were around 1.5%, meaning only about $75 million would have remained in the economy. Forbes. 2014. Why Gas Station Owners May Be Smiling. http://www.forbes.com/sites/sageworks/2014/01/21/profit-margins-at-gasoline-stations-have-increased/.


10 Level 1 chargers operate at 120 volts (like a regular outlet) and add approximately 3-4 miles of range for every hour charged. Level 2 chargers operate at 240 volts and generally offer between 10-20 miles per hour charged.


17 IHS Automotive new vehicle registration data, CYE 2012 and 2013.
The number of charging stations in Nevada as represented in Figure 3 is different from the number cited earlier in the section on NV Energy’s Shared Investment Program. Figure 3 shows data from the Alternative Fuels Data Center (AFDC), while the numbers cited earlier come from a detailed analysis by Stan Hanel of the Nevada Electric Vehicle Accelerator. Mr. Hanel’s work identifies a number of stations which are not picked up by AFDC so it appears that AFDC’s numbers underrepresent the total number of stations and charge ports in the state. However, as this detailed on-the-ground analysis is not available for all southwestern states, we have relied on AFDC’s data for our comparison between states, with the assumption that it is likely undercounting for all states.

The EV Project was a public-private partnership that installed public and residential charging stations in major cities in ten states across the country. [http://www.theevproject.com/](http://www.theevproject.com/).


