Nevada Division of Environmental Protection

Clean Cars Nevada
On the Road to a Cleaner Nevada

SEC Hearing
September 1, 2021

Presented by:
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Introduction and Presentation of the Regulatory Petition

Clean Cars Nevada Implementation, Compliance, and Enforcement

- Air Quality and Economic Impacts
- Stakeholder Engagement and Public Outreach
Introduction and Presentation of the Regulatory Petition
In June 2020, Governor Sisolak announced Clean Cars Nevada, as part of the State of Nevada Climate initiative.

Clean Cars Nevada will help advance the State’s climate change and sustainability goals, reduce harmful air pollution from cars and light-duty trucks on Nevada roads, and strengthen the economy.
Clean Cars Nevada is Proposing the Evaluation and Adoption of Two New Regulatory Programs

Low Emission Vehicle (LEV) Program – Meet emission requirements that reduce greenhouse gases, criteria air pollutants, and hazardous air pollutants.

Governor Sisolak announces Clean Cars Nevada

NDEP Initial Draft of Regulation R093-20

Informal Outreach Kick-Off

LCB Working Draft of Regulation R093-20

Stakeholder Engagement Starts

1/14/2021

1/5/2021

6/22/2020

12/8/2020

LCB Re-Draft of Regulation R093-20

Stakeholder Engagement Ends

6/17/2021

7/20/2021

7/28/2021

9/1/2021

SEC Meeting

Public Workshop
WHY THE REGULATORY PETITION IS NEEDED

NDEP’s Air Program

NRS 445B.100 Declaration of Public Policy

It is the public policy of the State of Nevada and the purpose of NRS 445B.100 to 445B.640, inclusive, to achieve and maintain levels of air quality which will protect human health and safety, prevent injury to plant and animal life, prevent damage to property, and preserve visibility and scenic, esthetic and historic values of the State.

- Greenhouse Gases (GHGs)
- Criteria Air Pollutants
- Hazardous Air Pollutants (HAPs)
- NAAQS
Clean Cars Nevada Will Address Three Air Program Challenges

1. Greenhouse Gas (GHG) Emission Reduction Goals (CO₂, CH₄, N₂O, and HFC (for Air Conditioning systems)).

2. Criteria Air Pollutants (Ground-level Ozone, Particulate Matter, Carbon Monoxide, Lead, Sulfur Dioxide, and Non-Methane Organic Gases (NMOG) + Nitrogen Dioxide) and Attainment with the National Ambient Air Quality Standards (NAAQS).

3. Hazardous Air Pollutants (e.g., Formaldehyde).
WHY THE REGULATORY PETITION IS NEEDED (CONTINUED)

NOx +VOC +Heat & Sunlight = Ozone
WHY THE REGULATORY PETITION IS NEEDED (CONTINUED)

**AUTHORITY TO ADOPT CLEAN CAR STANDARDS**

Clean Air Act, Title I – Air Pollution Prevention and Control, Part D – Plan Requirements for Nonattainment Areas, Section 177 (42 U.S. Code § 7507) – New Motor Vehicle Emission Standards in Nonattainment Areas

May adopt and enforce for any model year standards relating to control of emissions from new motor vehicles or new motor vehicle engines if:

- Standards are identical to the California standards for which a waiver has been granted for such model year; and
- California and States adopt standards at least two years before commencement of model year.
Clean Air Act, Title I

No “third vehicle”
States that have Adopted California's Vehicle Standards under Section 177 of the Federal Clean Air Act

State Emissions Standards

- **Purple**: Adopted Both CA LEV and ZEV
- **Green**: Adopted CA LEV
- **Orange**: Currently working on adopting CA LEV and ZEV
- **Gray**: Follow Federal Standards
NRS 445B.760 Authority of Commission to prescribe standards for emissions from mobile internal combustion engines; trimobiles; standards pertaining to motor vehicles to be approved by Department of Motor Vehicles.

The State Environmental Commission may by regulation prescribe standards for exhaust emissions, fuel evaporative emissions and visible emissions of smoke from mobile internal combustion engines on the ground or in the air, including, but not limited to, aircraft, motor vehicles, snowmobiles and railroad locomotives.
Key Provisions of NAC 445B.900:

• Sections 3-17 of this regulation define certain terms relating to emissions standards.

• Section 19 of this regulation sets forth: (1) the motor vehicles to which this regulation applies beginning in model year 2025; and (2) certain exceptions to the requirements of this regulation.

• Section 20 of this regulation adopts by reference certain provisions of California law relating to emissions standards and low and zero emission vehicles.

• Section 21 of this regulation prohibits, with certain exceptions, the sale, lease, import, delivery, registering or otherwise receiving or acquiring of passenger cars, light-duty trucks, medium-duty passenger vehicles or medium-duty vehicles that are not certified to California’s emissions standards.
Key Provisions of NAC 445B.900:

• Sections 22 and 23 set fleet average non-methane organic gas plus oxides of nitrogen and greenhouse gas emission standards; and provide that a manufacturer may earn and utilize credits and debits for the sale of vehicles in this State.

• Sections 24 and 25 require manufacturers to submit annual reports detailing the non-methane organic gas plus oxides of nitrogen or greenhouse gas emissions of the manufacturer’s fleet produced and delivered for sale in this State.

• Section 26 of this regulation requires a manufacturer to submit upon request certain documents related to motor vehicles sold in this State by the manufacturer.
Key Provisions of NAC 445B.900:

- Section 27 provides that an authorized representative may enter any premises of a vehicle dealer to inspect motor vehicles.
- Section 28 may require a vehicle dealer to submit certain information to determine compliance; and retention of records for 3 years.
- Section 29 requires manufacturers of certain motor vehicles to provide an emissions control system warranty.
- Section 30 Environmental Performance Labels.
- Section 31 requires manufacturers of certain types of vehicles to comply with various requirements for emissions-related recall campaigns.
Key Provisions of NAC 445B.900:

• Section 32 of this regulation requires: (1) all zero emission vehicles produced and delivered for sale in this State to be certified as zero emission vehicles; and (2) manufacturers to comply with the minimum ZEV credit obligation for the sale of zero emission vehicles.

• Section 33 authorizes manufacturers to earn early action credits for model years 2022, 2023 and 2024.

• Section 34 sets forth requirements for the calculation of initial ZEV credits and restrictions on the use of these credits for the 2025 and 2026 model years.

• Section 35 requires manufacturers to submit an annual report of ZEV credits generated or transferred for each vehicle sold in this State.
Key Provisions of NAC 445B.900:

• Section 36 provides that a manufacturer who fails to meet its credit obligation for the sale of zero emission vehicles in this State must make up the credit deficit by the next model year or the manufacturer may be subject to a civil penalty.

• Section 37 provides that the Department shall not enforce the provisions of this regulation until the later of January 1, 2022, or the date that the waiver issued by the EPA to California pursuant to 42 U.S.C. § 7543 is reinstated or a new waiver is issued.
General Provisions – Definitions. [1900]

Approval of Motor Vehicle Pollution Control Devices (New Vehicles) –

• Exhaust Emissions Standards and Test Procedures. [1956.8(h), 1960.1, 1961, 1961.2]
• Electric Vehicle Charging Requirements. [1961.3]
• Emission Control, Smog Index, and Environmental Performance Labels. [1965]
• Malfunction and Diagnostic System Requirements. [1968.2]
• Enforcement of Malfunction and Diagnostic System Requirements. [1968.5]
Approval of Motor Vehicle Pollution Control Devices (New Vehicles)

• Standards and Test Procedures for Motor Vehicle Fuel Evaporative Emissions. [1976]

• Standards and Test Procedures for Vehicle Refueling Emissions. [1978]

Emission Control System Warranty [2035, 2036, 2037, 2038, 2039, 2040, 2041, 2046]

Enforcement of Vehicle Emission Standards and Surveillance Testing –

• Test Procedures. [2062, 2139]

• Enforcement of Vehicle Emission Standards and Surveillance Testing – Recall Provisions. [2109, 2111-2135]
Enforcement of Vehicle Emission Standards and Surveillance Testing –
• Procedures for Reporting Failures of Emission-Related Components. [2141-2149]
• Specifications for Fill Pipes and Openings of Motor Vehicle Fuel Tanks – Requirements. [2235]
CARB ACC II MY 2026 AND BEYOND

• On May 6, 2021, California Air Resources Board staff proposed draft regulations that seek to further reduce criteria and GHG pollutants from new light and medium-duty vehicles for 2026 and beyond.
  ✓ Annual manufacturer credit requirements progressively increase to 2035, when 100% ZEVs are required.

• This current Clean Cars Nevada rulemaking does not seek to adopt the draft CARB ACC II recommendations.

• NDEP commits to revisit the issue in a future Clean Cars Nevada rulemaking in 2022.

https://ww2.arb.ca.gov/events/public-workshop-advanced-clean-cars-ii
Clean Cars Nevada Implementation, Compliance, and Enforcement
Low Emission Vehicle (LEV) Program – Meet emission requirements that reduce criteria air pollutants, hazardous air pollutants, and greenhouse gases.

- LEV – Criteria Air Pollutants
  - Hazardous Air Pollutants

- LEV – Greenhouse Gases
CLEAN CARS NEVADA – LEV PROGRAM

APPLICABILITY

New Vehicles and Engines from MY 2025

Definitions vary based on gross vehicle weight, number of passengers, and purpose

Passenger Cars
(Acura ILX)

Light-Duty Trucks
(Toyota Tacoma)

Medium-Duty Passenger Vehicles
(Chevrolet G2500 Express)

Medium-Duty Vehicles
(Dodge RAM 3500)
CLEAN CARS NEVADA – LEV PROGRAM
EXEMPTIONS

Exemptions:

• Any vehicle with 7,500 miles or more of use as of the date of sale or lease (i.e., Used Vehicle);
• Any vehicle designated as an authorized emergency vehicle pursuant to NRS 484A.480;
• Any vehicle that meets the definition of a military tactical vehicle pursuant to NRS 445B.759; and
• Any vehicle that is:
  ✓ Sold to another dealer;
  ✓ Sold for the purpose of being wrecked or dismantled;
  ✓ Sold exclusively for off-highway use; or
  ✓ Sold for registration out-of-state.
A Manufacturer Must Demonstrate Compliance with:

- Exhaust Emission Standards applicable to specific vehicle groups, and
- Composite Emission Standards Requirements applicable to the manufacturer's entire fleet. (CCR §§ 1961.2, 1961.3)

Other Provisions

- On-Board Diagnostic Systems Requirements (CCR §1968.2)
- Fuel Evaporative Emissions Standards (CCR §1976)
- Vehicle Refueling Emissions Standards (CCR §1978)
- Warranties and Recalls (CCR Chapter 1 – Art. 6 and Chapter 2 – Art. 2)
- Compliance Credits (CCR §1961.2 and §1961.3)
- Labeling Requirements (CCR §1965)
CLEAN CARS NEVADA – LEV PROGRAM CERTIFICATION

For those LEV standards applicable to vehicles or family of vehicles:

Car Manufacturers Apply for Certification

Testing and Verification

Vehicle model is approved for sale in LEV states

Owners of New Vehicles

Registration

Verifies Compliance with CARB certification
CLEAN CARS NEVADA – LEV PROGRAM COMPLIANCE

Annual Car Manufacturer Reports

Verifies Compliance with certified vehicles delivered for sale, emission fleet averages, labels, warranties and recalls

DMV dmvnv.com

Inspections (not mandatory)

Car Dealers
“Zero emission vehicle” or “ZEV” means a vehicle that produces zero exhaust emissions of any criteria pollutant, precursor pollutant or greenhouse gas under any possible operational mode or condition. There are two classes of ZEV:

• Battery electric vehicles (BEV), which are vehicles that operate solely by use of a battery or battery pack; and
• Fuel cell electric vehicles (FCEV), which are ZEVs fueled primarily by hydrogen.

“Transitional zero emission vehicle” or “TZEV” is a term used to describe qualifying partial zero emission vehicles. There are two classes of TZEV:

• Plug-in hybrid electric vehicles (PHEV), which are vehicles that can be operated with an internal combustion engine as well as a battery or battery pack which can be recharged by plugging into an external source of electric power; and
• Hydrogen internal combustion engine vehicles.
CLEAN CARS NEVADA – ZEV PROGRAM

APPLICABILITY

New vehicles delivered for sale from MY 2025:

Passenger Cars
(2022 Renault Zoe RS, 245 miles)

Light-duty Trucks
(2022 Ford F-150 Lightning, 230-300 miles)
CLEAN CARS NEVADA – ZEV PROGRAM
PROGRAM CREDITS

Requirements – ZEV credits as percentage of total vehicles delivered for sale in the state for each manufacturer

<table>
<thead>
<tr>
<th>Model Year</th>
<th>Credit Percentage Requirement</th>
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</thead>
<tbody>
<tr>
<td>2018</td>
<td>4.5%</td>
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<tr>
<td>2019</td>
<td>7.0%</td>
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<tr>
<td>2020</td>
<td>9.5%</td>
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<tr>
<td>2021</td>
<td>12.0%</td>
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<tr>
<td>2022</td>
<td>14.5%</td>
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<tr>
<td>2023</td>
<td>17.0%</td>
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<tr>
<td>2024</td>
<td>19.5%</td>
</tr>
<tr>
<td>2025 and subsequent</td>
<td>22.0%</td>
</tr>
</tbody>
</table>

Credits are not sales and depends mainly on the type of vehicle (e.g., BEV vs. PHEV) and electric mileage:

- Tesla Model 3 ≈ 4 Credits
- FIAT 500e ≈ 1.5 Credits
- Ford Fusion Energi ≈ 1.1 Credits
Manufacturer Definitions (based on sales volume in California):

- Small Volume (e.g., Mitsubishi, or Tesla until recently)
- Intermediate Volume (e.g., Subaru, Mazda)
- Large Volume (e.g., General Motors, Ford)

The size of the car manufacturer (large, intermediate, or small) determines how the manufacturer must comply with the program’s credit requirements.
CLEAN CARS NEVADA – ZEV PROGRAM
PROGRAM CREDITS (CONTINUED)

Credit Requirement is met for the MY

Excess

Bank for the future (no expiration date)

Transfer through the state market

Credit Requirement is not met for the MY

Deficit

Acquire through the state market

Non-compliance
Early Action Credits and Initial Credits are tools to help vehicle manufacturers with the steep credit requirements of the initial years of a ZEV program. Early Action Credits are to incentivize the earlier delivery of ZEVs in Nevada. *Early Action and Initial Credits are not part of the California regulation — some flexibility is allowed*

**Early Action Credits** – Manufacturers can bank credits earned for the sale of ZEV compliant vehicles in Nevada in the years before the beginning of the program.

**Initial Credits** – Manufacturers’ initial credit balances start with an amount that is:

a) Related to the banked credits accrued with the California ZEV program; and

b) Modified by a proportionality factor that accounts for the difference in sale volumes between California and Nevada
This approach balances out the need for reducing the impacts of steep increases in compliance requirements (2025 and possibly 2026) with the need for actual gains in sale of ZEVs and emission reductions.
CLEAN CARS NEVADA – ZEV PROGRAM
ENFORCEMENT

Coordination

Penalties

Manufacturers
• Air Quality and Economic Impacts
• Stakeholder Engagement and Public Outreach
State of the Nevada Vehicle Fleet

Fleet Statistics:

• 2,000,000 – Light-Duty Vehicles Registered in Nevada
• 60% registered in Clark, 17% registered in Washoe, and the remainder are registered throughout the rest of the state
• 119,356 – Average Annual New Light-Duty Vehicles Sales from 2015-2020
• Passenger Cars make up 35%, Light-Duty Trucks 65% of New Registrations for Light-Duty Vehicles
• 3% – Fraction of New Light-Duty Vehicles Sales in Nevada in MY 2021 that are ZEV or TZEVs
State of the Nevada Vehicle Fleet Sales by County

Location of New Light-Duty Vehicle Sales in Nevada, 2015-2020:

- Clark County: 77%
- Washoe County: 14%
- Rest of Nevada: 9%
Total LDV Sales and Percentage of BEV and PHEV

Sales (Calendar Year)

<table>
<thead>
<tr>
<th>Year</th>
<th>% ICE</th>
<th>% BEV</th>
<th>% PHEV</th>
<th>Vehicles Sold</th>
</tr>
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<tbody>
<tr>
<td>2015</td>
<td></td>
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State of the Nevada Vehicle Fleet

New LDV Sales
**Projected Air Quality Benefits**

**LEV Program**

- LEV presents air quality benefits
- LEV provides an incremental decrease in fleetwide internal combustion engine (ICE) vehicle emissions
- LEV maintains regulatory consistency for auto manufacturers that are complying with Section 177 state rules
- Emissions benefits:
  - GHG reductions from the fleetwide emission standard
  - NO$_x$ and PM$_{2.5}$ benefits mainly from decreased fuel combustion
Approach Taken:
- NV ZEV Calculator – spreadsheet based on ZEV program rules and populated with projected state sales data by manufacturer
- Utilized to predict emissions benefits and credit compliance

Anticipated Compliance:
- Nevada adopts ZEV Program starting with MY 2025
- ZEV Program’s requirements are the same through to MY 2035
- In addition to minimum compliance, sales of ZEV and TZEV follow trends and recent manufacturer announcements of fleet electrification
PROJECTED AIR QUALITY BENEFITS
ZEV PROGRAM (CONTINUED)

ZEV and TZEV Sale Rates

- BAU
- Minimum Compliance
- Anticipated Compliance

Model Year

2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035

ZEV+TZEV Sales

0% 5% 10% 15% 20% 25%
PROJECTED AIR QUALITY BENEFITS

ZEV PROGRAM (CONTINUED)

CO₂ – Annual Emission Avoidance

- Minimum Compliance
- Anticipated Compliance

Net CO₂ - MTons/year

Model Year

2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035
PROJECTED AIR QUALITY BENEFITS

ZEV PROGRAM (CONTINUED)

NMOG+NO\textsubscript{x} – Annual Avoided Emissions

- Minimum Compliance
- Anticipated Compliance
Review Benefits of Clean Cars Nevada vs. Business as Usual:

1) Significant GHG reductions (helps achieve state climate goals)
2) Significant criteria pollutant reductions (benefits non-attainment areas and public health)
3) Helping to foster the widespread availability of new BEVs and PHEVs in the NV market (helps improve consumer choice)
ECONOMIC IMPACTS OF OWNERSHIP

Economic Impacts of Ownership – Sources of Information

• Environmental Advocacy Groups
• Automobile Enthusiast Magazines and Organizations
• Consumer Advocacy Groups
• Government and Academic Research Organizations

Economic Impacts of Ownership – Topics of Focus

• Initial Purchase Cost
• Depreciation
• Fueling Costs
• Maintenance and Repair Costs
ECONOMIC IMPACTS OF OWNERSHIP (CONTINUED)

Nevada’s levelized cost of charging is relatively inexpensive at $0.11/kWh

State-Level Variability in Levelized Costs for BEVs
Nevada’s lifetime fuel cost savings for ZEVs are considerable, because relatively high petroleum fueling costs would be replaced by the relatively low levelized cost of electric charging.
Key Findings

- BEVs and PHEVs are projected to reach initial purchase price parity with ICE vehicles within the next 5-7 years.
- BEVs and PHEVs depreciate at similar rates as ICE vehicles.
- Maintenance and repair costs for BEVs and PHEVs are lower compared to ICE vehicles.
- Given Nevada’s higher average gasoline prices, fuel cost savings for BEVs and PHEVs are significant compared to ICE vehicles.
Summary of Small Business Impacts

• Dealer uncertainty over consumer acceptance of ZEVs, and how to market and sell ZEVs
• Decline in revenue for maintenance of ZEVs
• Capital costs for charging infrastructure, new diagnostic equipment and updated training
• Decline in fossil fuel sales and associated businesses

The proposed regulation would not impose a direct and significant economic burden upon small businesses, and would not directly restrict the formation, operation or expansion of a small business
8-Month Webinar Series

• Clean Cars Nevada Program Overview – Dec. 8, 2020
• Listening Session – Jan. 14, 2021
• Technical Session on LEV Program – February 23, 2021
• Technical Session on ZEV Program – March 30, 2021
• Air Quality Impacts, Sales Trends and ZEV Crediting – April 27, 2021
• Air Quality Impacts, Emissions Benefits – May 27, 2021
• Economic Impacts of Ownership and Small Business Impacts – June 15, 2021
• Stakeholder Presentations – June 17, 2021
• CHISPA Nevada Presentation – July 26, 2021
Presentation Webinar for CHISPA Nevada – July 26, 2021

• In association with the League of Conservation Voters, CHISPA Nevada seeks to engage Latino communities with local environmental concerns, including clean air and a clean energy future in the fight against climate change.

• Included Spanish language slides, simultaneous Spanish translation of oral presentation, and Q & A session.
Concerns - Dealerships

- Affordability of new vehicles
- Costs to dealerships for marketing and advertising costs

Concerns – Automotive Industry

- Regulation should be well written and not represent a "third car" requirement
- Early action credits should be allowed starting in 2022
- Initial credits may be needed to meet potential higher credit requirement in 2026 and beyond
Concerns – Petroleum Industry

- Climate action measures should not focus on a single industry, but should rather be broad market-based mechanisms to achieve GHG reductions.

- Lifecycle environmental concerns for lithium-ion batteries and associated emissions to produce and recycle; availability of key minerals for batteries.

- Petroleum marketer concerns over convenience store business model that may change due to electric vehicle charging habits.
Clean Cars Nevada Outreach – Advocacy Group and Public Concerns

Concerns of Environmental Non-Governmental Organizations

• Desire to adopt a program that results in actual emission reductions

• Use of Initial Credits was strongly discouraged because of a concern that their use would diminish the environmental benefits of the program in Nevada

Concerns of Environmental Justice Advocacy Groups

• Environmental benefits of the program must be realized in low income and minority communities that bear a disproportionate burden of exposure to environmental pollutants and impacts from climate change

• Desire for the State to find ways to assist low income and minority communities in gaining access to new electric vehicles and charging infrastructure
Concern Over Initial Credits

• Use of Initial Credits was strongly discouraged by the NGOs because of a concern that their use would diminish the environmental benefits of the program.

• EV manufacturers also opposed Initial Credits because they reduce actual compliance requirements.

• Auto manufacturers (of ICE vehicles) strongly favored use of Initial Credits to ease the introduction of the sizable jump to a 22% ZEV credit requirement during the initial year of the program.
Summary of Comments from the Public Workshop held on July 28, 2021

• No questions or concerns were raised on the text of the regulation itself
• No opposition to Clean Cars Nevada was voiced
• Stakeholders expressed support for the program
• Importantly, the auto manufacturers, auto dealers, and environmental advocacy community are all in agreement that the program as presented here is workable and will result in meaningful environmental benefits