

**Testimony of Eric Fruits, Ph.D.**  
**Cascade Policy Institute**

Before the  
**Oregon House Committee on Climate, Energy, and Environment**  
February 8, 2023

**Support for HB 3002 re: Rules or standards related to motor vehicle fuels or emissions**

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In December 2022, the Oregon Environmental Quality Commission (EQC) adopted the “Advanced Clean Cars II Rule,” banning the sale of internal combustion cars by 2035. It’s not a stretch to say these rules will place a burden on every single Oregon household and Oregon business.

Many Oregonians outraged by the ban have asked, “How can the EQC do that?”

*How* the EQC imposed the ban is even more outrageous than the ban itself.

Under the federal Clean Air Act, states have two options for controlling emissions from new vehicles: rely on federal emission standards or adopt emission standards developed by California. Federal law requires states that adopt California emission standards to do so identically.<sup>1</sup>

In 2006, the EQC approved permanent rules to adopt California’s Low Emission Vehicle (LEV) Standards. Under this policy, whatever California does with LEV standards, Oregon must do so also.

Last summer, the California Air Resources Board (CARB) approved its “Advanced Clean Cars II” regulations banning the sale of internal combustion vehicles by 2035. In December, the Oregon EQC followed suit with its near-copycat rules.

Neither the EQC nor California’s regulators are elected. In Oregon, the EQC is appointed by—and serves at the pleasure of—the governor. The CARB consists of 16 members: 12 appointed by the California Governor and 4 appointed by the California legislature (2 of whom must represent environmental justice communities).

Years ago, the Oregon legislature outsourced key policymaking to unelected state bureaucrats (e.g., the EQC) who, in turn, have outsourced their policymaking to unelected California bureaucrats (e.g., the CARB).

As legislators, you should be outraged at this. You have been shut out of a wide range of decisions that will affect all of your constituents. You are the legislative body of this state, and you should play a critical—if not *the* critical role—in setting state policy.

As voters, we should be outraged at this. Our votes mean nothing, and our testimony means nothing. For example, for the December 2022 EQC meeting to adopt the “Advanced Clean Cars II Rule,” the Department of Environmental Quality (DEQ) referred to a packet of info in which DEQ responded to more than 500 comments (attached). DEQ’s responses would be comical if they weren’t so dismissive: Every single criticism of the proposal was dismissed by DEQ because federal law says that if a state wants to adopt California LEV standards—instead of EPA standards—they must be adopted without any changes.

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<sup>1</sup> States have flexibility to customize *implementation* of the standards.

It's easy to see why the EQC hearing was a sham. No public testimony could ever be used in a substantive way, which is the exact opposite of what "notice and comment" rulemaking is designed for. Everyone who devoted time, energy, and resources to providing thoughtful and helpful comments was wasting their time because EQC committed itself to an all-or-nothing adoption of California's rules.

But there's hope. HB 3022 requires that the legislature must approve any rules related to motor vehicle fuels or emissions. You deserve that role, and your constituents expect you to accept that role rather than some unknown bureaucrats appointed by a governor in another state. It's time to bring policymaking back to the Oregon legislature, and HB 3022 is a good first step.

Respectfully submitted by:

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State of Oregon Department of Environmental Quality

# Oregon Environmental Quality Commission Special Meeting

Dec. 19, 2022

## Rulemaking, Action Item A Advanced Clean Cars II Regulation

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## **Suggested Change #1: Rule adoption - support proposed rules**

**Description:** Please pass the ACCII rules this year!

**Response:** DEQ agrees and thanks you for your comment. Adopting the ACC II rules would significantly reduce tailpipe criteria pollutant and greenhouse gas emissions and is a foundational strategy to decarbonize Oregon's transportation sector. The overwhelming scientific consensus is that global warming is primarily caused by human activity, and that major reductions in GHG emissions are urgently needed across all sectors in order to avert the worst effects of climate change. Adopting these rules now ensures the benefits achieved from the zero emission vehicle technology are enacted as soon as possible, particularly communities of color and low-income communities who are often disproportionately impacted by transportation pollution due to their proximity to roadways.

**Response Type:** No agency response required

**Comment IDs linked to this Suggested Change:** 463, 312, 313, 314, 728, 22, 27, 28, 729, 95, 730, 125, 127, 133, 315, 316, 317, 318, 658, 319, 320, 321, 731, 580, 732, 733, 734, 492, 151, 322, 13, 323, 324, 24, 325, 326, 327, 328, 15, 330, 331, 26, 57, 62, 67, 52, 332, 56, 61, 66, 71, 73, 51, 59, 64,

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## **Suggested Change #2: Oppose proposed rules**

**Description:** We should not follow California lead on vehicles emissions standards and we should not put additional regulations on gas and diesel vehicles. This will economical hurt residents and small businesses in Oregon. This proposed new regulation will be a disaster for the vast majority of people. This rule is unrealistic. Do not support a mandatory requirement for e-vehicles in Oregon.

**Response:** Thank you for your comment. DEQ disagrees and believes adopting the ACC II rules would significantly reduce tailpipe criteria pollutant and greenhouse gas emissions and is a foundational strategy to decarbonize Oregon's transportation sector. The overwhelming scientific consensus is that global warming is primarily caused by human activity, and that major reductions in GHG emissions are urgently needed across all sectors in order to avert the worst effects of climate change. In Oregon, the transportation sector accounts for almost 40% of GHG emissions.

Emissions from motor vehicles harm human health, the environment, and the climate via emissions of pollutants such as fine particulate matter, air toxics, sulfur oxides and nitrogen oxides, a precursor to the formation of ground level ozone. Reducing these emissions will provide a benefit to low-income communities and communities of color, who are often disproportionately impacted by transportation pollution due to their proximity to roadways. Communities across Oregon, including the Portland-metropolitan area and the Rogue Valley have experienced increasing levels of ozone in recent years. Increasing levels of ozone – or smog – leads to a wide variety of health effects including cardiovascular and respiratory illnesses. The proposed ACC II rules will reduce ozone, PM2.5, and greenhouse gas emissions.

DEQ looked at the anticipated health benefits using EPA's CO-Benefits Risk Assessment (COBRA), and the result of on-road mobile source emission reductions. Overall, the net benefit of the emission changes is between \$5.35 - \$12.96 million dollars. As a result of these reductions, Oregon can expect to see reduced mortality with up to 150 fewer premature deaths, 34 fewer hospital and emergency room visits and 8,760 fewer lost work days.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 667, 470, 104, 488, 489, 143, 491, 494, 496, 498, 7, 505, 507, 152, 122, 509, 618, 510, 101, 100, 108, 103, 106, 511, 102, 105, 115, 117, 121, 118, 128, 119, 124, 140, 157, 656, 130, 136, 141, 132, 134, 144, 149, 512, 158, 514, 156, 171, 193, 180, 201, 19

### **Suggested Change #3: Do not ban gasoline vehicles**

**Description:** Please do not approve this ban on the sale of gas-powered vehicles and am vehemently opposed to the decision to ban gas powered vehicles in Oregon. It is obvious the proposed ban comes from a place of concern for the environment, and this is commendable. However, the ban in practice is ludicrous. We are against the ban on the sale of gas and diesel vehicles. Let EV's evolve to whatever they become but allow gasoline/diesel vehicles to be sold in Oregon.

**Response:** Thank you for your comment. The proposed rule requires that manufacturers sell only new electric vehicles beginning with the 2035 model year. Used gasoline vehicles can continue to be sold in Oregon and any vehicle, whether gasoline or electric can be registered and driven in the state.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 3, 5, 6, 108, 475, 478, 570, 587, 599, 643, 645, 648, 669, 690, 727

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## **Suggested Change #4: Electricity to fuel the electric vehicles comes from fossil fuels, will create more emissions overall**

**Description:** The electricity that fuels EVs is produced by fossil fuels and will be for decades. Shifting from internal combustion engines to electric motors will simply move vehicle-related emissions from cities to the countryside. Much of the electricity which will charge those batteries will be coming from coal-fired generating stations. Burning coal to produce electricity negates the benefits of driving cars that do not use internal combustion engines. Fossil fuel use for electricity generation has steadily increased in Oregon over the past eight years. Adoption of the standards will lead to more natural gas in the grid and will undermine the goals of the rule.

**Response:** Thank you for your comment. Utilities are moving towards cleaner sources of power to generate electricity, including a greater dependence on wind, solar, and hydroelectric. House Bill 2021 (2021), requires the two investor owned utilities, the largest in the state to have zero emissions by 2040 and prohibits any utility expansion or new construction of power plants within Oregon to use natural gas or other fossil fuels. Additionally, DEQ's Climate Protection Program requires a reduction in greenhouse gas emissions from fossil fuels from the commercial and industrial sector by 50 percent by 2035 and 90 percent by 2050.

**Response Type:** no agency response required

**Comment IDs linked to this Suggested Change:** 587, 9, 149, 158, 162, 180, 194, 3, 159, 643, 676, 708, 211, 637, 673, 715

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## **Suggested Change #5: Batteries - Harmful environmental impacts to source and dispose of battery materials**

**Description:** Batteries are extremely large and heavy, expensive to replace, use a lot of resources, are dirty to mine and dispose of. Batteries require the excavation of hundreds of tons of materials which primarily are mined from pristine, remote, and rural areas. The sourcing of these materials has been provided partly by slave labor (Amnesty International). Batteries require replacing during the life span of the vehicles requiring additional environmental impact (as above). EV batteries are not recyclable and end up in landfills, often located in other poorer nations where their toxic contents leach in the soil and aquifers endangering the health of poor, indigenous, people of color. By the time all the highly toxic minerals are mined, shipped, and assembled into batteries, the carbon footprint of one vehicle is massive. The materials for these batteries are mined in countries with no labor laws, and the land is destroyed in the process. It ignores the increase in environmental harm extracting the needed rare earth minerals needed. Since extracting these minerals will be prohibited in the USA, it means these environmental costs will be borne by third world countries and China.

**Response:** Thank you for your comment. DEQ recognizes that the rules may increase demand for various metals including lithium to produce zero emission vehicles. However, it is up to the vehicle manufacturers to decide how they create and produce their vehicles and many are already looking at sourcing other materials, including those that are domestically sourced. The federal government recently enacted the Inflation Reduction Act, which provides significant support for ZEVs that include credits for production of critical minerals used in ZEV batteries that must be extracted or processed in the U.S. Additionally, the recycling of lithium-ion batteries is increasing. The rule requires ZEV batteries have a label to enable second use and recycling processes to conserve metals used in the manufacturing process of ZEV batteries. Mining of virgin materials for battery production currently requires the use of fossil fuels. Overall, the use of batteries and electric vehicles reduces emissions of criteria pollutants and GHGs when compared to conventional gasoline extraction and combustion. Recycling of batteries further reduces overall production emissions.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 143, 9, 128, 132, 134, 144, 2, 178, 204, 174, 197, 200, 4, 8, 99, 599, 120, 179, 220, 439, 702, 715, 724, 727

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## **Suggested Change #6: ZEV technology- insufficient and not developed**

**Description:** Existing ZEV technology not developed enough

**Response:** DEQ thanks you for your comment. During the development of the rules, California reviewed automaker-reported projections of ZEV production capabilities, as well as public statements by industry on battery manufacturing commitments and actions, and consumer preferences and market challenges. Both California and vehicle manufacturers indicated that while the proposed rules would be challenging, overall they are achievable. In fact, every manufacturer has made a public commitment to significant if not full electrification in the next 20 years. Based on public announcements, it is expected that nearly 120 ZEV and PHEV models will be available to consumers before the 2026 model year.

The proposed rules also include minimum technological requirements that manufacturers must meet. This includes a minimum electric range, propulsion parts and battery warranty, and is designed to ensure that vehicles, including their emission controls, perform properly throughout their life.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 5

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## **Suggested Change #7: Reduces GHG emissions, air pollution and helps achieve climate goals**

**Description:** States across the country are adopting clean car standards, so a strong regulation in Oregon is essential to fighting the climate crisis and protecting our communities. These rules are critical to reduce air pollution and to meet our state's transportation climate emission reduction goals. The Oregon Global Warming Commission recently identified the ACCII as a necessary rule to meet Oregon's greenhouse gas emissions goals.

**Response:** DEQ agrees and thanks you for your comment. Adopting the ACC II rules would significantly reduce tailpipe criteria pollutant and greenhouse gas emissions and is a foundational strategy to decarbonize Oregon's transportation sector.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 463, 728, 22, 27, 28, 729, 95, 730, 658, 731, 580, 734, 492, 13, 24, 15, 26, 67, 52, 56, 61, 51, 59, 80, 75, 81, 68, 76, 63, 74, 83, 92, 96, 89, 98, 646, 97, 654, 163, 165, 677, 172, 183, 679, 680, 173, 186, 190, 195, 230, 116, 213, 577, 18, 31, 44, 45, 5

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## **Suggested Change #8: Environmental justice - Include funding to support clean mobility programs and equitable access to EVs**

**Description:** The ACCII rules have the opportunity to ensure that car manufacturers improve access to zero emission vehicles in underserved and frontline communities through Community-Based Clean Mobility Programs which would provide access to electric car- and vanpools, e-bikes and e-scooters. It is crucial that this program be robust and fully funded to ensure an equitable transition to an all electric future.

**Response:** DEQ thanks you for your comment. DEQ agrees a successful Community-Based Clean Mobility program requires funding to ensure an equitable transition to ZEVs. DEQ is exploring options for how it can work with community programs and the funding required to provide this compliance pathway for manufacturers.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 711, 22, 27, 28, 95, 24, 15, 26, 67, 52, 56, 61, 51, 59, 80, 75, 81, 68, 76, 63, 74, 83, 92, 96, 89, 98, 97, 163, 165, 172, 183, 680, 173, 184, 186, 190, 195, 18, 31, 44, 45, 53, 539, 544, 554, 555, 65, 453, 474, 486, 536, 541, 547, 552, 537, 527, 532, 50

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## **Suggested Change #9: Electrical grid - Grid capacity and resiliency is inadequate**

**Description:** Concern the electrical grid cannot handle the influx of charging for EVs. Our electrical infrastructure can not absorb a majority shift to electric vehicles with the shutting down of our coal power plant and removal hydroelectric dams. Windmills and solar panels are not a serious solution they are extremely costly to the tax payers and have low power density for the resources they consume. What happens if Oregon starts having rolling brown outs like California, how then will people keep vehicles charged for getting to work. No plans have been made to modernize our aging electric grid to accommodate all of the EV's. What happens if Oregon starts having rolling brown outs like California, how then will people keep vehicles charged for getting to work. Adopting these rules will only create widespread hardship and unsustainable stresses on our electric power infrastructure, create new waste streams of extremely toxic waste, while no proven benefit can be demonstrably shown.

**Response:** Thank you for your comment. Oregon's electric grid has expanded and continues to evolve as electric vehicle demand continues to grow. Oregon is investing now on ensuring the grid will be able to handle the large influx of electric vehicles over the next few years. A resilient and reliable electric grid is critical to ensure all of Oregon's transportation sector is functioning, whether it is to charge electric vehicles, operate gas station pumps, or move fuel across pipelines. State agencies and electric utilities have begun proactively planning for electrical distribution upgrades and new load for electric vehicles via statewide energy plans.

However, the daily needs of most vehicles are well below 100 miles per day such that a given battery-electric vehicle (BEV) could operate more than one day without charging. It is also likely that a ZEV may have sufficient charging capacity to access a public charging station where the station has stationary storage, batteries, onsite generation, or supply from a microgrid.

The automotive industry is advancing technology and design features of ZEVs to facilitate the use of stored electricity in car batteries to power homes during unplanned power outages, creating a benefit to a household beyond that with a conventional vehicle. Bidirectional charging, which is a feature currently available in Ford's F-150 Lightning and Nissan's Leaf, for example, are capable of sensing when a power outage occurs and automatically feeding power back to a home through the vehicle's charging port.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 470, 6, 488, 489, 143, 491, 494, 496, 498, 505, 507, 122, 509, 618, 510, 100, 103, 106, 511, 102, 128, 650, 124, 130, 132, 144, 512, 514, 2, 189, 201, 204, 174, 515, 516, 200, 212, 517, 518, 574, 575, 14, 159, 576, 477, 562, 450, 215, 564, 565, 566, 503,

## **Suggested Change #10: Cost - EVs are more expensive. Regulation will make cars more expensive. Makes it difficult for low income residents to purchase**

**Description:** This will increase the price of EV's and last year the average price was \$66,000. It is highly discriminatory in that moderate to low income individuals cannot afford to purchase new vehicles. By adopting these standards the only people who benefit from this ruling is the manufacturers of the batteries and components-CHINA. It will raise the cost of new vehicles in addition to this on going inflation. It will force struggling small businesses to costly upgrades to their fleets vehicles. This is bad for the average hard working Oregonian. These regulations that are made to force people into electric vehicles will be devastating to the poorest people among us. They will not be able to afford reliable transportation and public transportation is a joke for rural Oregonian. Electric cars will be prohibitively expensive, as competition for the limited supply of rare earth minerals will increase, a market controlled by China, who will no doubt give priority to its electric car manufacturing. Electric vehicles are more expensive and a ban on new gas vehicles will likely skyrocket the price of used gas vehicles hurting the poor even more. Not only is the cost astronomical for average families, but one needs look no further than California or Europe to show that moving off of fossil fuels on a large scale with no real ability to do so causes energy grid problems.

**Response:** Thank you for your comment. DEQ referred to California's total cost of ownership analysis that shows a 2026 model year BEV owners will cumulatively save money over a ten-year period. The results show that BEV owners will save \$3,216 over ten years (a 2026 model year BEV with higher electricity prices assuming no access to a home charger) and will realize savings within the first year of ownership. This TCO analysis accounts for a number of cost factors, including vehicle price, loan fees, sales taxes and registration fees, fuel costs, maintenance costs, and a home charger capital investment for some buyers. The assessment includes the costs for drivers without home chargers who rely on more expensive public charging or charging at DC fast chargers. Overall, BEVs are assumed to have 40% lower maintenance costs than comparable conventional vehicles, a large contributing factor to the TCO cost savings results overall. The analysis assumed the vehicle buyer would have a five-year loan for the purchase of the vehicle, enabling the purchase costs to be spread out over that multi-year time period. Additionally, ZEV costs should reduce over time and reach price parity by 2031-2034.

DEQ also has a robust rebate program providing rebates for low and moderate income households. Under Oregon's Clean Vehicle Rebate Program, qualified income applicants can receive up to \$7500 off the purchase or lease price of a new electric vehicle, making EVs more accessible.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 470, 6, 488, 489, 732, 491, 496, 498, 505, 9, 507, 122, 509, 618, 510, 101, 100, 645, 103, 511, 102, 117, 118, 124, 656, 141, 132, 137, 512, 514, 162, 2, 180, 189, 201, 174, 185, 515, 194, 516, 212, 517, 518, 218, 574, 8, 575, 160, 576, 477, 562, 450, 564



## **Suggested Change #11: Infrastructure not ready or available to support transition to EVs, particularly those living in MUDs**

**Description:** EVs need regular charging. A charging network does not exist, especially in rural areas. The Oregon charging network barely exists, especially for apartment dwellers. Lack of overall power structure to support all EVs. We have to travel out of state frequently to help with our grandchildren. There are no charging stations on the way.

**Response:** Thank you for your comment. DEQ expects there will be sufficient infrastructure and grid capacity to satisfy additional needs from the proposed regulations. As of now, there are over 2,000 EV chargers across the state, with more being built in the next few years. Over \$100 million will be invested over the next five years to increase charging infrastructure, including \$65 million to add public infrastructure charging every 50 miles along alternative fuel corridors which are many of the major highways in Oregon (I-5, I-84, Highways 97, 101, 26, 20, 42, and 95, and \$4 million to conduct upgrades along the West Coast Electric Highway. ODOT is also committing \$8 million for its Community EV Charging Rebate Program to support the installation of Level 2 EV charging stations at multi-unit dwellings, stop and shop locations, and tourist destinations. Significant private investments are also expected. State and federal funding is typically offered as a matching grant, meaning that private investment will supplement the public investments and roughly double the total expenditures on infrastructure. Other private investments from EVSE providers or automakers include Tesla. Additionally, the recent federal Inflation Adjustment Act incentivizes further private investment in domestic clean energy manufacturing and supply chains.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 6, 114, 143, 587, 494, 9, 10, 122, 108, 645, 105, 124, 132, 144, 158, 171, 189, 174, 185, 200, 212, 218, 192, 188, 215, 648, 329, 708, 126, 123, 148, 179, 217, 211, 458, 501, 637, 649, 673, 701

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## **Suggested Change #12: Infrastructure cost - Will require home charging installation which is expensive**

**Description:** People have to buy chargers for their homes that are expensive and many can not afford; charging is not always convenient and then you have a dead battery like we did with power wheels.

**Response:** Thank you for your comment. The proposed rules require manufacturers to provide a combined Level 1 and Level 2 convenience cord that will eliminate the need for many vehicle purchasers to separately purchase a home charging unit and will greatly increase the number of purchasers that can make such a charger work without modification to their home's wiring to accommodate it. Home charging installation may not be necessary as result, thus mitigating any potential costs for these devices.

If, however, an EV owner chooses to install a home charger, the savings recouped from being a battery electric vehicle owner is realized within the first year. DEQ's total cost of ownership analysis that shows a 2026 model year BEV owners will cumulatively save money over a ten-year period. The results show that BEV owners will save \$3,216 over ten years (a 2026 model year BEV with higher electricity prices assuming no access to a home charger) and will realize savings within the first year of ownership. This TCO analysis accounts for a number of cost factors, including vehicle price, loan fees, sales taxes and registration fees, fuel costs, maintenance costs, and a home charger capital investment for some buyers.

For those who need to charge outside the home, there are over 2,000 public and private chargers across the state, and many more continue to be built across all parts of Oregon. The State and federal government are investing in zero-emission infrastructure, with a prioritization of investments in rural and disadvantaged communities. Public charging access will greatly increase over the next few years with over \$100 million being invested in Oregon to increase charging infrastructure and the \$30 billion from the federal Inflation Reduction Act to establish a nationwide network of charging and infrastructure support. There are also a number of private sector investments (GM, Tesla, Ford, Electrify America, Shell) are expected to invest heavily in expanding and building the charging network across the state.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 108, 132

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## **Suggested Change #13: Battery recycling- will manufacturers participate in recycling**

**Description:** Will there be incentives with this toward encouraging, if not requiring, vehicle manufacturers to, also, participate in battery recycling. The demand on lithium and other limited-resource materials will skyrocket with plans like this one. Have you also considered what will be done with all of the spent batteries in 20-30 years? The rule ignores the problem of disposal of batteries. Concerns about the lack of recycling of electrical car batteries and electric vehicles in general and especially due to high cost of replacement batteries.

**Response:** Thank you for your comment. To ensure that used batteries can be sustainably and properly managed at their end of life and critical battery materials are recovered efficiently, information on the battery system needs to be provided to end users and entities that receive, acquire, or hold batteries. The proposed rules include battery labeling requirements to support battery recycling and reuse. This helps reduce the need for additional mining to supply materials for ZEV batteries. Battery labeling helps with safe handling and disposal of materials including the potential for secondary uses. Labeling will also help reduce disposal costs by providing information about the physical characteristics of the batteries. Providing access to key battery information will facilitate safe and economic collection, transportation, and concentration of materials for recovery.

As electric vehicle batteries are retired once the vehicle is no longer useable, these older batteries can be used in number of different applications. Some batteries can be refurbished and reused directly as a replacement battery pack for

the same model vehicle. Other batteries can be used in a stationary application such as backup power for homes or cellular towers, or utility grids.

Efficient recovery of battery materials will also reduce demand on raw battery mineral mining activities. Recovery of valuable elements from recycling is contributing to the expected decline in costs.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 109, 114, 120, 123, 134, 147, 649

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## **Suggested Change #14: VMT - Should focus on reducing VMT**

**Description:** We are better off starting a 'drive less,' campaign instead. Maybe some energy saving propaganda would inspire our young people to cook their own tacos instead of driving to Taco Bell three times a day to buy it.

**Response:** Thank you for your comment. The proposed rules did not include measures to control VMT. The purpose of the rules is to achieve maximum emissions reductions from light-duty passenger vehicles. Oregon is working on a separate effort, via the Statewide Transportation Strategy, which includes strategies to reduce GHG emissions from the transportation sector. To reduce VMT and promote alternative modes, transportation demand management strategies such as a statewide trip reduction ordinance was identified as an action for this next year. The Commute Options Rulemaking will strengthen the existing Employee Commute Options Rules (OAR 340-242) and develop new rules to establish an employer-based commute option program in Oregon outside of the Portland metropolitan area. Employee Commute Options is a mandatory program for employers in the Portland metro area with more than 100 employees reporting to a work site. These employers must provide incentives for employees to use commute options like taking the bus or carpooling, offering telecommuting and flexible work schedules, and encouraging bike and pedestrian options. The program reduces hundreds of tons of smog forming pollution every year in addition to toxic air contaminants and greenhouse gasses.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 130

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## **Suggested Change #15: Other - Do not wash cars, save other resources**

**Description:** Commenter suggests car owners shouldn't wash their cars which would save water resources.

**Response:** Thank you for your comment. This comment is not directed at the proposed rules. The rules establish requirements for manufacturers to produce and deliver zero emission vehicles for sale, starting with the 2026 model year. These comments are outside the scope of this rulemaking.

**Response Type:** no agency response required

**Comment IDs linked to this Suggested Change:** 139

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## **Suggested Change #16: Car technology is not ready or available or reliable**

**Description:** The technology has not been developed, and tested, to provide adequate implementation of totally electrical powered vehicles. The distance covered by a charge is too few miles and the recharge time is too great. With the average electric car only able to travel 60-120 miles per charge, how is rural Oregon going to get anywhere. There are no good options for trucks that are used to tow rv's, boats and utility trailers. The demand has been predicted to not keep up with the supply. Give the EV cars and trucks some time to ensure that they are what we want them to be before agreeing to completely sell out to an entirely new and extremely costly legislation. Standards are good but the super strict ones are not practical with current technology and no one knows when the technology will be there.

**Response:** Thank you for your comment. In evaluating the existing ZEV market, there are already over 60 ZEV and plug-in hybrid electric vehicles available in the market, ranging from small passenger cars, SUVs, and light-duty trucks. Another 57 models are projected to come to market by model year 2025. Based on automaker projections in the next few years and public commitments by many major automakers to transition their fleet to electric vehicles, DEQ is confident the technology exists to make the transition to ZEV vehicles.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 122, 130, 136, 138, 141, 204, 656

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## **Suggested Change #17: Ban cars in large cities, allow only e-bikes and e-scooters**

**Description:** Oregon should mandate that all cities over 10,000 in population implement streets running north to south and east to west where only human powered, low speed (under 15 MPH) electric bicycle and scooters are allowed.

**Response:** DEQ thanks you for your comment. This comment is outside the scope of the rules. The proposed rules address emissions requirements for the sale of new motor vehicles beginning with the 2026 model year.

**Response Type:** no agency response required

**Comment IDs linked to this Suggested Change:** 145

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## **Suggested Change #18: EVs mean fewer fuel tax revenues which will lead to reduced maintenance of roads**

**Description:** Concerns are the capacity of the current electric grid and how roads will be funded with decreased fuel taxes. Oregon currently has some of the worst roads in the country, since road taxes are paid in the fuel cost, how much worse will the roads and road maintenance become?

**Response:** Thank you for your comment. The state recognizes revenue from the existing gas tax will decrease as more ZEVs are on the road in Oregon. State agencies are currently evaluating other options for how this revenue may be replaced from other sources, such as a road mile usage tax, or other considerations. Currently, EV owners pay a higher registration fee compared to gasoline engines in acknowledgement of the loss of gas tax revenue.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 179, 215

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## **Suggested Change #19: Electrical demand - Rural areas not able to meet electrical demand for EVs, only require in big cities**

**Description:** EV's should be required in the larger populated cities where most vehicles are used for transportation to and from work, Larger cities have a better power grid and can accommodate the additional power demand. Making a statewide ban would put small towns and rural citizens at a disadvantage for services.

**Response:** Thank you for your comment. As ZEV sales increase, the market will be incentivized to respond by providing fast-charging infrastructure along major travel corridors as well as in less populated, more rural areas. The State and federal government are also investing in zero-emission infrastructure, with a prioritization of investments in rural and disadvantaged communities. At least \$100 million will be invested over the next 5 years to increase charging infrastructure along alternative fuel corridors and rural areas of the state.

Utilities, including those serving small towns and rural areas are planning and building for the electrical load needed to charge EVs. For example, PGE and PacifiCorp, who have areas that serve small towns and rural areas, are developing their Distribution System Plan, which maps existing distributed energy resources such as EVs on their feeders, have introduced improved forecasting capabilities including locational EV adoption, and have begun assessing how adoption locations overlay with identified existing grid constraints. The utilities are also performing engineering studies based upon forecasted load growth to determine what areas of the system need upgrades. The results of these studies inform multi-year plans for infrastructure upgrades or additions such as new substations, transmission lines or distribution circuits. Additionally, through each utility's Integrated Resource Plan, it allows the utility to plan ahead to have the generation resources to serve its load.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 222

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## **Suggested Change #20: Vehicle choice - Oregonians should be able to choose what car they drive**

**Description:** Politics should be left out of decisions like individual choice of transportation. We should let consumers decide what they want to buy; the market will supply it if government gets out of the way. When government interferes with market forces it often, actually most of the time, causes prices to go UP or it causes shortages.

**Response:** Thank you for your comment. Up to model year 2035, consumers may choose to buy new clean gasoline vehicles, and after 2035 within the ZEV requirements, many consumers will be able to choose to buy a plug-in hybrid electric vehicle that has multiple fueling sources. Additionally, the market choices for ZEV will continue to increase with a wide variety of ZEV models available and many more planned in the next few years. This includes SUVs of varying sizes that are BEVs, a van that is a PHEV, and a number of BEV pickup trucks.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 470, 6, 488, 489, 491, 496, 498, 7, 505, 507, 122, 509, 618, 510, 511, 512, 158, 514, 197, 515, 516, 517, 518, 574, 575, 159, 576, 477, 562, 564, 565, 566, 503, 513, 558, 563, 599, 643, 567, 454, 568, 569, 571, 572, 268, 451, 520, 535, 458, 460, 462, 466,

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## **Suggested Change #21: EV charging - Takes too long to charge an EV**

**Description:** Electric cars take too long to charge, are too expensive and the infrastructure will never be in place to support only electric cars. EVs do not work well for longer commutes, and you spend more time charging than driving.

**Response:** Thank you for your comment. The proposed rules require manufacturers to produce EVs that have minimum technical requirements of at least a 5.76 kW on-board charger and be equipped with a 20-foot charging cord capable of both Level 1 and Level 2 electrical charging. This will help guarantee appropriate charging speeds to enable a full charge in less than 4 hours. DC fast charging speeds are also increasing with technology improvements, which will enable vehicles to be completely recharged in 10-15 minutes.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 329, 439

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## **Suggested Change #22: Vehicle purchases - Will force people to buy gas vehicles out of state**

**Description:** People will buy gas and diesel powered cars out of state. This will create a market with its own dynamics that may have unintended consequences for those who are pushing to remove such vehicles.

**Response:** Thank you for your comment. The proposed rule provides many choices for the vehicle consumer - they will have more availability of various ZEV and PHEV models, in addition to gasoline vehicles up until 2034. The current car market does not dictate where owners must purchase their vehicles and in fact purchasers continue to buy out of state. The rules do not require people to buy cars in Oregon, nor are there requirements only allowing ZEV registrations. Because the rules are only requirements on vehicle manufacturers to produce and deliver certain percentage of ZEVs, and not a requirement on how or where vehicle purchases are made, DEQ has no further response.

**Response Type:** no agency response required

**Comment IDs linked to this Suggested Change:** 159, 458, 643, 676

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## **Suggested Change #23: EV manufacturing - Require manufacturers to produce a smaller, lighter EV**

**Description:** Strongly recommend that the regulations allow for manufacture and sales of a separate class of lighter smaller EVs which would satisfy the needs of most drivers for daily driving of less than 85 miles per day.

**Response:** Thank you for your comment. Current market choices for consumers show a wide variety of ZEV models, with many more planned in the next few years. This includes SUVs of varying sizes that are BEVs, a van that is a PHEV, and a number of BEV pickup trucks. These vehicles are anticipated to be offered at a variety of price points. Another 57 models are projected to come to market by model year 2025. That increase in models and diversification should help to increase ZEV availability and a diverse array of options for consumers, including smaller, lighter vehicles with shorter range.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 464

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## **Suggested Change #24: Vehicle choice - Regulation provides more choices for consumers**

**Description:** Electric vehicles (EVs), particularly battery electric vehicles (BEVs), are less expensive to own and operate than those with internal combustion engines and give Oregon consumers more freedom of choice when making a car buying decision

**Response:** DEQ agrees and thanks you for your comment. The market choices for ZEV will continue to increase with at least 60 models available currently and many more planned in the next few years. This includes SUVs of varying sizes that are BEVs, a van that is a PHEV, and a number of BEV pickup trucks. In fact, every manufacturer has made a public commitment to significant if not full electrification in the next 20 years. Based on public announcements, it is expected that nearly 120 ZEV and PHEV models will be available to consumers before the 2026 model year.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 457, 459, 473, 731

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## **Suggested Change #25: Cost - EVs are cheaper to own and operate**

**Description:** Currently gas cars are responsible for families on a budget spending as much as 20% of their income on fuel in addition to frequent repairs. When looking at the total costs of ownership, the costs of zero-emission vehicles over a 10-year period (for a 300-mile range passenger car battery electric vehicle), the California Air Resources Board found in their analysis that the operational savings offsets any initial costs and would be realized within the first year of ownership with savings between \$3,000-\$4,200 over ten years. The total cost of ownership for EVs is much cheaper than gas cars. Transitioning to electric vehicles is a significant economic win for Oregonians. Although the upfront costs of some (though certainly not all) electric vehicles are currently higher than comparable gas-powered vehicles, many EV owners already see cost savings over the lifetime of their vehicles. This is because operating expenses—including fuel and maintenance costs—are typically lower for electric vehicles than their gasoline counterparts. A recent survey by Consumer Reports found that battery electric vehicle and plug-in hybrid electric vehicle owners pay around half as much to maintain and repair their vehicles compared to owners of conventional cars. Coupled with Oregon's pioneering rebate, these savings allow greater access to ZEV car ownership for all of our communities.

**Response:** DEQ thanks you and agrees with your comment. DEQ's total cost of ownership analysis showed that even 2026 model year BEV owners will cumulatively save money over the ten-year period studied.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 463, 658, 654, 679, 457, 459, 616, 635, 698, 473, 482, 501, 662, 674, 731

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## **Suggested Change #26: Battery reuse - batteries from EVs can be reused**

**Description:** BEVs also have significant residual value as the battery can be partially (up to 95%) recycled for battery storage products, including for residential use. EVs have fewer parts to wear out, but when they do reach the ends of their lives, their batteries often can still be used for power storage or otherwise be recycled.

**Response:** Thank you for your comment. DEQ agrees that EV batteries can be reused and have a 2nd life. Major automakers, including Nissan and Tesla, have offered rebuilt or refurbished battery packs for service or warranty replacement of original battery packs in BEVs. Otherwise, battery packs could be utilized in stationary applications such as backup power for homes or cellular towers, or, in larger arrays, for large buildings like arenas or utility grids.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 473, 635

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## **Suggested Change #27: EV technology - not available for medium and heavy duty vehicles**

**Description:** Lack of electrical vehicles to provide the vehicles needed for business especially the heavy-duty rigs. if these rules are imposed they will cause severe crisis in our agricultural community. It is impractical to drive around large farms/ranches in rural Oregon in a Tesla, or even a Ford Lightning Pickup. There is no on-farm infrastructure for charging these vehicles (or off-farm infrastructure either), they have not been built with hauling in mind (see the recent test of the EV vs gas pickup pulling a trailer), and the purchase costs for these vehicles are significantly higher.

**Response:** Thank you for your comment. The proposed rules apply to light duty vehicles, they do not apply to heavy-duty vehicles and only optionally apply to medium duty vehicle manufacturers. Medium-duty vehicle manufacturers may choose to include their vehicles as part of the ZEV regulations or choose to comply with Oregon's Advanced Clean Truck Rule (ACT). The ACT rule requires medium and heavy-duty vehicle manufacturers to produce and deliver for sale a certain percentage of ZEVs based on their overall vehicle sales. The percentage requirements vary by vehicle class in which Class 2b and 3 trucks must be 55% ZEV by 2035. The ACT rules help accelerate the the medium and heavy-duty vehicle sector to more zero emission vehicles and ensures there will be ZEV vehicles available in the years to come.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 197, 649

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## **Suggested Change #28: EV manufacturing has a large carbon footprint**

**Description:**

**Response:** Thank you for your comment. Despite higher emissions from vehicle manufacturing, BEVs on average have much lower lifecycle GHG emissions than comparable gasoline vehicles, as manufacturing emissions are quickly offset by reduced emissions from vehicle operation.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 200

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## **Suggested Change #29: Other - DEQ should focus on protecting water quality and on forest management to prevent wildfires**

**Description:** DEQ would be wiser to protect our water ways from the application of road salt, removing boat squatters from the state waterways (keep the water clean), promoting forest thinning management to avoid wildfires. Trying to change the climate on the back of a very small population is not logical or reasonable.

**Response:** Thank you for your comment. This comment is not directed at the proposed rules. The rules establish requirements for manufacturers to produce and deliver zero emission vehicles for sale, starting with the 2026 model year. These comments are outside the scope of this rulemaking.

**Response Type:** no agency response required

**Comment IDs linked to this Suggested Change:** 651

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### **Suggested Change #30: EV charging concerns - ability for EVs to work if inadequate battery capacity or charging ability, particularly for emergency vehicles**

**Description:** If they can't power up their vehicles to make long trips, then rural citizens can not purchase either needed supplies or perform the necessary duties at their places of employment.

**Response:** Thank you for your comment. The proposed rules include minimum technical requirements of at least a 200-mile combined city and highway test range for battery electric vehicles and ability for EVs to have direct current (DC) fast charge capability to ensure faster charging. These provisions ensure manufacturers are developing and providing vehicles with sufficient range. As battery technology continues to improve to where 300+ mile range vehicles are currently available and a 400+ mile range vehicle is imminent, range anxiety becomes less of a concern.

The charging infrastructure continues to be built out across the state, with significant investments from the state and federal governments to build out the public infrastructure and private companies looking to increase access to charging across the state. Over \$100 million will be invested by the Oregon Department of Transportation (ODOT) over the next five years to increase charging infrastructure, including \$65 million to add public infrastructure charging every 50 miles along alternative fuel corridors which are many of the major highways in Oregon (I-5, I-84, Highways 97, 101, 26, 20, 42, and 95, and \$4 million to conduct upgrades along the West Coast Electric Highway. The federal government has pledged \$30 billion in funding that can be utilized towards zero emission vehicle charging infrastructure across the U.S. ODOT is also committing \$8 million for its Community EV Charging Rebate Program to support the installation of Level 2 EV charging stations at multi-unit dwellings, stop and shop locations, and tourist destinations. There are also a number of private sector investments (GM, Tesla, Ford, Electrify America, Shell) are expected to invest heavily in expanding and building the charging network across the state.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 2, 192

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## **Suggested Change #31: Fueling - Should support natural gas instead, as it is carbon neutral**

**Description:** For clean and carbon neutral cars you should be supporting natural gas.

**Response:** Thank you for your comment. The proposed rules do not prescribe a technology mandate or electric vehicle mandate. Rather, the proposed rules incorporate emission standards on new vehicles to which the rule applies such that, by 2035, any new vehicle sold within Oregon must have zero emissions or meet the requirements for a plug-in hybrid electric vehicle (anticipated to contain an ICE). If future technologies emerge that ensure there are no on-board emissions, it is possible they could be used for compliance.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 2, 675

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## **Suggested Change #32: Environmental justice - Rules will have a harmful effect on low-income and environmental justice communities**

**Description:** It will disproportionately affect the marginalized, poor, indigenous, and elderly citizens who will be denied the ability to travel freely, maintain employment, and purchase needed food. This will increase the price of EV's which is great for elites who can get a tax credit (subsidy) not so great for others who cannot even buy the vehicle. The lower income families of Oregon will not be able to afford the extreme high cost of EV's.

**Response:** Thank you for your comment. The significant pollution reductions from the regulations will reduce exposure to vehicle pollution in communities throughout Oregon, including in low-income and disadvantaged communities that are often disproportionately exposed to vehicular pollution. The proposed rules may decrease the exposure to air pollution of those who live and work near roadways.

The total cost of ownership (TCO) for an EV was calculated to be a net benefit for the vehicle owner. A person buying a battery electric vehicle in 2026, even without installing or having access to a home charger, would still see a cost savings as soon as one year into owning the vehicle. Battery electric vehicles are assumed to have 40% lower maintenance costs than comparable conventional vehicles, a large contributing factor to the TCO cost savings results overall.

The increasing ZEV requirements will increase the population of used ZEVs, which will make ZEV ownership more attainable for lower-income households. The ZEV assurance measures ensure that there are durable and reliable ZEVs, particularly as the new ZEVs enter the used vehicle market. Durable and better performing used ZEVs can help increase access to clean vehicle technologies for communities that may not be buying new vehicles, but do need reliable household mobility options. The proposed rules also include provisions to encourage manufacturers to take actions that improve access to ZEVs for disadvantaged, low-income, and other frontline communities, including by investing in community car share programs, producing affordable ZEVs, and delivering used vehicles to dealers that participate in a complementary equity incentive programs.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 4, 9, 160

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### **Suggested Change #33: ZEV mandate - Do a smaller scale approach rather than requiring 100% EVs by 2035**

**Description:** Suggest attempting this at small scale, maybe just Salem to start.

**Response:** DEQ thanks you for your comment. As a Section 177 state, states that choose to adopt California's rules must do so identically. Oregon may not make modifications, including a smaller scale approach to the rules.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 14

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## **Suggested Change #34: EVs will have battery and range issues**

**Description:** EVs are all right for city driving but longer trips won't work. Have you considered that if EV semi trucks that transport our food and other necessary supplies have any battery issues, then that is yet another problem to deal with as well. Trucks bring us everything needed to get by, including medications. It seems very short sighted to not factor that fact into the equation. If people can't power up their vehicles to make long trips, then rural citizens can not purchase either needed supplies or perform the necessary duties at their places of employment. Concern about battery limitations and the ability to take long trips.

**Response:** Thank you for your comment. The proposed rule includes ZEV assurance measures that requires manufacturers to ensure vehicle range is durable over the life of the vehicle and offer warranties that cover battery replacements if the all-electric range has deteriorated significantly. For example, the proposed rule require vehicle manufacturers to meet 10 years or 150,000 miles vehicle durability requirements on electrification components. It also requires a battery state of health warranty, which will be no less than 70% for 8 years or 100,000 miles for 2026 through 2030 model years and 75% for a warranty period of 8 years or 100,000 miles for 2031 and subsequent model years. Manufacturers must also meet a propulsion parts warranty of 3 years or 50,000 miles and for higher priced components a 7 year/70,000 mile warranty. The regulations also require that vehicles provide information on battery health. These requirements are expected to result in improved batteries in vehicles.

The rules also include additional include requirements for minimum ranges for zero-emission travel, (150 mile range for battery electric vehicles, 50 mi range for plug-in hybrid electric vehicles), fast-charging capability, and features that facilitate access to charging infrastructure. It ensures these cars will have sufficient range, charging capability, and durability to move people and goods across Oregon.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 192, 543

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## **Suggested Change #35: Climate change - The rules will not have an impact**

**Description:** Emissions from India and China are contributing the problem. Banning cars will not have an effect in Oregon, must less have an effect worldwide. Oregon is simply too small to have ANY impact on the future of global warming, and it makes no sense for government to punish Oregon citizens to achieve something so amorphous and far into the future. Pollution in Oregon is low, and Oregonian's contribution to global warming is minuscule. Even if every Oregonian cut their emissions to zero there would be no measurable impact on global carbon.

**Response:** Thank you for your comment. DEQ disagrees with the commenters that the rules will not have an effect in Oregon. The proposed rules are anticipated to reduce CO2 emissions between 48 MMT and 54.1 MMT per year by 2040. These reductions will improve climate outcomes in Oregon while ensuring vulnerable communities are not continuing to experience the harmful effects of climate change. Even incremental GHG reductions can help and without an integrated effort by states and countries, the world will continue to experience global warming.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 7, 200

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## **Suggested Change #36: ZEV compliance - manufacturers will not be able to meet the EV mandates**

**Description:** It is my understanding that 11 or more states will follow the California mandate like Oregon is planning. Will this artificial demand affect the vehicle availability in non-mandate states? It seems to me that the mandated states will have a legal requirement and when push comes to shove, they will reallocate EVs away from the non-mandated states. This will work against EV adoption in those areas.

**Response:** DEQ thanks you for your comment. Manufacturers are at different places in terms of technology and market development. The proposed rules incorporate various compliance flexibilities in recognition of these differences, aiding in compliance. For example, a compliance flexibility in the early years of ACC II provided by the pooling provision supports maximizing feasible emissions reductions from ACC II in Oregon. Pooling, as adopted in the ACC II ZEV regulation, allows manufacturers to manage year to year fluctuations in annual vehicle volumes, especially across different states, in the early years of ACC II and still allow for full compliance, while maintaining the overall stringency of the regulation.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 212

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## **Suggested Change #37: EV technology - Rules drive investment in EV manufacturing and technology by auto manufacturers**

**Description:** This provides a stable policy environment in which industry can invest in building out ZEV supply chains with certainty that their products will have a market. Investing in ZEV supply chains will expand the market, as automakers will need to meet consumer demand for new vehicles while ensuring those vehicles qualify as ZEVs. The proposed rule facilitate increased investment for the portion of the motor vehicle sector that needs it most, by fostering technological innovation in ZEV manufacturing.

**Response:** DEQ thanks you and agrees with this comment. Many major auto manufacturers have already committed to transforming their vehicle fleets to EV and are ramping up production facilities including the construction of factories, manufacturing of batteries, procuring critical materials and ZEV components, and utilizing recover of materials from used batteries.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 213, 457, 675, 731

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## **Suggested Change #38: Program review and reporting - DEQ should not allow interim review as it can result in gaming of the requirements**

**Description:** Setting a duration where the Environmental Quality Commission (EQC) is expected to consider program compliance and implementation can, if review can result in rule changes, inadvertently result in system gaming. If a review was completed too early in the program, regulated parties may be disincentivized to deliver ZEVs to Oregon for compliance if there may be opportunity during that review to potentially increase compliance flexibility. The EQC should not consider alterations to the rules, unless CA has made modifications.

**Response:** DEQ thanks you for your comment. The purpose of the program review is to provide an update of the program's implementation and compliance by manufacturers. As a Section 177 State, DEQ must adopt California's rules identically cannot make any modifications to the rules, unless California makes similar changes.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 213

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## **Suggested Change #39: Program review and reporting - If interim review allowed, should occur after 2031**

**Description:** This is after the sunset of compliance flexibilities (pooling, historic credit use) to prevent gaming of the flexibilities

**Response:** DEQ thanks you for your comment. DEQ understands the interest in setting a program review after 2031 once the compliance flexibilities have expired. DEQ intends to conduct a program review in 2030. This provides DEQ the opportunity to review program compliance through the 2029 model year vehicles and assess how the compliance flexibilities are being utilized. The timing also allows DEQ to consider information California will have recently provided to its Board regarding ZEV market conditions, ACC II compliance and implementation, including how the environmental justice measures are being implemented.

**Response Type:** yes, we made changes to address this comment

**Comment IDs linked to this Suggested Change:** 213

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## **Suggested Change #40: Program review and reporting - if required should include PHEV all electric use**

**Description:** Recommends review and consideration of real-world PHEV all-electric use in Oregon in order to understand true emissions from the PHEV segment.

**Response:** DEQ thanks you for your comment. The program review may incorporate a review of PHEV all-electric use, however DEQ is uncertain how this information could be captured by the manufacturers who report their compliance obligations on the number of vehicles delivered for sale.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 213

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## **Suggested Change #41: Environmental justice - Not all concerns of EJ communities have been adequately considered.**

**Description:** The solutions proposed for community-based clean mobility programs are not applicable in rural, remote, and coastal communities, and public charging stations are likely to be sparsely located. Youth, seniors, and persons with disabilities make use of multi-passenger vehicles for their transport. These services are frequently provided by non-profit organizations, so cost is a major concern.

**Response:** Thank you for your comment. The proposed rules include a number of provisions to encourage manufacturers to take actions that improve access to ZEVs for disadvantaged, low-income, and other frontline communities. While investments in community car share programs may not be as applicable in rural, remote, and coastal communities, vehicle manufacturers are strongly encouraged to meet some of their compliance obligation on that and other environmental justice programs, such as producing affordable ZEVs, and delivering used vehicles to dealers that participate in complementary equity incentive programs.

The Oregon Department of Transportation is spending almost \$100 million over the next five years to build up the infrastructure network. ODOT is spending \$52 million to place new 150 kW and DCFC charging ports every 50 miles along alternative fuel corridors. The fuel corridors include major roads along Interstates 82, 84 , and Highways 20, 26, 30, 42, 95, 97, and 101, which serve rural and coastal communities. An additional \$36 million will be used to close EV infrastructure gaps beyond these corridors with a focus on rural and underserved communities.

As manufacturers continue to produce increasing models of EVs, which will include SUVs and multi-passenger vehicles, these vehicles may be eligible for non-profit organizations to purchase and receive a rebate under Oregon's Clean Vehicle Rebate Program. A rebate of \$5,000 can help defray costs for these organizations who may use these vehicles for transport.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 226, 732

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## **Suggested Change #42: Environmental justice - multi-passenger cars and pickups are more expensive, utilized by EJ communities, and existing rebates do not address the higher price points for these cars**

**Description:** Youth, seniors, and persons with disabilities make use of multi-passenger vehicles for their transport. These services are frequently provided by non-profit organizations, so cost is a major concern. The rebates are the same for pickup trucks and minivans as for other passenger vehicles, while they are more expensive.

**Response:** DEQ thanks you for your comment. In looking at the fiscal impacts of the rules, DEQ relied on California's assessment of the total cost of ownership and This TCO analysis accounts for a number of cost factors, including vehicle price, loan fees, sales taxes and registration fees, fuel costs, maintenance costs, and a home charger capital investment for some buyers (though as noted above, even drivers without a home charger save money). The results show that even when factoring in all these cost factors BEV owners will save \$3,216 over ten years in the most conservative case evaluated (a 2026 model year BEV. State and federal vehicle purchase incentives are available now and are anticipated to remain in effect for a number of years to mitigate the impact of the purchase cost of a new or used ZEV.

Additionally, under the Oregon Clean Vehicle Rebate Program, non-profit organizations are able to apply for and receive a \$5000 Charge Ahead Rebate for the purchase or lease of Chrysler Pacifica (minivan) and the Ford F-150 (pickup truck). Other funding, via PGE's Drive Change Fund, millions of dollars have been awarded to organizations throughout Oregon who are helping build a clean energy future. These grants have allowed organizations such as the African Alliance for Home Ownership in Portland, Family Building Blocks in Woodburn, and Native American Rehabilitation Association of the Northwest to purchase multi-passenger vans and cars for use in shuttling their members around town.

**Response Type:**

**Comment IDs linked to this Suggested Change:** 226

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## **Suggested Change #43: Rebates - Provide medium-duty and heavy-duty vehicle rebates**

**Description:** Allow for a tiered approach to rebates. Electric pickups and SUVs compete directly with some of the most polluting passenger cars on the road today and offer disproportionate climate benefits.

**Response:** Thank you for your comment. The purpose of the proposed rules is on light-duty vehicles and passenger trucks. The scope of this rule does not include medium and heavy-duty vehicles. DEQ is working to help accelerate the transition to zero emission vehicles for all vehicle classes including those for medium and light-duty vehicles. For example, under Oregon's Clean Fuels Program, utilities and infrastructure providers can earn credit under Oregon's Clean Fuels Program and monetize those credits for future medium and heavy duty EV infrastructure development or vehicle purchase. Additionally, the Oregon Legislature recognized the interest in supporting the electrification of the medium and heavy duty vehicle sector. It directed the DEQ and Oregon Department of Transportation to develop a report with an analysis of existing incentives available to support the transition to zero emission medium- and heavy-duty transportation fleets. The report will address incentives for both vehicles and electric charging and other fueling infrastructure. This report is due by Dec. 1, 2022.

**Response Type:** no agency response required

**Comment IDs linked to this Suggested Change:** 230

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## **Suggested Change #44: Rules do not fully acknowledge the potential for biofuels to reduce lifecycle transportations emissions.**

**Description:** ACC II's focus on ZEVs ignores the lifecycle emissions associated with transportation. A lifecycle approach looks beyond one isolated aspect of a fuel's lifecycle (like tailpipe emissions) and instead considers the total GHG emissions over the lifecycle of the fuel. Renewable fuels have lower carbon intensity than gasoline.

**Response:** Thank you for your comment. DEQ relied on CARB's assessment of the lifecycle analysis of the rules. CARB analyzed low-carbon fuel technology in lieu of ZEVs as an alternative in its draft environmental analysis. According to CARB, these lower-carbon alternative fuels coupled with improved internal combustion engine technologies may be able to reduce GHG emissions in the near to mid-term. However, this approach would not meet basic project objectives and would be infeasible. First, low-carbon fuel technology fails to reduce criteria emissions needed to meet ambient air quality standards. Second, adopting a new GHG performance regulation that credits the full lifecycle of renewable fuels would require tracking of individual driver fueling events by manufacturers for the millions of vehicles in the light-duty fleet. This could result in a program that is not verifiable or enforceable.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 241

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## **Suggested Change #45: Flex fuel - should incorporate low-carbon, affordable liquid fuels to achieve GHG emissions reductions.**

**Description:** In addition to electrification, DEQ should ensure that the state consider, support, and take advantage of all approaches to decarbonizing transportation to meet the state's climate and air quality goals. Flex fuels provide GHG reductions, especially for PHEVs using renewable energy and renewable fuels. Flex fuel provides GHG benefits similar to that of battery electric vehicles and for a lower price.

**Response:** Thank you for your comment. DEQ recognizes low-carbon fuels like renewable diesel, ethanol and renewable gasoline are compatible with existing vehicle infrastructure. These fuels provide an additional solution to reduce transportation GHG emissions. However, there are still NOx and air toxic emissions generated from the combustion of these fuels. The proposed regulation and the ZEV requirements provide the necessary GHG emission reductions to help Oregon achieve its GHG reduction goals as well as air pollutant reductions to help the state meet national ambient air quality standards.

Biofuels will still have a market opportunity with passenger vehicles given there will continue to be billions of gallons gasoline consumed by the conventional vehicles in the fleet for several decades. Separately, other policies including Oregon's Clean Fuels Program, encourage the investment and development of advanced biofuels and the supply and delivery investments required to bring the fuels to market.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 241, 356, 661

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## **Suggested Change #46: Limiting to one fuel source limits investments and hinders innovation in decarbonization efforts**

**Description:** Mandating one fuel source and accepting the premise that there is no future for other sources will limit investments and innovation in decarbonization efforts by current participants in the energy markets.

**Response:** Thank you for your comment. The proposed rules are fuel neutral. They establish emission standards and related requirements to ensure new vehicles have zero emissions from the tailpipe. Manufacturers determine the means to comply and presumably do so with the most cost-effective means available. It does not preclude the use of new technologies using other sources of fuel to meet the performance based emission standards.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 247

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## **Suggested Change #47: Infrastructure - already exists for liquid fuels and is cheaper to install and maintain than electric infrastructure**

**Description:** Propane's fueling infrastructure is nimble, scalable and easily deployable. It is also extremely costeffective. Many fleets have invested in onsite fueling infrastructure for autogas. This infrastructure is substantially cheaper than the electric infrastructure upgrades required for onsite fueling. Autogas refueling stations – which can be public, private, or even temporary stations – are a fraction of the cost of tying a new charging station into the electric grid.

**Response:** Thank you for your comment. As ZEV sales increase, the market will be incentivized to respond by providing fast-charging infrastructure along major travel corridors as well as in less populated, more rural areas. The State and federal government are also investing in zero-emission infrastructure, with a prioritization of investments in rural and disadvantaged communities. Up to \$100 million will be invested over the next 5 years to increase charging infrastructure along alternative fuel corridors and in rural areas of the state.

While some of these installation and maintenance costs will likely be passed down to consumers, overall the total costs of owning a battery electric vehicle are cheaper than a gasoline vehicle. DEQ referred to California's total cost of ownership analysis that shows a 2026 model year BEV owners will cumulatively save money over a ten-year period. The results show that BEV owners will save \$3,216 over ten years (a 2026 model year BEV with higher electricity prices assuming no access to a home charger) and will realize savings within the first year of ownership. This TCO analysis accounts for a number of cost factors, including vehicle price, loan fees, sales taxes and registration fees, fuel costs, maintenance costs, and a home charger capital investment for some buyers. The assessment includes the costs for drivers without home chargers who rely on more expensive public charging or charging at DC fast chargers.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 247

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## **Suggested Change #48: Flex fuel for internal combustion engines (ICE) - require this for 2026 model year and beyond**

**Description:** Should request CARB modify ACC II rules to require ICE engines be flex fuel compatible for 2026 MY and beyond

**Response:** DEQ thanks you for your comment. Flex fuel requirements for ICE engines are currently not required under California's Advanced Clean Cars II rule. As a Section 177 State, DEQ must adopt California's rules identically cannot make any modifications to the vehicle requirements, unless California makes similar changes.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 356, 711

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## **Suggested Change #49: Flex fuel is cheaper and a lower cost option compared to gasoline especially for low income families**

**Description:** Car companies have demonstrated the ability to build mass quantities of FFV engines at a negligible incremental cost. Ethanol sells at a material discount to gasoline. E85 in California has been selling recently at a price two dollars a gallon under regular gasoline. Ensuring this low-cost compliance option for lower income consumers is valuable in meeting the equity goals of the ACC II regulation.

**Response:** Thank you for your comment. Although current flex fuel fuel prices may provide savings to drivers compared to gasoline, it is not necessarily a larger savings compared to what EV drivers experience. In order to determine this a full total cost of ownership (TCO) analysis would be needed comparing BEVs to flex-fueled conventional vehicles. In looking at the total cost of ownership for battery electric vehicles, it shows that owners will save over \$3,000 over ten years with a 2026 model year vehicle. The ten-year savings are even greater with a 2035 model year vehicle.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 356, 661

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## **Suggested Change #50: Hydrogen fueling and fuel cell vehicles - DEQ should ensure equal access to vehicles and equivalent incentives and infrastructure as electric**

**Description:** Ensures that Oregonians can acquire the vehicle that works best for their particular circumstances – whether that is minimal driving in an urban setting with ample charging availability or long distance driving in rural areas where extreme temperatures, terrain and towing needs make FCEVs the better choice.

**Response:** Thank you for your comment. The proposed rules are technology neutral. It is the market and the manufacturers that will determine which vehicles and fuels work best for various uses and needs. Standards to require ZEVs are performance-based, for vehicles that do not emit exhaust or evaporative emissions. The ACC II regulations allow vehicle manufacturers to use any means of meeting those standards so long as the related requirements are met.

DEQ acknowledges for consumers or businesses with long-distance driving needs, hydrogen fuel cell electric vehicles offer a viable option to meet their needs. DOT's Hydrogen Pathway Study — looked at how to prepare Oregon for hydrogen fuel cell electric vehicles over the next 15 years, and outlined a set of phased recommendations through 2035. Oregon also recently completed a study on the potential benefits of, and barriers to, production and use of renewable hydrogen in Oregon. The study looked at the total amount of hydrogen currently used in Oregon, potential applications for renewable hydrogen by 2030, and the technological, policy, commercial, and economic barriers to adoption of renewable hydrogen in Oregon.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 362

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## **Suggested Change #51: Legal authority - DEQ and EQC do not have authority to adopt rules**

**Description:** ACC II is preempted by federal law. The commenter states California lacks the legal authority to adopt the rules, and therefore DEQ also lacks the authority to do so. The DEQ should appeal to the federal EPA and federal DOJ for preclearance so as to save the state from costly litigation that is likely to postpone implementation of draft Clean Car standards. The rules are also preempted by the Energy Policy Conservation Act (EPCA), citing the EPCA preemption provision prevents California from adopting regulations when they are "related to" fuel economy regardless of any accompanying localized pollution benefits. This provision is self-executing, meaning that no agency action is necessary for it to be effective—the lack of a National Highway Traffic Safety Administration (NHTSA) regulation expressly preempting CARB's program does not affect EPCA's preemptive effect. This provision also contains no waiver. Oregon cannot and should not adopt the California regulations until they have been granted a waiver by EPA and further research has been done on the actual effect of the regulations. Even if the state were allowed to adopt California's regulations prior to receiving an EPA waiver, it makes little sense to do so. Given the recent actions by EPA on the waiver for the Advanced Clean Car I rules (ACC I), there is a real possibility that the waiver will not be granted, or even rescinded shortly thereafter. The commenter also states the proposed rules conflict with federal statutory objectives including EPCA, the Federal Power Act, and the Energy Independence and Security Act (EISA) of 2007.

**Response:** Thank you for your comment. DEQ disagrees that the standards are preempted by or conflict with, federal law and that the EQC lacks authority to adopt them. Vehicle emissions standards for which California obtains a waiver under Section 209 of the Clean Air Act are not fuel economy standards.

While California has not yet received an EPA waiver for the proposed rules, DEQ is within its legal authority (Oregon Revised Statute 468 and 468A) to adopt the rules, contingent on the issuance of such a waiver. Section 177 of the federal Clean Air Act ("Section 177") allows states to adopt vehicle emission standards that have been adopted by the State of California and that are more stringent than the federal standards. Oregon has a long history of adopting many of California's vehicle emission standards in order to meet national and local air quality standards.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 449, 714

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## **Suggested Change #52: Fiscal analysis - DEQ failed to account for the costs of charging infrastructure and grid infrastructure**

**Description:** The proposed rules did not account for costs associated with multi-family residential, public and workplace chargers which we estimated at a cost of \$13 - \$24 billion in California. Using DEQ's proportioning methodology, this would theoretically add an additional \$1.3 to \$2.4 billion in added costs for implementing ACC II in Oregon. Even more significant are the costs associated with grid infrastructure (generation, distribution, and transmission). The cumulative costs of deploying 35 million ZEVs in California could be as high as \$1.55 trillion from 2026-2050. Proportioning this figure to Oregon for 2026-2040 would yield approximately \$90 billion in costs. Unfortunately, DEQ's fiscal analysis not only failed to capture these costs, but it also only mentions them as a benefit to "ZEV components and infrastructure businesses" such as utilities and Electric Vehicle Supply Equipment providers.

**Response:** Thank you for your comment. DEQ first notes that the cost of charging infrastructure and grid infrastructure is not a direct cost of compliance of this program, although some part of the ultimate buildout of such infrastructure over the next 20-30 years may be an indirect fiscal impact of the program. DEQ relied on California's assessment of the fiscal impacts of the proposed regulation, noting that because the rules DEQ is proposing are identical to those adopted and proposed in California, the fiscal and economic impacts described by CARB for California also describe the relative effect of the likely fiscal and economic impacts that will occur in Oregon. California's assessment accounted for the increasing electricity costs associated with electric utility investments for higher load demands, renewable supplies, and upgrades to transmission and distribution costs. California also noted as transportation electricity demand increases, the costs of investment in grid infrastructure would be spread across a larger base. This could result in lower per unit energy refueling rates. DEQ updated the fiscal statement to acknowledge the potential costs for grid infrastructure development.

With regards to charging infrastructure, Oregon and the federal government are investing heavily in charging infrastructure. Over \$100 million will be invested over the next five years to increase charging infrastructure, including \$65 million to add public infrastructure charging every 50 miles along alternative fuel corridors which are many of the major highways in Oregon (I-5, I-84, Highways 97, 101, 26, 20, 42, and 95, and \$4 million to conduct upgrades along the West Coast Electric Highway. ODOT is also committing \$8 million for its Community EV Charging Rebate Program to support the installation of Level 2 EV charging stations at multi-unit dwellings, stop and shop locations, and tourist destinations. Significant private investments are also expected. State and federal funding is typically offered as a matching grant, meaning that private investment will supplement the public investments and roughly double the total expenditures on infrastructure. Other private investments from EVSE providers or automakers include Tesla. Additionally, the recent federal Inflation Adjustment Act incentivizes further private investment in domestic clean energy manufacturing and supply chains.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 449



## **Suggested Change #53: Environmental justice - Improves access to clean transportation for all income levels**

**Description:** The ACC II regulations include several provisions to increase deployment of clean transportation technology to disproportionately impacted and low-income communities, many of which are predominantly communities of color. Besides the ACC II regulations, support is being provided through State and federal investments in zero-emission infrastructure, with a prioritization of investments in disadvantaged communities.

**Response:** DEQ agrees and thanks you for your comment.

**Response Type:**

**Comment IDs linked to this Suggested Change:** 733, 734, 493

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## **Suggested Change #54: Environmental justice - improves air quality for communities near transportation corridors**

**Description:** Adopting the ACCII rule now is one of the most practical, achievable, effective, and economically beneficial actions Oregon can take to reduce toxic pollution, lessen the public health burden on EJ communities, and meet our climate goals. In urban and rural communities alike this rule will be good for the Oregon consumer. They will have access to more affordable EVs, save money on vehicle maintenance and upkeep, substantially save money on fuel, and make their communities a much healthier place to live. Low income and BIPOC households are exposed to high levels of pollutants that are products of combustion. Evidence suggests that these pollutants exist in higher concentrations in areas home to lower income and BIPOC households. Reduced emissions will save lives, reduce hospital admissions and emergency room visits, and reduce the unjust burdens of air pollution on people of color.

**Response:** DEQ agrees and thanks you for your comment.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 729, 457, 459, 463, 695, 710

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## **Suggested Change #55: Environmental justice - rules expand used EV market making EV ownership more accessible for low income communities**

**Description:** The proposed rule is designed to make EVs more affordable and accessible to a wider array of people, including providing lower cost EVs and greatly expanding the used EV market.

**Response:** DEQ thanks you for your comment and agrees. The used car market can be a powerful tool in ensuring ZEV access at all income levels. The increasing ZEV requirements will increase the population of used ZEVs, which will make ZEV ownership more attainable for lower-income households.

**Response Type:**

**Comment IDs linked to this Suggested Change:** 733, 459

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## **Suggested Change #56: Consumer flexibility and robust EV market - provides many choices for consumers PHEV and EV and provides regulatory certainty**

**Description:** For people considering the shift to electric vehicles it's very helpful that the rule includes Plug-In Hybrid Electric Vehicles (PHEVs). A plug-in hybrid electric vehicle (PHEV or plug-in) uses a combination of gas and electric power. It can drive 20 to 50 miles using its clean electric engine before the gasoline engine kicks in, meaning it can be a full-electric as a commuter car Monday to Friday, and ideal for road trips on weekends. These electric vehicles with gasoline backup are a great choice for people who want more flexibility to meet their transportation needs without being solely reliant on charging. These types of vehicles could be especially useful in rural Oregon with longer travel distances, and potential longer power outages during storms. The use of EVs and gas-electric hybrid vehicles under the rule will provide Oregonians a wide array of vehicle choices. The Advanced Clean Cars II standards provide the industry with adequate lead time and are consistent with automaker's own commitments and product plans.

**Response:** DEQ thanks you for your comment and for your support. Strong ZEV requirements provide more clarity for numerous stakeholders on which vehicle technologies are likely to enter the market. Fueling infrastructure, grid and hydrogen supply expansions, and vehicle supply chain changes all rely on long-term investments. The proposed rule helps inform decisions to invest in and develop clean energy technology, which are important to support given the required pace of change necessary to protect public health.

**Response Type:** no agency response required

**Comment IDs linked to this Suggested Change:** 711, 731, 459, 662, 698

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## **Suggested Change #57: Electrical grid - utilities are planning and preparing for EV adoption**

**Description:** The Oregon Department of Energy confirms that Oregon's electric grid will adapt to handle the advent of electric vehicles. Oregon's electric utilities are planning for it and will manage it thoughtfully and expertly. Concerns over the future grid will be addressed and handled, and are no reason to avoid adopting this rule now. The utilities use a detailed forecast for electric vehicle growth in their service territories to inform their Distribution System Plan, Transportation Electrification Plan, and Integrated Resource Plan. This forecast is updated annually and reflects the most recent data available for EV sales and adoption rates, battery pack costs, estimates of EV model availability, DMV registrations and the expected impact of public policy. Utilities, such as PGE are also planning for e increasing deployment of microgrids, battery storage, vehicle to grid equipment, and other technologies that will be available to help provide backup power people can access when the power is out.

**Response:** DEQ thanks you for your comment.

**Response Type:** no agency response required

**Comment IDs linked to this Suggested Change:** 459, 660, 681, 692

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## **Suggested Change #58: Program review - DEQ should conduct periodic review**

**Description:** Technology advancing programs such as ACCII always benefit from periodic review. Such a review by the EQC will give DEQ, the Commission, stakeholders and the public the opportunity to review the current status of EV technologies, market conditions, economic developments, grid and charging infrastructure developments, the availability of financial incentives, as well as any environmental justice issues and allows the EQC to make course corrections if warranted.

**Response:** DEQ thanks you for your comment. DEQ intends to conduct a program review in 2029. This provides DEQ the opportunity to review program compliance through the 2028 model year vehicles and assess how the compliance flexibilities are being utilized. The timing also allows DEQ to consider information California will have recently provided to its Board regarding ZEV market conditions, ACC II compliance and implementation, including how the environmental justice measures are being implemented.

**Response Type:** yes, we made changes to address this comment

**Comment IDs linked to this Suggested Change:** 459

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## **Suggested Change #59: Infrastructure - EV charging is being developed to support the rules**

**Description:** The State of Oregon, the U.S government, and the private sector are all hard at work building out the charging infrastructure needed to support an electric transportation future. Oregon was just approved by the federal government's National Electric Vehicle Infrastructure formula for funds to expand public charging infrastructure, and the Oregon Department of Transportation has invested \$100 million in public charging infrastructure, especially in underserved communities

**Response:** DEQ agrees and thanks you for your comment. Currently, there are over 2,000 public and private chargers across the state, and many more continue to be built across all parts of Oregon. The State and federal government are investing in zero-emission infrastructure, with a prioritization of investments in rural and disadvantaged communities.

Over \$100 million will be invested over the next five years to increase charging infrastructure, including \$65 million to add public infrastructure charging every 50 miles along alternative fuel corridors which are many of the major highways in Oregon (I-5, I-84, Highways 97, 101, 26, 20, 42, and 95, and \$4 million to conduct upgrades along the West Coast Electric Highway. ODOT is also committing \$8 million for its Community EV Charging Rebate Program to support the installation of Level 2 EV charging stations at multi-unit dwellings, stop and shop locations, and tourist destinations. There are also a number of private sector investments (GM, Tesla, Ford, Electrify America, Shell) are expected to invest heavily in expanding and building the charging network across the state.

Additionally, Oregon's Clean Fuels Program which requires increasing reductions in the carbon intensity of transportation fuels over time, provides critical incentives supporting investments in electric charging. Fuel providers can earn credits, which can be then monetized to pay for charging infrastructure in areas throughout Oregon.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 459, 662, 692, 698

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## **Suggested Change #60: Biofuel - DEQ should develop policies to support use of bioethanol**

**Description:** There are clear benefits of moving to a high-octane, midlevel bioethanol blend, such as E30, including vehicle engine efficiency, lower tailpipe emissions, and increased use of renewable fuel. We believe that the use of midlevel bioethanol blends will continue to drive investment in more efficient vehicles, as well as lower carbon biofuels. Using bioethanol in conjunction with a fuel cell would require less infrastructure change and investment and would help the state meet its ambitious goals for climate and vehicles. As DEQ considers its vehicle emission standard, we would consider ways to further develop this technology for consideration.

**Response:** Thank you for your comment. DEQ implements the Clean Fuels Program which is the appropriate policy that would encourage the use of mid-level bioethanol blends.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 661

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## **Suggested Change #61: ZEV assurance measures & battery labeling - these are essential elements of the rule**

**Description:** The requirements in the rules for specific battery capacity is an advantage to the consumer. There will be challenges to protect the environment from metal mining and a need to involve local communities and conduct environmental impact studies. Recycling metals from old batteries is also an important consideration.

**Response:** DEQ agrees and thanks you for your comment. By establishing minimum requirements for the performance of ZEVs, the ZEV assurance measures help support access to reliable ZEVs for those that may not be buying new vehicles and who need reliable and durable modes of transportation. These measures include requirements for durability, warranty, data standardization battery labeling, and serviceability. These measures ensure that the vehicles perform as needed to fully and permanently replace conventional vehicles. These measures provide consumer confidence and reliability so that ZEVs can fully penetrate both the new and used vehicle markets.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 662

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## **Suggested Change #62: Vehicle availability - ensures manufacturers will send EVs to Oregon**

**Description:** Manufacturers will prioritize sending EVs to states that have passed these rules and if the rules are not adopted it will be more difficult for Oregonians to access clean vehicles.

**Response:** DEQ agrees and thanks you for your comment.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 674, 733

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## **Suggested Change #63: MDV LEV requirements - do not include 0.020 grams per brake horsepower-hour (g/hp-hr) NOx standard**

**Description:** The proposed LEV IV certification standards are based on chassis-dynamometer testing. However, for MDV with GCWR >14,000 lbs, California proposes to also add new Three-Bin Moving Average Window (3B-MAW) in-use testing requirements with emission limits based on the HD Omnibus engine-dynamometer certification standards for model year (MY) 2027 and later HD engines which include a 0.020 grams per brake horsepower-hour (g/hp-hr) NOx standard. The NOx standard should not be included. Translating the proposed LEV IV distance-based, grams per mile (g/mi) NMOG + NOx certification bin standards to brake specific, g/hp-hr standards using reasonable assumptions for FTP 75 certification cycle work and vehicle test weight, and then comparing to the proposed engine-based in-use NOx limits in units of g/hp-hr, shows a significant misalignment in stringency. Additionally, even though CARB's HD engine-based in-use NOx limit adjusts proportionally for HD engines certifying at a Family Emission Limit different from the standard (i.e., credit-using or credit generating engines), CARB has proposed only a single set of 3B-MAW in-use NOx standards for MDV regardless of the NMOG + NOx bin level to which they are certified, effectively eliminating any fleet averaging flexibility. CARB should reconsider the stringency of the MDV in-use standards and better align them with the stringency of the proposed MDV certification standards to ensure the requirements will be achievable with technologies that customers can adopt.

**Response:** Thank you for your comment. Section 177 of the Clean Air Act requires that, if a state wishes to adopt California's vehicle emission standards, it must adopt standards identical to California's. Thus, even if we thought it prudent, Oregon may not make modifications, including a change to remove the 0.020 grams per brake horsepower-hour (g/hp-hr) NOx standard.

However, California did consider this concern about adding the 3b-MAW in use testing requirement. California reviewed the research and testing for medium duty vehicles (MDV) and determined it was technically feasible for all MDVs to meet this standard. Analysis has shown that class 2b and class 3 chassis-certified MDVs often utilize the same engine as class 3 engine-certified products, therefore a medium-duty vehicle should be able to use the same emission control technology package as demonstrated in the HD Omnibus rulemaking that is properly sized for a medium-duty engine. Since the feasibility and applicability to engine-certified MDVs was previously demonstrated, California concluded that the same assessment of feasibility for chassis-certified MDVs was appropriate.

California also recognized the proposed portable emission measurement system (PEMS) in-use standard may be more stringent than the current chassis-certification FTP bin standards for NOx but they are based on the newly adopted HD Low NOx PEMS in-use standard that apply to all engines certified for use in HD and MDV applications. California determined that adopting the same standard and test method for chassis-certified MDVs was the best way to align stringency with the engine certified path for MDVs and to improve control of emissions during high load operation. California also determined that reducing the stringency of the PEMS in-use standard proposal for chassis-certified MDVs would not achieve necessary emission reductions nor the intent of aligning stringency with MDV and HD engine certification.

California was also aware of the issue regarding stringency of the MDV in-use standards and the interest in aligning them with the stringency of the proposed MDV certification standards.

California chose not to revise chassis certification standards to give manufacturers flexibility in managing both requirements. California also noted that not having an FEL for chassis-certified MDVs does not affect the stringency between the two (chassis and engine) because it is aligned through the in-use requirement for PEMS testing.

Overall, DEQ agrees with California's assessment.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 675

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## **Suggested Change #64: MDV LEV requirement - Use of a CO2 FCL derived from FTP 75 or HD FTP cycles as a surrogate for work is a source of error for in-use emissions calculations**

**Description:** In the HD Omnibus regulation, the 3B-MAW approach uses the engine's HD FTP CO2 Family Certification Level (FCL) with units of g/hp-hr as a surrogate for work in calculations to determine both placement of each window into one of the three bins and the brake specific emissions for a

bin. However, using the HD FTP CO2 FCL is not always representative of engine thermal efficiency on other duty cycles such as those encountered during in-use testing. Additionally, CO2 does not always correlate well to power produced, such as when excess fuel is burned for thermal

management. Using the FTP CO2 FCL will result in higher emissions calculated for more efficient in-use duty cycles, which penalizes manufacturers with more efficient engines. We recommend using broadcast torque to determine work for bin placement and emissions calculations, instead of normalizing by CO2 and scaling by FCL.

**Response:** Thank you for your comment. Section 177 of the Clean Air Act requires that, if a state wishes to adopt California's vehicle emission standards, it must adopt standards identical to California's. Thus, even if we thought it prudent, Oregon may not make modifications, including any changes to the in-use emissions calculations.

California did consider the concern about the FCL error and determined, based on test data that the error can be small and provided flexibility in the proposed rule to allow for an FCL to be determined through the chassis test procedures or engine test procedures. The intention of requiring chassis-certified MDVs to meet the same PEMS test procedures and standards as engine-certified MDVs and HD is to ensure both certification paths would be equivalent in stringency. The proposed rules allow the manufacturer to determine an FCL using the chassis test procedures or engine test procedures. This gives manufacturers flexibility to choose the best option for their products.

Overall, DEQ agrees with California's assessment.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 675

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## **Suggested Change #65: MDV LEV - PEMS measurement accuracy not accounted for in the in-use standards**

**Description:** The current in-use testing program for HD engines provides measurement allowances for all pollutants, including NOx, based on extensive test programs to quantify the accuracy of the measurement systems. California, in developing the proposed rule did not conduct any such studies for the new 3B-MAW in-use testing program in the HD Omnibus regulation and removed the existing additive measurement allowances in lieu of providing a conformity factor that is meant to cover not just measurement inaccuracies but also variability due to drivers, random duty cycles, ambient conditions. The rules should account for the outcomes of that test program by including separate PEMS measurement allowances in the final rule.

**Response:** Thank you for your comment. Section 177 of the Clean Air Act requires that, if a state wishes to adopt California's vehicle emission standards, it must adopt standards identical to California's. Thus, even if we thought it prudent, Oregon may not make modifications, including a change to include separate PEMS measurement allowances for the in-use medium-duty vehicle testing.

California did consider PEMS accuracy and determined no further changes were necessary at this time. California acknowledged PEMS accuracy will further develop over time, and if in 2024, when the HD Omnibus standards take effect and further changes are required for accuracy, California will take steps to align the MDV MAW standards with any HD Omnibus changes. If California makes any changes to the rules, DEQ will also take steps to update its own program.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 675

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## **Suggested Change #66: MDV LEV requirements - Flexibility will be needed to address difficulties in finding customer vehicles to fulfill the towing requirements**

**Description:** CARB's proposed MDV in-use testing procedure requires at least 50% of non-idle operation during the manufacturer's test to include towing with a combined vehicle weight at a minimum of 70% GCWR. The minimum towing requirement could limit the available customer vehicles from which a manufacturer can select vehicles to fulfill the testing requirement of 5-10 vehicles per test group. For example, depending on trailer weight needed to meet the 70% minimum GCWR, a fifth-wheel hitch would be required. It may be difficult to find customers who have such equipment already installed on their vehicle and who are willing to allow the manufacturer to use their vehicle. Subsection 4.6.5 of the in-use test procedures gives CARB the authority to make changes to the testing requirements if a manufacturer has made a good faith effort to comply.

**Response:** Thank you for your comment. Section 177 of the Clean Air Act requires that, if a state wishes to adopt California's vehicle emission standards, it must adopt standards identical to California's. Thus, even if we thought it prudent, Oregon may not make modifications, including any changes to the testing requirements.

California determined the proposed rules provided manufacturers flexibility. Unlike in heavy-duty where manufacturers are required to perform testing on a fleet vehicle while it is in normal service for that fleet, the proposed PEMS in-use testing for chassis-certified MDVs will require manufacturers to procure a customer vehicle but then perform their own self-testing. The manufacturer will be required to properly operate and load the vehicle for such testing rather than be at the mercy of whatever the customer would do in his/her own normal usage. California also determined the requirement for a minimum test weight of 70% GCWR is not overly burdensome and is necessary to ensure these vehicles are tested at the weight loadings they are designed to tow or carry. Additionally, there is flexibility for the manufacturer to request a change in the testing requirement if "the manufacturer makes a good-faith effort to access enough vehicles to complete testing requirements."

Overall, DEQ agrees with California's assessment.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 675

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## **Suggested Change #67: Enforcement - Rules cannot be enforced if consumers refuse to buy EVs**

**Description:** If consumers refuse to buy ZEVs, manufacturers cannot sell them and must raise prices.

**Response:** Thank you for your comment. The proposed rules require that manufacturers must deliver and offer for sale a certain percentage of ZEV vehicles as part of their overall vehicles sales in Oregon. It does not require consumers to buy ZEVs. Manufacturers, in order to meet their ZEV compliance obligation may end up reducing their prices to ensure there is ZEV demand to account for their increasing ZEV requirement. Ultimately, as consumers experience driving ZEVs and the overall cost savings of ZEV ownership, DEQ believes that market demand will be sufficient.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 145

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## **Suggested Change #68: Air pollution will increase due to non-exhaust PM emissions from EVs, particularly heavier vehicles**

**Description:** DEQ asserts there will be local air quality benefits of the proposed rule through the on road reduction of criteria pollutants including CO, ozone, and fine particulate. While some of that improvement will occur, the health benefits will likely be offset by an increase in non exhaust particulate emissions. These emissions arise from the wearing down of brakes, car tires, and road surfaces, and from the resuspension of road dust.

**Response:** Thank you for your comment. Mobile sources are the greatest contributor to emissions of criteria pollutants, including particulate matter (PM). DEQ notes it is not certain that light-duty vehicle weight and associated particulate matter emissions will increase if a vehicle electrifies. Although some electric vehicle components may be weight intensive, such as battery packs, automakers may offset this with weight reduction in other components or the vehicle body. One cannot assume a net increase in vehicle weight as a result of ACC II. Therefore, tire wear particulate emissions are similar for all vehicle types and brake wear declines for ZEVs with regenerative braking capability which reduces the demand on friction brakes.

Non-exhaust emissions such as tire and brake wear will remain a concern as long as there are vehicles on the road whether they are gasoline powered or electric vehicles. To mitigate the effects of air pollutants, the proposed ACC II rules drastically reduce the PM emissions by approximately 5,000 tons of NOx and 138 tons of PM2.5 by 2040.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 676

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## **Suggested Change #69: Air pollution - there is no need for these regulations related to fossil fuel use**

**Description:** Oregon has seen reductions in emissions over the past few years and have seen reductions in GHG emissions. Oregon's GHG goals are aspirational and based on arbitrary years.

**Response:** Thank you for your comment. Oregon's Global Warming Commission 2020 report stated Oregon did not meet its 2020 emission reduction goal and is not projected to meet its 2035 and 2050 goals, set forth in Executive Order 20-04. The baseline and target years are consistent with other states across the country, and Oregon's GHG goals are reflective of the current thinking on what will be needed to avoid the worst impacts of climate change.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 676

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## **Suggested Change #70: GHG emissions - Oregon did not account for forest fires, instead should focus on this sector instead**

**Description:** Oregon should not focus on regulating EVs, since forest fires are almost as large a contributor as the transportation sector regarding GHG. This suggests that further regulating the tailpipe emissions of privately- purchased vehicles is the wrong place to look for additional gains at the present time, especially since the government has no authority (yet) to compel anyone to buy EVs. Since more than half of Oregon is owned by federal and state governments, with total management control of the land, it would make more sense to pause the ACC II rulemaking until programs to reduce wildfire emissions are put in place.

**Response:** DEQ thanks you and disagrees with your comment. Emissions from motor vehicle engines hurt public health, the environment, and the climate. Reducing emissions of one kind supports reducing emissions of others and contributes to decreasing the severity of their impacts. Reducing the emissions that cause climate change will lead to greater reductions in ozone from the efforts to reduce the pollutants that cause it, which are primarily oxides of nitrogen (NOx) and hydrocarbons (HC) from fuel combustion. These emission reductions will help reduce the risk of severe drought and wildfire.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 676

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## **Suggested Change #71: Demographic projections are out of date - this would affect overall projections of emissions and vehicle use**

**Description:** The proposed regulations also presume continued levels of industrial activity in the timber industry, even though climate change has caused projected decreased yields - which are associated with reduced emissions due to reduced operation of vehicles in support of that industry. Before adopting regulations that will profoundly impoverish Oregonians and have a tragic disproportionate impact on minority communities (a fact the proposed rulemaking buries under the cover of "equity"), DEQ needs to see if the demographic and timber harvest projections remain realistic. This is not an issue limited to DEQ - Oregon Community Colleges have adopted facility plans based on enrollment projections that were off by 33% and the State's Education Fund underbudgeted due to higher-than-forecast timber harvests in state-owned forests.

**Response:** DEQ thanks you for your comment. In assessing the fiscal and economic impacts of the proposed rule, DEQ utilized the most recent available information at the time, employing a MOVES3 model using 2017 data as the baseline. The 2017 data comes from the National Emissions Inventory, which is EPA's comprehensive and detailed estimate of emissions of air quality pollutants. The 2017 year is the most recent information available to conduct the emissions analysis.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 714

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## **Suggested Change #72: Federal infrastructure bill potential impacts - Railway offsets should be included**

**Description:** Through the federal infrastructure bill, it is projected there will be substantial investments in upgrading rail infrastructure including electrification of existing corridors. The State could make targeted grants to both passenger and freight rail corridors for upgrades and electrification given the projected infusion of new federal funds. The current rulemaking ignores these new developments, and DEQ should factor in increased railway utilization and lowered railway emissions before proceeding with rulemaking.

**Response:** Thank you for your comment. The purpose of the ACC II regulations is to reduce and eliminate passenger vehicle exhaust emissions, not to address railway emissions. However, DEQ does have other programs to address railway emissions, such as through the Diesel Emissions Reduction Act (DERA) grants. An example of railway diesel emissions reduction projects funded through DERA is repowering or retrofitting switcher locomotive engines with cleaner engines to reduce diesel fuel use and NOx emissions.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:**

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## **Suggested Change #73: Impose vehicle license fee instead of these regulations**

**Description:** A Property Tax on diesel and gasoline powered automobiles, which could then be applicable to purchase carbon credits in a cap-and-trade scheme

**Response:** DEQ thanks you for your comment. Imposing a tax or license fee is outside the scope of the proposed regulations and beyond the authority of the EQC.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 714

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## **Suggested Change #74: ZEV values - accelerate requirement in 2026-2030**

**Description:** Require more stringent ZEV requirements

**Response:** DEQ thanks you for your comment. Oregon must adopt California's rules identically, if it wants to adopt any standards more stringent than the federal standards, and therefore it does not have the flexibility to adopt more stringent standards than California's. When California developed the proposed rules, it based the ZEV requirements based on its analysis of technology, costs, product plans, and other relevant factors.

Some manufacturers will be above the ACC II ZEV requirements for 2026 MY and some will likely be below, according to 2021 survey results. Setting standards in this way acknowledges differences in automobile manufacturer market positions and allows market competition to play out within reasonable constraints, which serves to minimize costs and burdens across the industry. California considered this and other factors to determine the stringency of the ZEV requirements over the time of the regulations, including vehicle redesign frequency every 5 to 7 years, in line with typical industry practice.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 706

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## **Suggested Change #75: ZEV compliance - pooling should be eliminated**

**Description:** Should have actual ZEV sales in states, and not allow states to lag in adoption. Allows overcompliance in California but not in other Section 177 states.

**Response:** DEQ thanks you for your comment. Pooling, as adopted in the ACC II ZEV regulation, allows manufacturers to manage year to year fluctuations in annual vehicle volumes, especially across different states, in the early years of ACC II and still allow for full compliance, while maintaining the overall stringency of the regulation. Thus, this flexibility helps reduce compliance burdens, ZEV market development, and ultimately improve access. As with many flexibilities, not every manufacturer may take advantage of the values that are offered, nor are they required to do so.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 706

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## **Suggested Change #76: ZEV compliance - early compliance credits should be paired with increased stringency**

**Description:** Early Compliance Credits can be a powerful tool and an important part of the regulation to accelerate ZEV sales and emissions outcomes. However, rather than simply being used as a concession to automakers, they should result in the continued raising of the bar by adjusting the stringency accordingly.

**Response:** DEQ thanks and disagrees with this comment. The primary purpose of early compliance values is to incentivize manufacturers prior to the start of the new regulation requirements, and a potential way to bring up sales if setbacks, such as supply chain disruptions, continue. Additionally, early compliance values could produce emission reductions earlier for the light-duty sector. Early compliance vehicle values reward progress above current market shares, and thus is calibrated to award value depending on sales averages in states with greater or lesser current market development – thereby rewarding progress in states still coming up to speed, or accelerated progress in more developed markets, while not diluting overall regulatory requirements.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 706

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## **Suggested Change #77: ZEV compliance - Add a new credit value to allow 0.5 credit for ZEV efficiency through the 2031 model year**

**Description:** DEQ should promote ZEV efficiency. Efficiency lowers vehicle production costs and purchase prices by reducing the number of batteries needed to achieve a targeted range. Fewer batteries lower vehicle curb weight due to smaller battery packs (battery modules are generally the heaviest and costliest component in an electric vehicle), which can thereby further reduce the required cell count to achieve a desired range. Furthermore, fewer batteries reduce the cost of the battery pack itself by lowering demand per vehicle for lithium and other critical materials. Efficiency consequently reduces electricity grid impacts, upstream emissions, and the amount of additional energy resources needed. It also reduces demand for lithium and critical materials, along with potential supply chain bottlenecks.

**Response:** DEQ thanks you for your comment. As a Section 177 state, states that choose to adopt California's rules must do so identically. Oregon may not make modifications, including a new credit value to allow for ZEV efficiency.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 706

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## **Suggested Change #78: EV adoption - state should prioritize EV purchases for state fleets**

**Description:** The rules should consider adopting state fleet requirements equivalent to or greater than the requirements in ACC II to ensure consumer acceptance.

**Response:** Thank you for your comment. This comment is outside the scope of this rulemaking, but DEQ notes that Oregon's Senate Bill 1044 (2019) directs the Oregon Department of Administrative Services to lead by example by purchasing or leasing ZEVs and adopting policies and rules to promote the use of ZEVs.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 701

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## **Suggested Change #79: Electrical grid - conduct a review of the electrical grid resiliency and make home and public charging affordable and convenient**

**Description:** A thorough review of Oregon's electric grid to determine the viability of expanded access in both the near- and long-term makes strong practical sense. Public confidence in the resiliency of the grid will only help spur faster EV adoption. Failure to provide consistent service, particularly when the majority of EV charging is done at home, could be devastating for increased EV adoption, both for the light- and heavy-duty vehicle sectors. We suggest that as part of the review, the state commit to a transparent dialogue with the utility commission and energy companies about making home and public charging affordable and convenient. In addition, an education campaign about the different types of charging systems (L1, L2, DCFC) and suggestions about prime charging times to lessen the load on the grid should be addressed.

**Response:** Thank you for your comment. Utilities are already looking at increased EV charging through planning processes such as through their Integrated Resource Plan and Distribution System Plan. These planning requirements are overseen by the Oregon Public Utility Commission and are essential to ensuring the investor owned utilities ready to meet loads as demands on the system evolve over time. Other utilities across the state are also planning for and incorporating EV charging into their Integrated Resource Plans. These plans analyze various load growth scenarios that include forecasted EV adoption and how the utility will have the power and equipment to prepare for the load increases that come with EV adoption. Utilities, such as Eugene Water and Electric Board, have conducted an Electrification Impact Study to study the impacts of widespread electrification. It concluded it has near term capacity to handle additional load from electrification, but under the highest forecasted electrification rates, it might have to purchase additional power resources or build additional infrastructure to meet electricity needs.

**Response Type:**

**Comment IDs linked to this Suggested Change:** 701

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## **Suggested Change #80: Health benefits - Rules provide health benefits from reduced air quality emissions**

**Description:** Exposure to toxic tailpipe pollution such as NOx, Particulate Matter (PM), and Ozone is linked to higher rates of premature death, cancer, heart disease, and breathing problems like asthma in kids and adults. The American Lung Association's State of the Air Report Card gave Oregon failing grades for nearly all counties where data was collected and has made ACCII adoption one of their top recommendations for state action.

**Response:** Thank you for your comment. DEQ agrees that the proposed rules are expected to provide significant health benefits. Communities across Oregon, including the Portland-metropolitan area and the Rogue Valley have experienced increasing levels of ozone in recent years. Reducing these emissions will provide a benefit to low-income communities and communities of color, who are often disproportionately impacted by transportation pollution due to their proximity to roadways.

DEQ evaluated the anticipated health benefits using EPA's CO-Benefits Risk Assessment (COBRA) model. On-road mobile source emissions are reduced while emissions from generating additional electricity will increase. However, these emissions will be eliminated by 2040 when Oregon will be supplied with zero-carbon electricity as HB 2021 (Clean Energy bill) is implemented. Overall, the net benefit of the emission changes is \$12.96 million dollars. As a result of these reductions, Oregon can expect to see reduced mortality with up to 150 fewer premature deaths, 34 fewer hospital and emergency room visits and 8,760 fewer lost work days.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 22, 731, 733, 734, 13, 24, 15, 18, 721, 23, 25, 12, 11, 16, 19, 20

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## **Suggested Change #81: Medium and heavy duty vehicles should be electrified instead.**

**Description:** Do not follow California's EV mandate for light personal vehicles but instead only focus taxpayer dollars on electrifying urban heavy duty vehicles like refuse trucks, public transport, and all school buses (even outside urban areas) to reduce cancer causing emissions in all urban centers across Oregon.

**Response:** Thank you for your comment. In 2021, Oregon adopted the Advanced Clean Truck Rule (ACT). The ACT rule requires medium and heavy-duty vehicle manufacturers to produce and deliver for sale a certain percentage of ZEVs based on their overall vehicle sales. The percentage requirements vary by vehicle class in which Class 2b and 3 trucks must be 55% ZEV, Class 4-8 trucks must be 75% ZEV, and Class 7-8 tractor trailers must be 40% ZEV by 2040. The ACT rules help accelerate the the medium and heavy-duty vehicle sector to more zero emission vehicles and ensures there will be ZEV vehicles available in the years to come.

Besides requiring manufacturers to ensure there are medium and heavy duty zero emission vehicles for people to purchase, DEQ is working to help accelerate the transition to zero emission vehicles. For example, under Oregon's Clean Fuels Program, utilities and infrastructure providers can earn credit under Oregon's Clean Fuels Program and monetize those credits for future medium and heavy duty EV infrastructure development or vehicle purchase. DEQ is also launching a \$15 million pilot program to build out medium and heavy duty vehicle charging infrastructure projects.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 145

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## **Suggested Change #82: Economic impact - transitioning to EVs means less dependence upon global petroleum interests**

**Description:** Transitioning to electric vehicles is a significant economic win for Oregonians. We would no longer be held hostage by global petroleum interests and the astronomically high cost of gasoline but would switch to a much cheaper, cleaner fuel.

**Response:** DEQ agrees and thanks you for your comment.

**Response Type:** no, we did not make changes to address this comment

**Comment IDs linked to this Suggested Change:** 459, 711

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