

Nevada EV Policy Landscape

Electrifying Transportation in the Silver State



December 2020

Overview

As Nevada continues to drive toward an electrified transportation future, which policies, strategies, and partners can help it succeed? The Nevada EV Policy Landscape outlines how the state can move forward to achieve a more robust EV future. The Electrification Coalition (EC) developed this document to guide the work of the EC State EV Policy Accelerator over the next year, and it features our assessment of the policy opportunities, pathways, messaging, and key players that will be most effective in achieving progress in the near term. It reflects input from a wide range of on-the-ground stakeholders and builds upon the insights of previous roadmaps and guidance documents, including those developed by the EC. It reviews transportation’s current impacts to public health, safety, and the economy. From the collection of policy opportunities we examine here, the EC has identified a set of high-impact areas of engagement where we will dedicate our resources in partnership with other players. Our goal : Electrify the Silver State.

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Nevada Context for EV Policy Action

Nevada has already taken important steps toward an electrified transportation future, with actions by the state government, local governments, non-governmental organizations, and the private sector, including utilities and EV-related businesses.

State leadership on climate: In November 2019, Governor Sisolak directed his administration through [Executive Order 2019-22](#) to develop a coordinated plan to address climate change and meet [Senate Bill 254](#)'s goal of reducing statewide greenhouse gas (GHG) emissions to 28% below 2005 levels by 2025 and 45% below 2005 levels by 2030.

[The State of Nevada Climate Initiative](#) is a response to Executive Order 2019-22, which called for creating a climate strategy. The strategy consists of eight components, including climate impacts in Nevada, creative approaches to financing climate action, effective climate governance models, and the role of climate action in economic recovery.

[Senate Bill 358](#) raised Nevada's renewable portfolio standard (RPS) to 50% by 2030. It passed unanimously in the legislature and was signed into law on Earth Day, April 22, 2019. By 2018, renewable energy comprised 21% of Nevada's energy mix. [Nevada is currently ranked](#) second in the nation in geothermal electricity generation and fourth in utility-scale solar generation.

State action on EVs: Nevada is exploring adoption of a Zero Emission Vehicle (ZEV) regulation, requiring major manufacturers of light-duty passenger vehicles to reach certain benchmarks for ZEV sales in the state (also known as Section 177, or adopting California's sales regulations). Tesla has invested in the battery supply chain through construction of its Gigafactory in northern Nevada, bringing economic development to the state. Nevada has enacted other EV-supportive policies, including granting authority to the Nevada Department of Transportation to allow PEVs use to high occupancy vehicle (HOV) lanes, utility rebates for infrastructure, discounted off-peak electricity rates, and participation in the [REV West program](#) for the creation of regional charging corridors.

The Case for EVs in Nevada

Drivers for EV policy action in Nevada include economic development opportunities; the need to reduce emissions of greenhouse gases and air pollutants, such as particulate matter (from diesel vehicles) and nitrogen oxides, which adversely impact public health, especially for communities of color; and energy security threats associated with oil dependency.

About the State EV Policy Accelerator and the Electrification Coalition

The Electrification Coalition (EC) launched the State EV Policy Accelerator in early 2020, with the goal of advancing state policy to drive widespread transportation electrification. Working with leaders across the government, private-sector, and advocacy community, the EC will lead deep-dive policy action focused on high-impact policy measures in the five priority states of Michigan, Nevada, North Carolina, Pennsylvania, and Virginia from 2020-2022. This work will include detailed market assessments, policy blueprints, resource toolkits, and customized bootcamps, alongside targeted implementation programs for bus electrification, fleet transitions, and other local programs to prove out electrification on the ground. In addition, the EC provides rapid response support for states across the country, in the form of targeted analysis, media and communications support, testimony, and policy comments.

The EC is a nonpartisan, nonprofit organization that promotes policies and actions to facilitate the deployment and adoption of plug-in electric vehicles (EVs) on a mass scale to overcome the national security and economic challenges caused by America's dependence on oil. EC supporters and partners represent the entire electrified transportation value chain, positioning the organization as a dedicated rallying point for a new transportation future.

Jobs and Economic Development

Nearly 53,000 people in Nevada are employed in vehicle-related fields,¹ including automotive manufacturing, sales, repairs, rentals, and maintenance, representing 3% of the state's workforce.

Electric vehicles provide significant benefits to economic development, and Nevada is poised to grow its EV industry. In the United States, the automotive industry has committed \$86 billion to electrification.² Nevada-

based companies are involved in transportation electrification through the [EV supply chain](#), including battery manufacturing, electronic controls, electronic devices used in motors and charging, and mining. There are currently [32,000 clean energy jobs](#) in Nevada (and that figure is growing), the state with the highest solar power potential in the country.

Batteries are a key component of vehicle electrification. Tesla has shown its commitment to Nevada through its Gigafactory (Figure 2). Nevada is expected to enjoy [\\$100 billion in economic benefit over two decades](#) from the construction and operation of the factory.

Economic benefits beyond the EV supply chain include growth in electricity generation and distribution, grid and infrastructure investments, vehicle sales, and associated advertising and marketing services. EV fuel cost savings can be re-invested into the community – spending on oil is roughly \$3.2 billion per year in Nevada.

The potential avoided social cost of carbon between 2020 and 2060 is a substantial \$18-20 billion.

Greenhouse Gas Emission Reductions

Transportation emissions are the largest contributor to Nevada's greenhouse gas profile (Figure 3), currently totaling about 16 Mt CO₂ per year.

Transportation electrification offers a significant opportunity to reduce greenhouse gas emissions. The estimated potential savings by switching to EVs for light duty vehicles, freight trucks, and buses is shown in Figure 4. Cumulative CO₂ savings from 2020-2060 is an estimated 195-220 Mt.

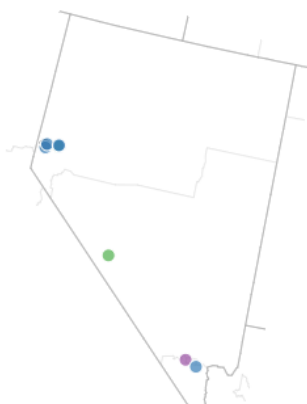


Figure 1. Facilities supporting EV supply chain in Nevada

Figure 2. Tesla Gigafactory - Sparks, Nevada

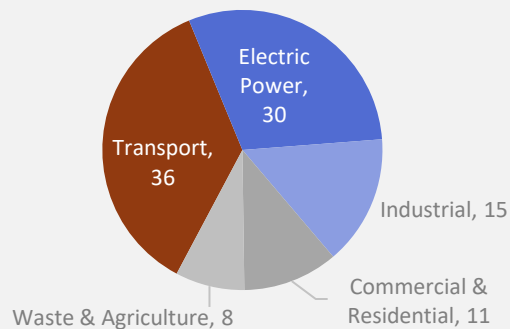


Tesla's Nevada-based battery factory, co-located near lithium mining operations in Nevada.

Image source: Wikipedia. Creative Commons Licensing, [CC BY-SA 4.0](#).

Figure 3. Transportation is Nevada's largest GHG emitting sector

Percent of GHG emissions by sector. Source: Nevada Division of Environmental Protection, [Figure ES-2](#)

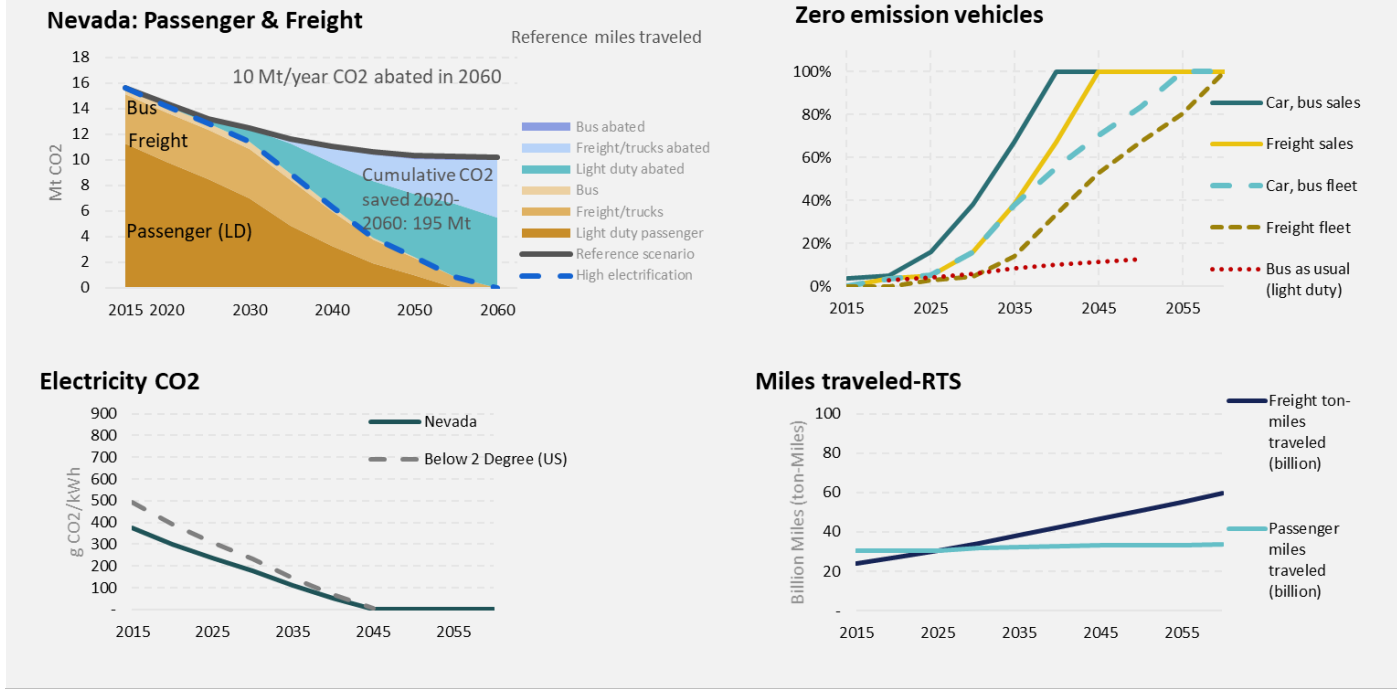


¹ Auto Alliance, <https://autoalliance.org/in-your-state/>

² Atlas Public Policy

Figure 4. GHG reductions possible with aggressive electrification

Mt CO₂ reductions: ~10 Mt/year avoided in 2060; cumulative CO₂ saved from 2020-2060 is 195-220 Mt. Low range reflects reference travel patterns (flat passenger, increasing freight travel); higher range reflects 15-18% reduction in miles traveled consistent with a Below 2 Degree Scenario (B2DS). Electricity CO₂ intensity specific to Nevada, following an assumed decarbonization pathway to 0 g CO₂/kWh in 2045. Source: Hovland Consulting estimate (2020), with inputs from [IEA Energy Technology Pathways \(2017\)](#) & other sources.



Air Quality, Public Health and Social Equity

Transportation electrification is also motivated by the opportunity to improve public health. Beyond greenhouse gas emissions, the transportation sector is a significant contributor of other harmful air pollutants – particularly in densely populated areas – that can be reduced substantially through a move to EVs. Conventional internal combustion engine vehicles (ICEVs) have long been the leading mobile-source emitters of criteria pollutants, which are considered by the U.S. Environmental Protection Agency to be harmful to public health. These include particulate pollution (PM_{2.5} and PM₁₀), carbon monoxide (CO), volatile organic compounds, and nitrogen oxides (NO_x). Air pollution from fossil fuels leads to [more than 9 million premature annual deaths globally](#), and is linked to health impacts including asthma, heart attacks, reduced lung capacity, chronic pulmonary disease, and cancer.

Of additional concern, particularly in the era of COVID-19, pollutant exposure disproportionately affects Black, Latinx, Indigenous, and low-income communities. In Nevada, these populations are significant – about 50% of residents are people of color or Latinx, and about 30% have incomes below 185% of the federal poverty line.³ Recent studies suggest that higher exposure to PM_{2.5} increases COVID-19 mortality: An increase of only 1 μg/m³ in PM_{2.5} is associated with an 8% increase in the COVID-19 death rate.⁴

³ U.S. Census Nevada Quick Facts. <https://www.census.gov/quickfacts/NV> and GIS analysis using Census data.

<https://www.census.gov/geographies/mapping-files/time-series/geo/tiger-line-file.html>. ~12.5% are below the poverty line.

⁴ Harvard (2020), *COVID-19 PM2.5: A national study on long-term exposure to air pollution and COVID-19 mortality in the United States*.

<https://projects.iq.harvard.edu/covid-pm/home>. See also *Can exposure to PM2.5 particles increase the incidence of coronavirus disease 2019 (COVID-19)?* Elsevier Public Health Emergency Collection (Nov 2020). <https://www.Mlbi.nlm.nih.gov/pmc/articles/PMC7308784/>.

In Nevada, 1.7 million people live in areas with air quality non-attainment (or high criteria emissions).⁵ Current Nevada child and adult asthma cases are estimated at 15% of the population or 230,000 people.⁶ Asthma rates in Nevada are slightly [higher than the national average](#).

Battery electric vehicles (BEVs) have zero tailpipe emissions and thus drastically improve ambient air quality and health outcomes. Across Nevada, ambitious vehicle electrification benefits could be substantial. Each year, the state could avoid 65 premature deaths, \$745 million in health costs, 770 asthma attacks, and 3,725 lost work days.⁷ In Las Vegas alone, there are about 50 deaths per year due to air pollution.

National and Energy Security

Oil accounts for about [90% of energy use in transportation](#) in the United States, and this dependence has bound the United States' national, economic, and energy security to a highly volatile, cartel-influenced global oil market. Every year, the [U.S. military spends roughly \\$81 billion](#) to safeguard global oil supplies. Ninety percent of conventional crude oil reserves are held by OPEC member states or national oil companies that do not share U.S. strategic values or interests. Some economists have estimated that the financial resources spent by the military equate to an implicit [subsidy of up to \\$0.70 per gallon](#) of gasoline. While the United States has gone to great lengths to secure supply and reduce volatility globally, not all supply disruptions can be predicted or prevented – and no matter where supply is disrupted, prices everywhere are affected.

The recent collapse of the oil market is just the latest such disruption, which has not only damaged the domestic oil production sector but has also undermined innovation and investment in electrified transportation. If the United States is to ever attain real energy security, we must accelerate the transition from petroleum-dependent transportation to electric vehicles.

Nevada alone imports about 50 million barrels of oil per year, translating to about \$3.2 billion per year (\$2.7 million per day) in spending.⁸

Pandemic-Related Uncertainties

The novel coronavirus pandemic introduced a significant degree of uncertainty in coming months, even as health conditions improve and the economy begins to rebound. Challenges include reduced travel, which lowers economic activity and state revenues; extended timelines for the introduction of new EV models, including in the much-anticipated light-duty pickup segment; lower demand for public transit and new social distancing protocols that persist for public transportation, constraining budgets; and broader employment impacts that have reduced economic activity. As a result, local and state governments are facing continued financial struggles. Meanwhile, as cities see lower emissions and improved public health conditions that result from reduced travel, there is a greater awareness of the positive impacts that increased use of EVs could have in communities.

⁵ GIS analysis using EPA non-attainment data and census for population

⁶ https://www.cdc.gov/asthma/most_recent_data_states.htm#source. National Center for Environmental Health 2018 America's Health Rankings analysis of U.S. HHS, HRSA, Maternal and Child Health Bureau (MCHB), Child and Adolescent Health Measurement Initiative (CAHMI), National Survey of Children's Health Indicator Data Set, Data Resource Center for Child and Adolescent Health, United Health Foundation, AmericasHealthRankings.org, Accessed 2020.

⁷ American Lung Association (2020), The Road to Clean Air: Benefits of a Nationwide Transition to Electric Vehicles. <https://www.lung.org/getmedia/99cc945c-47f2-4ba9-ba59-14c311ca332a/electric-vehicle-report.pdf>

⁸ US Energy Information Administration State Energy Data System (SEDS) - Petroleum consumption, <https://www.eia.gov/state/seds/seds-data-complete.php?sid=US> and gas prices ~\$2.20/gallon (https://www.eia.gov/dnav/pet/pet_pri_gnd_dcus_nus_w.htm)

Key Players

Many entities, agencies, and individuals have opportunity for EV policy action in Nevada.

Key Players

Player	Description
Governor	With excellent high-level leadership in Governor Sisolak, Nevada is poised to emerge as a leader in transportation electrification. Executive Order 2019-22 committed the State to deep decarbonization while working toward a just and equitable transition to a cleaner, more sustainable clean energy economy. The administration has also increased attention on transportation, beginning the process to adopt Clean Car Standards.
Executive Branch Leaders	Leaders from all executive branches are ready to work together to meet the carbon reduction goals set by the administration in all sectors of the economy with significant focus on transportation. A strong and well-organized advocacy community is ready to move big priorities with crosscutting messaging. Leaders include Nevada the Department of Conservation and Natural Resources, Governor’s Office of Energy, and Nevada Division of Environmental Protection.
State Legislature	Nevada is a signatory to the U.S. Climate Alliance, committing the State to meet carbon emissions reductions equivalent to the Paris Climate Accord. The political composition of the state assembly and senate is favorable to passage of good transportation electrification bills.
Fleet Managers	Outreach and education to fleets will be a crucial strategy for increasing EV adoption in Nevada. It will be important to coordinate with public- and private-sector fleet managers across the state to discuss EVs’ lower total cost of ownership, strategies for effecting a smooth fleet transition, and establishment of a direct line to the local utility regarding charging infrastructure.
EV and EVSE Supply Chain	High profile industry players across the EV ecosystem in Nevada include Tesla Motors (battery supplier), Albemarle (lithium mining), Acqua Metals (battery recycling), AIMS Power (inverters and power electronics), Altair Nanotechnologies (batteries), K2 Energy Solutions (battery supplier), Lithium Americas (mining), Panasonic (batteries), American Battery Technology Co. (battery recycling), and Redwood Materials (battery recycling).
Local and City Support	A number of local governments are active in supporting transportation electrification, including Las Vegas, Reno,* West Wendover,* and Clark County. (* denotes Climate Mayors communities)
Utilities/PUC	NV Energy (with subsidiaries Nevada Power Company and Sierra Pacific Power Company): Nevada is essentially a single-utility state, recently reinforced by a ballot initiative. NV Energy has been responsive to policies favorable to transportation electrification. NPUC has begun considering supporting electric vehicle policies.

Policy Opportunities

Nevada has a rich set of policy opportunities to pursue, with much groundwork already laid. The state is beginning the ZEV rulemaking process; leaders will also need to assertively advocate for and enact associated policies that will enable EV adoption to meet and exceed minimum standards.

Policymakers, stakeholders, and advocates must align strategic pathways, messages, and messengers, all working in a complementary fashion.

Based on our assessment to date, the top EV policy opportunities for Nevada are:

1. Enact legislation requiring Transportation Electrification Planning for utilities.
2. Enact legislation or regulations on light-duty electrification incentives.
3. Enact legislation enabling direct-to-consumer EV sales.
4. Join the Multi-State Medium- and Heavy-Duty Zero Emission Vehicle MOU.
5. Enact legislation or regulations on medium- and heavy-duty electrification targets and incentives.
6. Set targets and/or implement an EV-first purchasing policy for state fleets.

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