A Proposed Zero Emission Vehicle (ZEV) Rule for Colorado

Phil von Hake
Mobile Sources Program
July 24, 2019
Colorado’s Air Quality is Getting Better ... and Worse

Denver Metro Area & North Front Range Ozone Levels (where we are)

EPA Ozone Levels allowed for Attainment (where we need to be)
Colorado’s Air Quality is Getting Better ... and Worse

<table>
<thead>
<tr>
<th>Better</th>
<th>Worse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology</td>
<td>Population Growth</td>
</tr>
<tr>
<td>Electric Grid</td>
<td>Climate Change</td>
</tr>
<tr>
<td>O&amp;G Methane Rules</td>
<td>Increased O&amp;G Activity</td>
</tr>
<tr>
<td>Awareness</td>
<td>“Moderate” &gt; “Serious”</td>
</tr>
<tr>
<td></td>
<td>Non-Attainment for Ozone</td>
</tr>
</tbody>
</table>
## PROJECTIONS

### Exhibit 2-30: Total Emissions from Mobile Sources (MMTCO$_2$e)

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Gasoline Highway</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passenger Cars</td>
<td>0.561</td>
<td>0.661</td>
<td>0.638</td>
<td>0.476</td>
<td>0.302</td>
<td>0.170</td>
<td>0.161</td>
<td>0.166</td>
</tr>
<tr>
<td>Light-Duty Trucks</td>
<td>0.309</td>
<td>0.535</td>
<td>0.559</td>
<td>0.361</td>
<td>0.104</td>
<td>0.060</td>
<td>0.113</td>
<td>0.078</td>
</tr>
<tr>
<td>Heavy-Duty Vehicles</td>
<td>0.019</td>
<td>0.026</td>
<td>0.030</td>
<td>0.026</td>
<td>0.007</td>
<td>0.004</td>
<td>0.007</td>
<td>0.007</td>
</tr>
<tr>
<td>Motorcycles</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.002</td>
<td>0.002</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Subtotal</td>
<td>0.890</td>
<td>1.224</td>
<td>1.228</td>
<td>0.863</td>
<td>0.415</td>
<td>0.236</td>
<td>0.281</td>
<td>0.251</td>
</tr>
</tbody>
</table>
Smoking Vehicle Hotline:
303.692.3211
cdphe.smokeline@state.co.us

And now ...
Low Emission Vehicle Standards

On June 19, 2018, Governor Hickenlooper signed Executive Order B 2018 006, Maintaining Progress on Clean Vehicles. The executive order explains that the federal government has announced its intention to roll back vehicle greenhouse gas (GHG) standards for model years 2022-2025. Rolling back these standards would negatively impact Colorado’s ability to meet its GHG reduction goals.

The executive order directs the Colorado Department of Public Health and Environment (CDPHE) to do the following:

- develop a rule to establish a Colorado Low Emission Vehicle (LEV) program, which incorporates the requirements of the California LEV program; and

Zero Emission Vehicle Mandate Proposal

Update (May 10, 2019):

The Colorado Air Quality Control Commission (AQCC) voted 9-0 to hold a hearing on whether to adopt a proposed Zero Emission Vehicle (ZEV) Rule. Additional information on this process is available through the AQCC website.

The Alliance of Auto Manufacturers (AAM) is also negotiating with the State of Colorado about a tentative agreement to bring more electric vehicles to Colorado sooner. The State of Colorado will explore this proposal in parallel with this ZEV rulemaking process, which will continue to proceed on an independent path. Additional information will be
1960s: California Air Resources Board (CARB)

1970: U.S. Clean Air Act takes effect; Section 177 provides waiver for California & other “177 states” to use stricter standards

< 2017: Federal & California standards set to merge (MY2025)

> 2017: “Safe Affordable Efficient Vehicles (SAFE) Act” would freeze federal standards at MY2020 levels;
   -> EPA also seeks to revoke California’s waiver (TBD)

“No Third Car”: States must choose Federal or California/177 standards
< 2018: CDPHE suggested LEV/ZEV at least twice before ...


Aug. - Nov. 2018: Parties to LEV Rulemaking Hearing

FOR
Local Governments
Environmental Coalition
“Most” Private Citizens

AGAINST
Automakers
Auto Dealers
Fuel Providers

“I don’t like this rule, but I like what EPA did even less.”

Jan. - July 2019: Auto Dealers challenged rule, but case dismissed.

California Alternative Vehicle Standard Adoption in the US


- States with LEV Standard
- States with ZEV Standard
- States with Federal Standard
Colorado to miss out on Subaru EVs for lack of a law

By: By JOEY BUNCH Colorado Politics  May 16, 2018

Subaru is planning to release its first plug-in hybrid powertrain on its Crosstrek models. Photo courtesy Subaru.
From LEV to ZEV

Aug. 2018: Unprecedented public input supporting LEV and ZEV


May 2019: Automakers negotiating with CDOT & CEO to bring all available ZEVs to Colorado as soon as 2020 ...

Aug. 2019: AQCC will decide on ZEV rule; IF adopted (MY2023), automakers must sell an increasing % of light-duty ZEVs
ZEV Rule is about *credits*, not cars

- Credits are based on vehicles’ zero-emission ranges:
  - Long-Range BEVs (Tesla, Chevy Bolt, etc.) => 3-4 credits
  - Plug-in Hybrids (Chevy Volt, Prius Prime, etc.) => 0.5 credits

- Credits translate (roughly) into automakers selling ≥5% ZEVs in 2023, going up to ≥9% in 2030 & beyond

- Not meeting credit minimums
  => another year to comply and/or paying fines

- Automakers seeking early-credit allowances for Colorado ...
Opposition to Colorado ZEV Rule

- “Most ZEVs are compact, sedans, etc. ... while most of what Coloradans buy are pickups, SUVs, etc.” (true in 2019, but less likely in 2023)
- Range Anxiety (but battery ranges & EVSE are both increasing)
- Colorado’s unique weather & terrain (but EV sales are strong in more mountainous areas)
- All other (current) ZEV states are coastal (NM also planning to be a ZEV state)
• These rules do NOT take any vehicles off the road
• These rules do NOT force anybody to buy a ZEV
• ZEV rule *increases* customer choice (e.g., Subaru EV > CO)
• These rules apply primarily to *automakers*
• State-wide rule, but met through urban/suburban ZEV sales
• “Think 2023, not 2019”
Estimated Pollution Reductions
(MY 2022 - 2031)

LEV Rule 30,000,000 tons of CO2e

ZEV Rule 3,200,000 tons of CO2e
"Green really is Green!"

<table>
<thead>
<tr>
<th>Rule</th>
<th>Costs *</th>
<th>Benefits</th>
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</thead>
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<tr>
<td>LEV</td>
<td>$1,000 more per vehicle</td>
<td>Less fuel &amp; maintenance means net savings of $3,000 over average vehicle life</td>
</tr>
<tr>
<td>ZEV</td>
<td>$6,000 more per vehicle (2023) and Cost Parity w/ICEVs (c. 2028)</td>
<td>Much less fuel &amp; maintenance means net savings of $4,000 (2023) to $11,000 (2030) over vehicle life</td>
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* Cost estimates do NOT include any tax credits or other subsidies
ZEV Rulemaking Timeline:

July 17: Pre-Hearing

July 24: Pre-Hearing Rebuttals Due

Aug. 2: Cost-Benefit Analysis Due

Aug. 8: Regulatory Analysis Due

Aug. 13-16: Rulemaking Hearing
ZEV Rulemaking Timeline:

c. Oct. 2019: *If* AQCC adopts Colorado ZEV Rule, Colorado Secretary of State has up to 50 days to review it before officially adding it to Colorado Revised Statutes. Rule must be on books for 2 years before going into effect (per Clean Air Act, Section 177).

Jan. 2, 2022: Colorado ZEV Rule takes effect. Automakers must make MY 2023 ZEVs available for sale as an increasing % of their total light duty vehicles.
Cleaner Cars ... and FEWER Cars!

The Absurd Primacy of the Automobile in American Life

Considering the constant fatalities, rampant pollution, and exorbitant costs of ownership, there is no better word to characterize the car’s dominance than insane.

EDWARD HUMES  APR 12, 2016
# Find Smarter Ways to Go!

<table>
<thead>
<tr>
<th>Mode</th>
<th>Clean Air</th>
<th>Traffic</th>
<th>Multi-Task</th>
<th>Exercise</th>
<th>Parking</th>
<th>$</th>
<th>Misc.</th>
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<tbody>
<tr>
<td>SOV</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>$$$</td>
<td>“Convenient”</td>
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<tr>
<td>EV</td>
<td>✓</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>$$</td>
<td>Cleaner, Connected, etc.</td>
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<tr>
<td>Cab / Uber/Lyft</td>
<td>?</td>
<td>X</td>
<td>✓</td>
<td>?</td>
<td>✓</td>
<td>$$</td>
<td>ZOVs ... ?!</td>
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<td>Car/Van-Pool</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>?</td>
<td>✓</td>
<td>$$</td>
<td>Community</td>
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<tr>
<td>Scooter</td>
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<td>✓</td>
<td>X</td>
<td>?</td>
<td>✓</td>
<td>$$</td>
<td>Single &amp; Sober ... !</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>?</td>
<td>✓</td>
<td>?</td>
<td>Google / VPN</td>
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<td>Transit</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>$</td>
<td>EcoPass?!</td>
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<tr>
<td>Bike/Walk</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>$</td>
<td>Commute + Workout!</td>
</tr>
</tbody>
</table>
Find Smarter Ways to Go!
SAVE COLORADO'S BIG BLUE SKIES

Take the #JustSkip2 Challenge

SIMPLE STEPS  GET SMART  JOIN US!
Thank You!

Phil von Hake

phil.vonhake@state.co.us

Colorado.gov/cdphe/motorvehicles

Search on LEV and/or ZEV