July 28, 2021

Nevada Department of Environmental Protection
901 S. Stewart Street,
Suite 4001
Carson City, Nevada 89701

Re: Clean Cars Nevada Proposed Rulemaking

Introduction

Consumer Reports is an independent, nonprofit membership organization that works side by side with consumers for truth, transparency, and fairness in the marketplace. We are pleased to offer our support for adoption of the Clean Cars Nevada program (currently followed by the "Clean Car" states), which upon implementation, will save Nevada consumers money, combat climate change, and deliver healthier air.

Summary

The Low Emission Vehicle (LEV) Standard

1. The LEV Standard will save consumers money and reduce vehicle emissions.
2. The LEV Standard will help lower-income Nevadans.
3. The LEV Standard is unlikely to affect the sales volume of new vehicles in Nevada.

The Zero Emission Vehicles (ZEV) Standard

1. The ZEV Standard will save consumers money and increase attractive consumer choices.
2. ZEV purchase prices will continue to fall, reaching parity with gasoline powered cars around decade's end.
3. The ZEV Standard will reduce emissions.
4. The ZEV Standard will support increasing consumer demand for electric vehicles (EVs).

Attachments

1. Petition from Nevada Residents and Consumers in favor of the Clean Cars Nevada Program
2. Nevada Survey Report
3. Electric Vehicle Ownership Costs Report
4. National Fuel Economy Survey
5. Consumer Reports' Green Choice Article and Release
6. Consumer Reports' Electric Cars 101 Article

7. Consumer Reports' Electric Vehicle Fact Sheet
8. Consumer Reports' Un-SAFE Rule Study Update

THE LOW EMISSIONS VEHICLE STANDARD

1. **The LEV Standard will save consumers money and reduce vehicle emissions.**

By adopting the LEV standard, Nevadans would save nearly $2.5 billion, according to a Consumer Reports study.[1] These net savings include fuel savings as well as the technology costs needed to reduce vehicle emissions.

As efficiency gains and emission reductions have been made in the vehicle fleet nationally under existing federal greenhouse gas standards, vehicle sales have increased, new vehicles have gotten safer, and the affordability of vehicles has been preserved.[2] The federal fuel economy and greenhouse gas program has a proven record of success, and there is still room to continue improvements and increase consumer benefits. Overall, adopting the LEV standards, which affect vehicles from MY2017-2025, would net Americans $300B in savings relative to the federal standards rolled back in 2019.[3]

Improving fuel economy is one of the ways automakers reduce greenhouse gas emissions from their vehicles under the LEV program--additional tools include selling alternative fuel vehicles, improving the efficiency of air-conditioning systems, and using lower-polluting refrigerants. Reducing greenhouse gas (GHG) emissions is critical to avoiding the disastrous effects of climate change.

Without standards providing guardrails for the market, automakers are less likely to deliver cost-saving emissions-reduction technology to consumers. The robust technical analysis conducted by the Environmental Protection Agency (EPA) and National Highway Traffic Safety Administration (NHTSA) in 2016, as well as more recent reports from ICCT show that many cost-effective technologies to reduce fuel use and emissions are currently underutilized.[4] Worse still, in 2020 the EPA found that the greenhouse gas emissions of new vehicles sold in the U.S. increased for the first time in several years.[5] As fuel efficiency and lower-emission vehicle technology work hand in hand, adopting

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[1] Chris Harto & Shannon Baker-Branstetter, The Un-SAFE Rule Update, Consumer Reports (November 2019), https://advocacy.consumerreports.org/wp-content/uploads/2019/11/UnSAFE-Addendum-11.13.19.pdf

[2] Tyler Comings & Avi Allison, More Mileage for Your Money: Fuel Economy Increases While Vehicle Prices Remain Stable, SYNAPSE (March 15, 2017), https://consumersunion.org/wp-content/uploads/2017/03/Synapse-CU-Affordability-Report-3-15-corrected-1.pdf

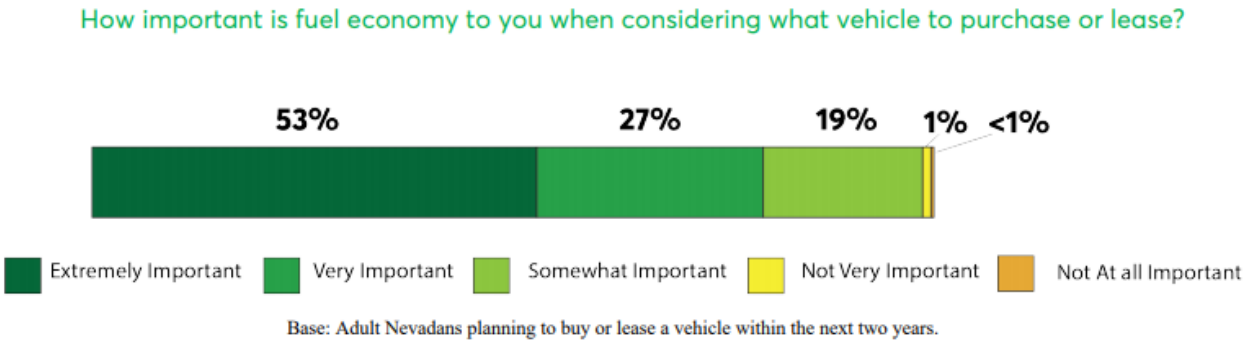
[3] Chris Harto & Shannon Baker-Branstetter, The Un-SAFE Rule Update, Consumer Reports (November 2019), https://advocacy.consumerreports.org/wp-content/uploads/2019/11/UnSAFE-Addendum-11.13.19.pdf

[4] Nic Lutsey et al., Efficiency Technology and Cost Assessment for U.S. 2025-2030 Light-Duty Vehicles, ICCT (March 2017), https://www.theicct.org/sites/default/files/publications/US-LDV-tech-potential_ICCT_white-paper_22032017.pdf.

[5] U.S. Environmental Protection Agency, *The Automotive Trends Report,* January 2021

the LEV standards will help put added pressure on automakers, ensuring that Nevada consumers reap the benefits of vehicle technology advances.

Nevada consumers want and expect automakers to improve the fuel economy of their vehicles each year, according to Consumer Reports' survey data.[6] Among prospective vehicle buyers in Nevada (those in the market for a new or used vehicle within the next two years) 80% said fuel economy was either 'extremely important' or 'very important.' Less than 1% said fuel economy was 'not very important' or 'not at all important.'[7]



In fact, this issue holds so much relevance for consumers that Consumer Reports uses fuel economy when rating vehicles as part of its consumer product testing program.

Additionally CR recently unveiled a new program called *Green Choice*, which uses a green leaf icon to help consumers identify new vehicles with the lowest greenhouse gas and smog-forming emissions. Among CR's 10 Top Picks in cars and trucks for 2021, four are Green Choices. This shows that it is possible for automakers to create vehicles that are safe and sustainable, and also are reliable, perform well, and make owners happy.[8]

2. **The LEV Standard will help lower income Nevadans because it will increase the availability of used and new vehicles with a lower total cost of ownership.**

Higher fuel efficiency in cars and trucks lowers annual fuel spending. While the price of other consumer goods has risen over the past two decades, vehicle prices in real terms have remained flat, even as passenger cars and trucks go farther on every gallon of gas (see figure 2).[9]

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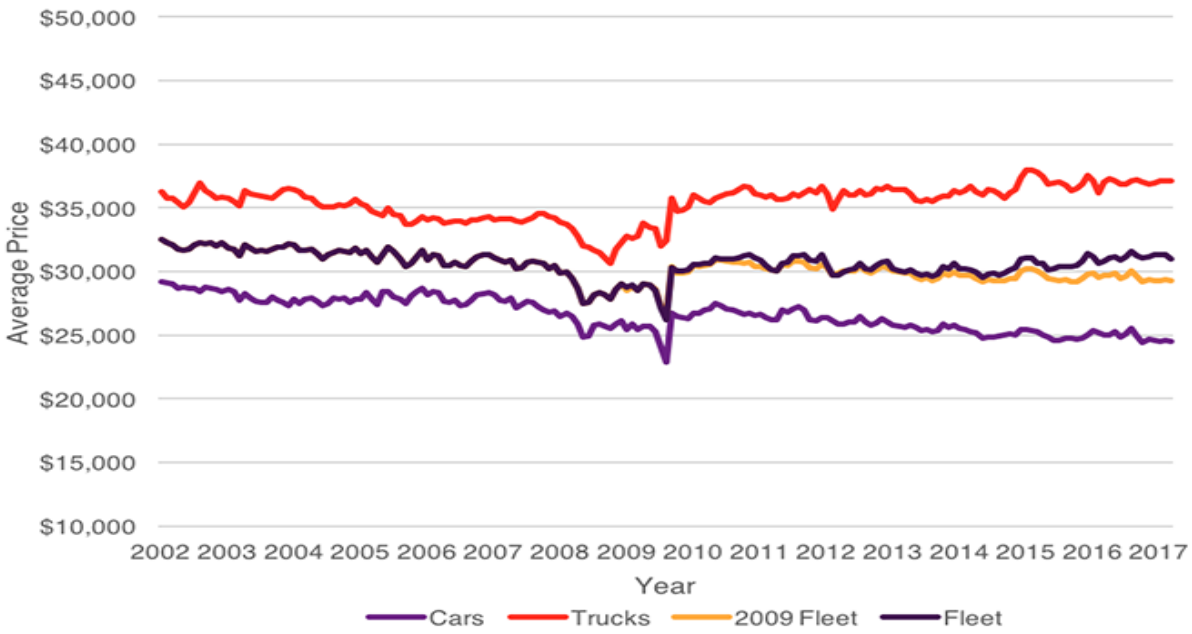
[6]

[7] *Ibid*

[8] Consumer Reports, Green Choice Press Release, 2/18/21

[9] Eric Junga, *Fuel economy is going up. Vehicle prices are holding steady*, American Council for an Energy-Efficient Economy, November 16, 2017, http://aceee.org/blog/2017/11/fuel-economy-going-vehicle-prices-are.

Figure 2. Average New Vehicle Transaction Price for Cars, Trucks, and the Combined Fleet



Consumer spending data, discussed below, shows that trends in new and used car pricing has benefited moderate-income households and that the LEV Standard will lead additional benefits for this cohort. This is consistent with the fact that Americans in the lowest income quintile spend 26% of their transportation budget on gasoline and motor oil, while those in the top quintile, which represent most new car buyers, spend just 16%. The average American spends about 21%.

Low-income households spend more money fueling cars than buying them,[10] and are particularly sensitive to gas prices. One recent study found "as a percent of income, savings on fuel are greatest for lower income households." [11] Increased availability of cars meeting LEV standards will help lower income families by reducing fuel costs.

The benefits of improved efficiency in new vehicles also make their way to the used car market, which accounts for 70 percent of vehicle sales annually, and an even higher percent among mid to lower income families. Lower-income households are more likely to buy a used car, and they benefit from the rapid depreciation of new car value. Buying a used vehicle compliant with LEV standards enables a used car buyer to enjoy the fuel savings at even a lower cost. Those purchasers of those used cars meeting the LEV

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[10] *More Mileage for Your Money: Fuel Economy Increases While Vehicle Prices Remain Stable*, March 15, 2017, https://consumersunion.org/research/more-mileage-for-your-money-report/

[11] Greene, D. and J. Welch. 2016. *The Impact of Increased Fuel Economy for Light-Duty Vehicles on the Distribution of Income in the United States*. Report Prepared for Oak Ridge National Laboratory and the Energy Foundation. Available at: http://bakercenter.utk.edu/wp-content/uploads/2016/09/Equity-Impacts-of-Fuel-Economy-Report_final.pdf.

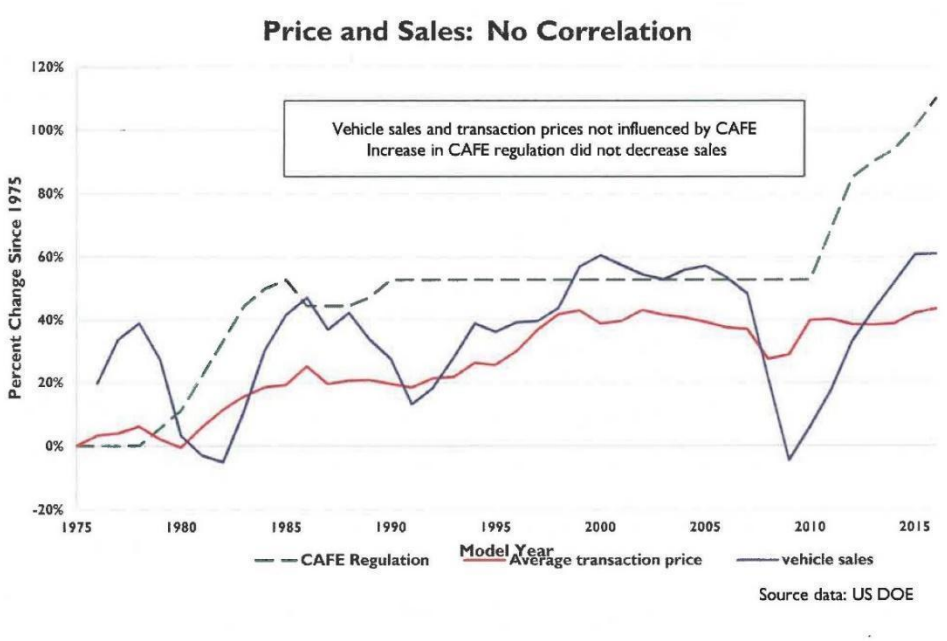
standards, in particular will enjoy the same stream of fuel savings as a new vehicle purchaser, but will pay only a fraction of the incremental cost for the cleaner, more fuel-efficient technology due to depreciation (the average new passenger vehicle depreciates by 60% within the first five years of its life).

3. **The LEV Standard is unlikely to change sales volume of new vehicles in Nevada. New vehicle sales are primarily controlled by macroeconomic factors, so the LEV Standard is unlikely to affect sales.**

New (and used) car sales are mostly influenced by macroeconomic factors, such as the state and nation's gross domestic product, employment rates, inflation, and oil and gasoline prices, and not by governmental regulation. Greenhouse gas (GHG) vehicle standards are unlikely to affect the number of new cars sold in Nevada. Figure 1, below, which is based on data from the U.S. Department of Energy as presented by the Aluminum Association, shows the relationship over time between CAFE standards, the price of a new vehicles and the number of vehicles sold.[12] As shown in this graph, an increase in vehicle price does *not* translate into lower sales. Periods of higher vehicle sales occur when prices are rising or flat, and such sales can decrease when prices drop. This means that car sales are primarily influenced by macroeconomic factors, not the price of the vehicles. Similarly, changes in miles per gallon (MPG) requirements do not show any relationship to the number of cars sold. There are multiple times when the MPG requirement climb steeply and new cars sales climb with it. There are periods when the MPG requirements are flat, and new car sales decline sharply. Likewise, regulations such as the LEV Standard are very unlikely to affect new vehicle sales in Nevada.

Figure 1: Price and Sales: No Correlation

[12] News Release, *Automotive Aluminum Industry Statement on Today's EPA Determination on Emissions Regs*, DRIVE ALUMINUM (Aug. 2, 2018), https://www.drivealuminum.org/news-releases/automotive-aluminum-industry-statement-on-todays-epa-determination-on-emissions-regs/.



<u>If there is an effect, The LEV Standard is likely to increase the sales of new vehicles, because LEV vehicles have a lower total cost of ownership.</u>

The LEV standards at issue in this rulemaking will lead to a lower total cost of ownership for trucks and cars. Consumer Reports found that the average Nevada family would save $2100 during the time they own a model year 2025 vehicle, assuming typical driving patterns.[13] Similarly, a Synapse Energy Economics report found that GHG standards such as the LEV standard reduced the cost of ownership, tending to increased sales.[14]

In sum, given the lower price and higher utility of new vehicles under the LEV Standard, if there is an effect, it would be to increase the sales of new light-duty vehicles. Studies on the macroeconomic impact of GHG standards show that such impacts will be positive because fuel savings enable a shift in consumer spending to more productive parts of the economy when consumers use that money to consume local services, like eating out, or high value products like computers.[15] The direct and indirect benefits of a LEV rule are thus positive.

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[13] *Clean Car Roll-back: Estimated costs for American families if U.S. climate pollution and fuel economy standards are relaxed*, https://www.edf.org/sites/default/files/MJ_Bradley_Clean_Cars_rollback_report.pdf at 54 (assumptions).

[14] *Cleaner Cars and Job Creation, Macroeconomic Impacts of Federal and State Vehicle Standards, March 27, 2018,* http://webcache.googleusercontent.com/search?q=cache:http://www.synapse-energy.com/cleaner-cars-and-job-creation (Cleaner Cars).

[15] *Id*.

ZERO EMISSIONS VEHICLE STANDARD

1. **The ZEV Standard will increase attractive consumer choices and save consumers money.**

EVs significantly lower the total cost of ownership for consumers, which in turn allows consumers to spend those savings in the broader economy. A recent Consumer Reports study found key cost savings:

- Owning an electric vehicle will **save the typical driver $6,000 to $10,000** over the life of the vehicle, compared to owning a comparable gas-powered vehicle.
- The average EV driver will **spend 60% less to power their vehicle** than the owner of a gas-powered vehicle.
- EV owners are spending **half as much to repair and maintain their vehicle** as owners of gas-powered vehicles; with much of that savings benefiting used car buyers.[16]

  The full report is attached and also available at CR.com.

EV operating costs for fuel and maintenance can result in overall savings even today,[17] and certainly by the time a rule goes into effect for model year 2025.[18] For example, in Nevada, the average cost to charge an EV is 60% the cost to fuel an average internal combustion engine (ICE) vehicle.[19] Compared to the average ICE vehicle, fuel savings can be about $1,000 for every 15,000 miles driven by an EV, and even compared to a very efficient internal combustion engine vehicle, EV drivers could save about $500 per year.[20]

Due to fewer and simpler components, EV maintenance is less expensive than it is for ICE vehicles.[21] EV owners can save as much as 50% on maintenance costs compared

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[16] Consumer Reports, Electric Vehicle Ownership Costs: Today's Electric Vehicles Offer Big Savings for Consumers, Chris Harto, October 2020

[17] Consumer Reports, Electric Vehicle Ownership Costs: Today's Electric Vehicles Offer Big Savings for Consumers, Chris Harto, October 2020

[18] *Saving on Fuel and Vehicle Costs*, U.S. Dep't of Energy, Office of Energy Efficiency & Renewable Energy, https://www.energy.gov/eere/electricvehicles/saving-fuel-and-vehicle-costs (last visited July 28, 2019); *see also* Lutsey & Nicholas, *supra,* at 5 fig.6 (showing total cost of ownership being lower for some BEV vehicles by MY2022, without even considering tax credits).

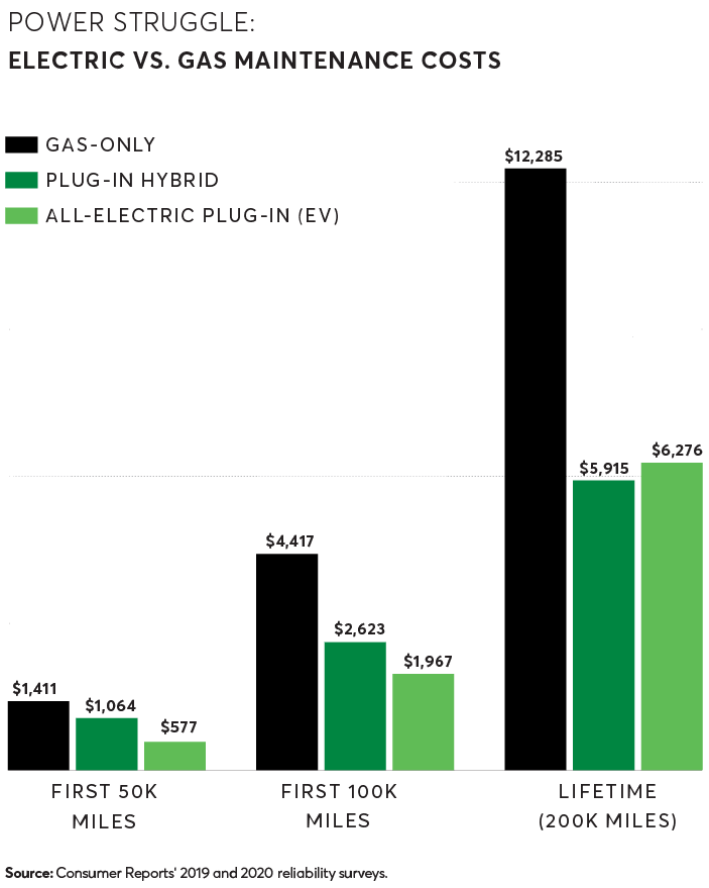
[19] Consumer Reports, Electric Vehicle Ownership Costs: Today's Electric Vehicles Offer Big Savings for Consumers, Chris Harto, October 2020

[20] This value reflects Consumer Reports' comparison of a battery electric vehicle to a 40 mpg vehicle on www.fueleconomy.gov using 12,000 miles per year and average fuel and electricity prices from DOE's "eGallon" tool.

[21] *Hybrid/EV Buying Guide*, Consumer Reports, https://www.consumerreports.org/cro/cars/hybrids-evs/buying-guide/index.htm (July 11, 2019)

to owners of ICE vehicles.[22] These lower operating cost benefits accrue even more to moderate and lower-income families as more affordable ZEV vehicles become available on both the new and used vehicle markets.

Consumer Reports product testing and survey team found real-world comparisons between ICE and EV maintenance costs:



A Zero Emission Vehicle program in Nevada would give consumers more choices by making electric vehicles easier to find and buy at local auto dealers. The program would ensure that at least 5 percent of auto sales in the state are electric vehicles by 2025. Currently, without a ZEV program, automakers and dealers are not making the full range of vehicle choices available to consumers. Only 28 percent of Nevadans reported seeing advertisements for electric vehicles, compared to a national average of 44 percent.[23] The ZEV program would increase consumer choice by making it easier to bring a greater variety of electric vehicles to Nevada, including pickup trucks, SUVs and crossovers.

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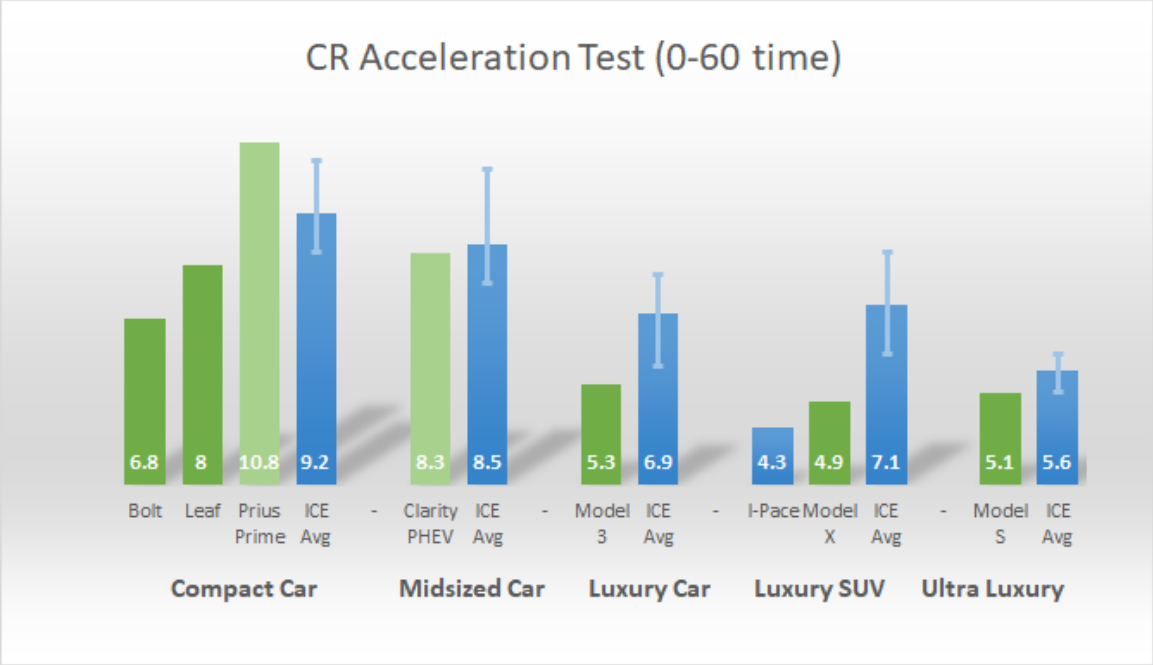
[22] Consumer Reports, Electric Vehicle Ownership Costs: Today's Electric Vehicles Offer Big Savings for Consumers, Chris Harto, October 2020

[23] Consumer Reports, Consumer Attitudes Toward Electric Vehicles and Fuel Efficiency in Nevada Survey Findings, March 2021

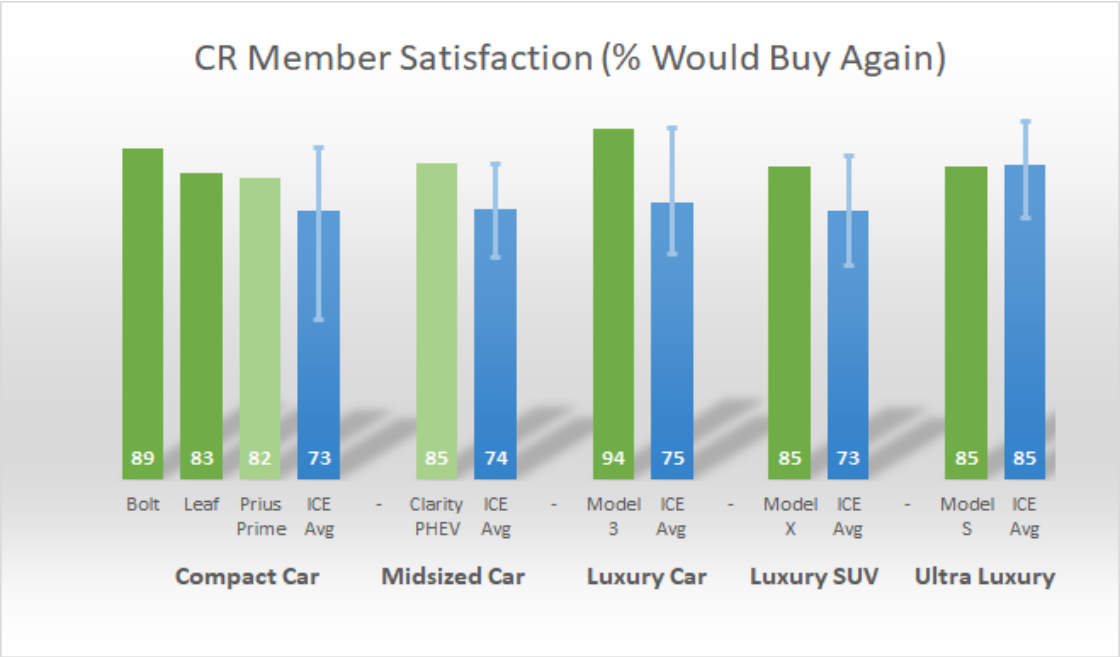
EVs have attractive features that satisfy consumers. As shown below, Consumer Reports' testing and member survey data show that EVs often have superior acceleration and owner satisfaction than ICE vehicles in the same class. EVs also have quiet operation, and their low center of gravity supports superior handling.[24] The graph below shows that in Consumer Reports tests, EVs are faster than the average ICE vehicle in their vehicle class. Values in the graph are measured in seconds, so lower values indicate faster acceleration.



Source: Consumer Reports Test Data (June 2019)[25]

In Consumer Reports' member vehicle owner satisfaction survey, which includes over 500,000 responses, EVs had equivalent or higher owner satisfaction in every vehicle class for which responses were collected.

[24] *Electric Cars 101: The Answer to All Your EV Questions*, *supra*.
[25] This figure was created using Consumer Reports data.



Source: Consumer Reports Member Owner Satisfaction Survey Results (February 2019)[26]

2. ZEV Purchase Prices Will Continue To Fall, Reaching Parity With Gasoline Powered Cars By About Decade's End

While mainstream EVs can already save consumers money when accounting for purchase, fueling and maintenance, the initial cost of EVs is currently higher than that of gasoline cars. But, that purchase price disparity between EVs and ICE Vehicles is expected to decline. Currently, the relatively high cost of lithium ion batteries that power EVs causes this discrepancy. However, the cost of batteries dropped by almost 90% over the past decade, and prices are expected to continue to fall in the future.[27] This continued decline in battery costs is expected to reduce the cost of electric vehicles to the point of cost parity with conventional gasoline vehicles at some point this decade.

Table 1. Various Studies Estimates of Electric Vehicle Cost Parity with Gasoline Vehicles

Organization	Cost Parity Year
ICCT[28]	By 2028
BNEF[29]	2023-2024

[26] This figure was created using Consumer Reports data.
[27] https://www.bloomberg.com/news/articles/2020-12-16/electric-cars-are-about-to-be-as-cheap-as-gas-powered-models
[28] https://theicct.org/sites/default/files/publications/EV_cost_2020_2030_20190401.pdf
[29] https://www.bloomberg.com/news/articles/2020-12-16/electric-cars-are-about-to-be-as-cheap-as-gas-powered-models

UBS[30]	By 2024
McKinsey[31]	Around 2025
Carnegie Mellon University[32]	By 2025
General Motors[33]	By 2030

Estimates of when cost parity for electric vehicles will be achieved vary, but most estimates fall between 2023 and 2028 (see Table 1).

However, in vehicle classes such as luxury and sports cars, where consumers are willing to pay extra for power and performance, electric vehicles are expected to be less expensive than gas powered vehicles no later than 2025. This is because it is more cost efficient to add additional horsepower to an electric vehicle than to a gasoline vehicle. That extra power also comes with less of a penalty in terms of fuel cost due to the inherent greater efficiency of electric vehicles, and the lack of a need for premium fuel. This is backed up by claims from GM that EVs are already cheaper in the luxury segment.[34] It is also reflected in the actions of the rest of the auto industry, with many luxury automakers promising to rapidly increase electrification, and some promising to go all electric by the end of the decade.[35]

3. The ZEV Standard will reduce emissions.

A Zero Emission Vehicle program in Nevada would increase EV sales and help reduce pollution by making electric vehicles easier to find and buy at local auto dealers. The transportation sector accounts for the greatest percentage of GHG emissions in Nevada, increasing to 36% of gross GHG emissions in 2017.[36] EVs have lower greenhouse gas emissions than gasoline powered vehicles over their service life.[37]

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[30]https://www.theguardian.com/environment/2020/oct/21/electric-cars-as-cheap-to-manufacture-as-regular-models-by-2024

[31] https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/making-electric-vehicles-profitable

[32]https://theconversation.com/the-road-to-electric-vehicles-with-lower-sticker-prices-than-gas-cars-battery-costs-explained-137196

[33] https://www.wardsauto.com/industry-news/gm-cto-ev-price-parity-will-come-sooner-later

[34] https://www.wardsauto.com/industry-news/gm-cto-ev-price-parity-will-come-sooner-later

[35] Jaguar all electric by 2025 (https://www.caranddriver.com/news/a35519105/jaguar-land-rover-ev-only/), Volvo all electric by 2030 (https://www.bbc.com/news/business-56245618), Bently all electric by 2030 (https://www.bbc.com/news/business-54835588),

[36] Nevada Division of Environmental Protection, Nevada Statewide Greenhouse Gas Emissions Inventory and Projections, 1990-2040, https://ndep.nv.gov/uploads/air-pollutants-docs/ghg_report_2020.pdf

[37] Shannon Baker-Branstetter & Chris Harto, How Clean are Electric Vehicles in Your State, Consumer Reports, September 12, 2019, https://advocacy.consumerreports.org/research/how-clean-are-electric-vehicles-in-your-state/

EVs also do not emit particulate or smog-forming tailpipe emissions, which are a significant contributing factor in causing asthma and other air pollution-related illnesses.[38]

Increasing ZEVs would decrease emissions from transportation, and even after considering increased emissions from the electric sector to power EVs, transportation electrification reduces economy-wide emissions. In fact, EVs in Nevada have 68% lower greenhouse gas emissions than the average gasoline-powered vehicle in the state, based on Nevada's energy mix.[39]

According to the National Academies of Science, Engineering and Medicine, ZEV sales must account for 50% of new car sales by 2030 to address the worst impacts of climate change.[40] Adopting the ZEV Standard, by expanding the availability of ZEVs, will play an important role EVs also do not emit particulate or smog-forming tailpipe emissions, which are a significant contributing factor in causing asthma and other air pollution-related illnesses. putting Nevada on the path to reach these goals.

4. **Consumer demand for EVs is increasing.**

Despite access and exposure barriers, 73 percent of prospective car buyers in Nevada have some interest in electric cars, trucks and SUVs.[41] Breaking this down, 37 percent would consider one within the next two years, and 10 percent say they are definitely planning on buying or leasing one in the next two years.[42] 55 percent of Nevadans think the state should require automakers to offer electric vehicle options.[43] (*See figure below.*)

Despite lower overall auto sales, limited EV availability and model choices,[44] and tepid efforts by automakers and dealers to market them,[45] consumers remain interested. In Consumer Reports' national analysis of auto advertising, ads for EVs were 1% of the

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[38] Marlene Cimons, Nexus Media, Cleantechnica, Car Exhaust is a Key Contributor to Asthma in Children, April 28, 2019, https://cleantechnica.com/2019/04/28/car-exhaust-is-a-key-contributor-to-asthma-in-children/ and Press Release, Joe Koenig, 7-State Electric Vehicle Project Launches in Midwest, American Lung Association, February 9, 2017, https://www.lung.org/local-content/_content-items/about-us/media/press-releases/7-state-electric-vehicle.html

[39] Shannon Baker-Branstetter & Chris Harto, How Clean are Electric Vehicles in Your State, Consumer Reports, September 12, 2019, https://advocacy.consumerreports.org/research/how-clean-are-electric-vehicles-in-your-state/.

[40] National Academies of Science, Engineering and Medicine, *Accelerating Decarbonization of the US Energy System,* 2021

[41] Consumer Reports, Consumer Attitudes Toward Electric Vehicles and Fuel Efficiency in Nevada Survey Findings, March 2021

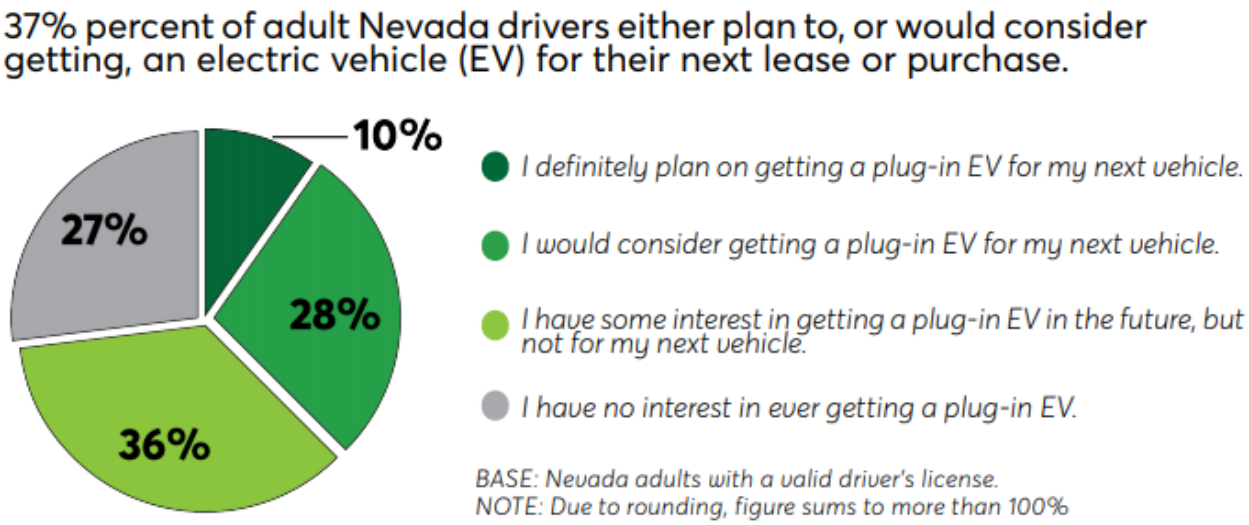
[42] *Id.*

[43] *Id.*

[44] *Electric Cars 101: The Answer to All Your EV Questions*, Consumer Reports (July 21, 2019), https://www.consumerreports.org/hybrids-evs/electric-cars-101-the-answers-to-all-your-ev-questions/#social_fb_comments.

[45] Gwen Arnold et al., Consumers Union, Analysis of Unique Ads in the United States in 2005, 2012, 2015 and 2017, at 6, 57 (2018), https://advocacy.consumerreports.org/wp-content/uploads/2018/10/Final-Report-Auto-Ad-Content-Analysis-080318-1-1-1.pdf.

representative sample.[46] As mentioned above, Nevadans are less likely to see ads for EVs, according to Consumer Reports' recent state-representative survey.[47]



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Conclusion

For the reasons outlined above, Consumer Reports supports Nevada's adoption of the Low Emissions Vehicle Standard and the Zero Emissions Vehicle Standard. Thank you for your consideration of these important consumer programs.

Sincerely,

Alfred J. Artis
Policy Analyst, Sustainability
Consumer Reports

[46] *Id.* at 6.
[47] Consumer Reports, Consumer Attitudes Toward Electric Vehicles and Fuel Efficiency in Nevada Survey Findings, March 2021