



State of Oregon Department of Environmental Quality

# Written Comments

## Advanced Clean Cars II Rulemaking

### Advisory Committee Meeting 1

This document is a compilation of written comments received related to the first meeting of the advisory committee for the Advanced Clean Cars II Rulemaking held Aug. 30, 2022.

The comments compiled here are for the Advisory Committee's consideration. The official public comment period for the rulemaking is anticipated in late September through October 2022, when DEQ plans to propose draft rules for public input and comment.

**From:** [Alicia Zinni](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** DEQ Vehicle Proposed Rulemaking  
**Date:** Sunday, September 4, 2022 10:56:19 AM

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Please accept my comments regarding the DEQ proposed rulemaking on electric vehicles.

This proposed rule is ahead of the technology. Batteries do not operate properly in cold climates. Having to heat garages defies the savings in greenhouse gasses that electric vehicles might bring. Most areas east of the Cascades experience below zero temperatures in winter. The rules must exempt Oregon residents in USDA agricultural growing zones 4, 3, and 2.

We also don't have the electric infrastructure to charge these cars. Infrastructure development must be addressed by the rule. Tier the percentage of electric vehicles to the amount of KW-hour production available in the state.

Also, disposal of used batteries must be addressed by the rule. A 1000-pound lithium battery is an environmental hazard and its proper disposal must be addressed.

Thank you - Alicia Zinni

**From:** [Amanda Case](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Electric vehicle mandate  
**Date:** Sunday, September 4, 2022 11:16:24 PM

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The idea that Oregon will follow suit by issuing an electric vehicle mandate similar to California is terrifying.

1) the environmental impact for the manufacturing of electric batteries and the subsequent recycling and disposal is extremely important to understand. These damages to our environmental are huge and must be addressed before forcing a damaging hand. Look at how much damage is created by mining for the battery materials and tell me how that is "green"?

2) our electrical grid can not handle such a drain. Look at California! Two days after their mandate announcement they announce rolling blackouts and instructions to "not charge their vehicles"! Oregon does not have systems in place for that many electric cars. And most homes and neighborhoods were not built to take that much of an electrical draw.

3) rural Oregon will suffer!! Not only is the framework not in place but the cost of electric vehicles are not in an average budget, particularly in the farming industry.

There are other ways to help improve environmental impacts. Mandating electrical vehicles that still hurt the environment on a grid that cant support them will only hurt our Oregonians and show how disconnected you are from the people who live here. Stop making decisions under the false badge of "green" for those who are not educated enough to know how harmful these choices can be.

Amanda Case  
Oregon resident for 40+ years



September 7, 2022

DEQ Advisory Committee  
4026 Fairview Industrial Drive SE  
Salem, OR 97302

**Subject: Support for Oregon Adoption of the Advanced Clean Cars II Rule**

Dear Committee Members,

On behalf of the American Lung Association, I am writing to urge you to take a critical state clean air action: adopt the Advanced Clean Cars (ACC) II program. Transportation continues to be a leading source of harmful emissions threatening the health of communities across the United States and is the leading source of greenhouse gas emissions in Oregon. Zero-emission vehicle (ZEV) rules like the ACC II program will provide much-needed reductions in air and climate pollution to protect the health of Oregonians.

The American Lung Association's [State of the Air 2022](#) report found that Oregon is home to several of the most particle-polluted cities in the United States. Air pollution can cause negative health impacts such as asthma attacks, heart attacks, and other lung and cardiovascular diseases. This is especially true for communities of color – the report also noted that a person of color in the U.S. is 61 percent more likely to live in a community with a failing air pollution grade and 3.6 times more likely to live in a community with the worst air quality. Therefore, we need to transition Oregon to ZEVs to provide critical health benefits to our residents and especially to communities suffering the most.

***We urge the DEQ to adopt the Advanced Clean Cars II standards to clean up the combustion-powered passenger vehicle fleet on the way toward 100 percent ZEV sales to protect lung health and reduce carbon pollution.***

The Lung Association's [Zeroing on Healthy Air](#) report found that Oregon will benefit from a widespread shift to zero-emission transportation and electricity. We found that this transition from 2020 to 2050 will result in \$2.7 billion in public health benefits for the state including 242 premature deaths avoided, 5,600 in asthma attacks avoided, and 28,300 in lost workdays avoided. The ACC II standards are a key component of ensuring these potential health benefits become reality in Oregon communities.

We urge you to approve the ACC II standards as soon as possible so residents can breathe healthier air. Please contact me with any questions at [Carrie.Nyssen@Lung.org](mailto:Carrie.Nyssen@Lung.org).

Sincerely,

A handwritten signature in cursive script that reads "Carrie Nyssen".

Carrie Nyssen  
Senior Director, Advocacy

**From:** [anna brocchini](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Proposal to ban gas powered vehicles  
**Date:** Monday, September 5, 2022 5:10:34 AM

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To: whom it may concern,

I do not agree with banning gas powered vehicles. In doing so you are taking away the rights of Americans to make their own decisions on what they can and cannot power their vehicles with. It's simply against our freedom of choice, and our constitutional rights.

Sincerely,

Anestasi<sup>e</sup> Brocchini  
Medford OR. 97501

[Sent from Yahoo Mail for iPhone](#)

**From:** [angela epperson](#)  
**To:** [2022 Levzhev \\* DEQ](#)  
**Subject:** Gasoline vehicle ban  
**Date:** Tuesday, September 6, 2022 7:54:37 AM

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It makes absolutely no sense to ban gasoline vehicles. Electricity for electric vehicles is mostly produced by fossil fuels. Gasoline gives A more stable and secure supply. The power grids cannot handle all electric vehicles. What's the point anyway the electricity doesn't make it self.

**From:** [Angela payant](#)  
**To:** [2022 Levzvez \\* DEQ](#)  
**Subject:** Banning of gas fuel vehicles  
**Date:** Sunday, September 4, 2022 8:52:22 AM

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To whom it may concern,  
In regards to banning the sale of gas fuel run vehicles I have one word, NO.

I understand we need to rethink how we move forward in a world where we are trying to reduce our carbon footprint but banning gas powered vehicles is not the answer. These electric vehicles are not the clean energy our politicians keep cramming down our throats. The amount of destruction and energy that goes into manufacturing the batteries that supply the power for these electric vehicles should give anyone pause. And what of the disposing of these batteries once they go bad? We need to find a balance in utilizing all sources of energy. To close the door on the sale of gas powered vehicles will only create a new environmental crisis. Look at what happened in California just last week when they banned the charging of all electric vehicles during certain hours due to the strain on their already weak power grid.

Please just stop. We need to think these things through and come up with a balanced and fair solution not just a knee jerk solution that hasn't been thought through.

Angela Payant  
Medford, OR  
97501

Sent from my iPhone

**From:** [Arlene Sarver](#)  
**To:** [2022 Levzhev \\* DEQ](#)  
**Subject:** electric vehicle proposal  
**Date:** Sunday, September 4, 2022 8:49:16 AM

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I urge you to not follow California's plan to cancel allbut electric vehicle sales after 2035. The plan is ill conceived, unworkable, and divisive. Many Oregonians are not in a position financially to purchase or maintain an expensive electric vehicle. The value and impact on the environment is wrongly understood and heavily propagandized. The electric grid won't support recharging as evidenced by the recent request to Californians to please don't recharge your vehicle following closely after the mandate to cancel gas powered vehicle sales in 2035.! What ! increase sales and numbers of use, but don't charge them. Where is common sense, seems uncommon anymore.



**From:** [Ausa Hylton](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Banning gas powered cars  
**Date:** Tuesday, September 6, 2022 10:25:54 AM

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## To Whom It May Concern

Many people cannot afford to buy a new electric car. Oregonians should have a choice and a say in this matter of banning gas cars.

In California this summer people with electric cars were told they couldn't charge their cars because the grid couldn't handle it. Now imagine not being able to go to work because of this. Maybe that is fine if you are rich elites but what about the average person?

It's not really helping the environment on a global scale. It just has the illusion of it. Will you guarantee that cobalt for batteries is ethically mined and does not use child labor as the demand for electric cars goes up?

Some things to think about:

- California's new Advanced Clean Car policy may be good for California, but that's not the case in Oregon. California ranks the 2nd highest contributor to GHG emissions at 358.8 million metric tons annually whereas Oregon contributes 38.3 million metric tons annually. Out of all states, Oregon has the 5th lowest carbon emissions per capita. As a reference, China contributes over 9.9 billion metric tons of GHG emissions annually. Globally, 33.6 billion tons of CO2 is emitted annually.

- **Oregon contributes .11% of the worlds emissions.**

- **Oregon is already a green state. Oregon's DEQ's Director Richard Whitman, was asked what impact on global carbon would occur if Oregon were to reduce its' emissions to zero, he responded: "Rep. Brock Smith, you are correct that Oregon's portion of global carbon emissions is, I'll use the word minuscule."**

- **Oregon's Global Warming Commission's 2020 report states: "Oregon's per capita sector-based emissions are 32 percent lower than U.S. per capita emissions, having dropped by 25 percent since 1990. "**

- **Oregon has inadequate charging infrastructure. Power grids are already strained, this policy will add more strain with vehicles requiring charging.**

- **One of the biggest challenges to EV adoption is the battery production process and supply chain. New mining and supply chains are needed to support EVs. There are a lot of minerals required to produce batteries for EVs, as a result, there's a lot of mining and transportation of materials involved. Electric vehicles lose charge when parked although it is minimal, it can add up over time. Green Car Reports suggest you charge your battery at least 80% before parking the car. Electric cars can travel less distance.**

- **Lithium ion batteries used in EVs also do not perform as well in cold temperatures,**

which can lead to further range reductions. Their general findings are that drivers of an average EV might see about half of the manufacturer's official range. If the average range is 200 miles per charge, the range will decrease to 100 miles before required charging in cold temperatures.

**Electric cars are more expensive, and battery packs may need to be replaced-**  
The battery packs within an electric car are expensive and may need to be replaced more than once over the lifetime of the car. All-electric vehicles are also more expensive than gas-powered cars, and the upfront cost of all-electric vehicle can also be prohibitive. However, the fuel cost savings, tax credits, and state incentives can help to offset this cost overall if they are available.

**•Finite critical minerals and rare earth metals-**

EVs use about six times more mineral inputs than ICE vehicles. The IEA's forecast of 70 million EVs on the road by 2040 will be accompanied by a 30-fold increase in demand for minerals. There is no shortage of these resources underground, but rather a concern as to whether they will be extracted sustainably, in line with social responsibility governance, and in time to meet demand.

Thank you,  
Ausa J Hylton

**From:** John Headrick  
**Sent:** Thursday, September 8, 2022 1:16 AM  
**To:** SAKATA Rachel \* DEQ <Rachel.SAKATA@deq.oregon.gov>  
**Subject:** Upcoming Electric Vehicle Meeting

I understand that DEQ is discussing electric vehicles in a meeting on Sept 20.

May I strongly recommend that if fuel vehicles are prohibited that there be explicit options and exceptions available for wheelchair-lift-fitted minivans and other handicapped accommodations.

Wheelchairs and mobility scooters need to fit fully inside a vehicle to remain dry. No one should have to sit on a soggy cushion. A disabled person can not climb up into the cab of a truck, so an electric pickup truck is not a viable option.

It is not realistic to assume that the electric car manufacturers will be willing or able to engineer and build such vehicles, nor that they will cost less than my house. Typically, the people who need these accommodations are either subsisting on disability income or elderly with fixed incomes.

I used to care for the elderly, which is why this occurred to me.

Thanks for adding this question to the discussion.

Becky Headrick  
Newberg

**From:** [Ben Hintz](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Zero emissions  
**Date:** Monday, September 5, 2022 8:45:08 AM

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Until the power grid can comfortably sustain all elective vehicles and they become affordable for lower income Americans, this idea is not wise. California is already having trouble, not allowing people to charge their electric vehicles due to power shortages. I urge you to abstain from blanket policies that can hurt lower income Oregonians and be realistic.

Sincerely,  
A concerned tax payer

[Sent from Yahoo Mail on Android](#)

**From:** [Benjamin Roche](#)  
**To:** [2022 Levzvez \\* DEQ](#)  
**Cc:** [SAKATA Rachel \\* DEQ](#)  
**Subject:** Advanced Clean Cars Rulemaking Public Comment  
**Date:** Tuesday, September 6, 2022 2:45:40 PM

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I would ask that the Oregon DEQ consider an emergency stop on the implementation of further requirements to manufacturers that limit consumer choice until the power grid in Oregon can assure its users 100% reliability.

Current law in Oregon prohibits the construction of nuclear power all while policymakers are shutting down existing production from fossil fuels and hydroelectric. The wind turbines in the Columbia Gorge are leaking oil, killing birds, and suffering from deferred maintenance. Wind currently accounts for just 12% of our generation, and under 5% the consumption. Oregon Legislature projections rely on wind and solar to supplement the future needs however until we can prevent the environmental damage of oil leaks on hills of the scenic Columbia gorge, placing them off-shore out of sight and out of mind seems like a disaster we can avoid. The life expectancy of even the best solar panels is 25 years and we have yet to have come up with a recycling program on a commercial scale. Currently, almost all broken or expired solar panels go into landfill and experts have been warning for some time that more than 100,000 tons of modules will end up there by 2035.

The current average age of a passenger vehicle on the road is over 12 years, most Oregonians lower income scales who need reliable transportation are driving cars much older than that, yet the lifespan of an EV battery is only 10 years or 150,000 miles.

After considering the economic and environmental impact of EV's not consider the charging needs. The level 2 chargers require 40AMP of service. This is equivalent to the energy your electric oven uses; however unlike baking a pizza for 15 minutes, it will take as little as 5 hours, or as long as 12 hours to re-charge an EV on a Level 2 charger. This demand on Oregon's energy grid will strain an already over taxed power grid. In 2019 the Northwest Power Pool Council projected a 32% loss load probability for 2024. This was without the added demand EV's will place on our power grid.

Without a reliable and steady source of electricity, the phasing out of internal combustion engines is premature. Without an ecologically sound solution to maintaining and growing wind and solar generation, expecting those sources to replace fossil fuels is an environmental disaster in the making.

Ben Roche  
Albany, OR

**From:** [Beth Miller](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** No to electric car mandadte  
**Date:** Saturday, September 3, 2022 9:53:24 AM

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Hi,

I would like to respectfully request the electric car mandate be turned down. Oregon is diverse in landscape and while electric cars might work in Portland proper, the rest of the state it doesn't work well. It's not practical.

Add the cost of new batteries, the impact mining for the items to make the batteries has on the environment, and what happens to the batteries after they die, again another very negative impact on the environment. This is not something that should be mandated. Let people be free, let them make their own choice.

Thank You,  
Beth Miller

**From:** [Beth Nazaretta](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Electric Car Rule for 2035  
**Date:** Tuesday, September 6, 2022 1:02:54 PM

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To Whom it May Concern,

I am writing today to speak on behalf of my family. We moved to Oregon 10 years ago from the state of California. There were many many reasons for leaving the state of California. None that I want to see happen here in Oregon. Unfortunately there seems to be a trend happening within our Oregon government to adapt the same thinking and rules as California.

On the matter of electric cars, personally I do not see the benefit of making a rule that all cars need to be electric. The amount of fossil fuel and resources it takes to make an electric car battery is high and the batteries only last for a limited time. What happens to the battery when it will no longer hold a charge? How does it get disposed of? How does this affect the earth? Are we putting more contaminants into the ground to leach into our soil that will affect our food and water?

Furthermore the strain it will put on the power grid will be too great. With every home having to charge an electric car along with air conditioning, appliances, lights etc. The current system can not support this. If the plan is to upgrade the system then you are now using more resources and how are you disposing of the current resource? Can you see that this will be creating more problems and issues for generations to come. The electric companies for years now have asked people to reduce their usage for many reasons especially during the summer. What happens when the electric company has too great of a strain or a power outage and they can not provide the power. This is already happening. There will be many who will be very angry and they will be stuck. What happens if there is a medical emergency and people can't use their electric car they didn't want but are forced to own and use because of their state rule and it doesn't have enough charge to get to medical help? What will these retirees do on a limited income who can not afford a new car let alone an electric one? On top of that charging one. How will the low income society afford to accommodate this rule for all electric cars? Most of them already need assistance to pay for their gas, electricity, food etc. How is this inclusive for them?

I am a very concern citizen and I am really struggling to understand why so many are pushing for all electric cars and putting so many restrictions in place. Forcing people to do certain things that don't make sense or logic. Many are so focused on solving "something" but fail to see the title wave behind their decisions. I am a mother and I am greatly grieved for the future of my children because of the "policies" and decisions our government is making. Please do not put this rule in place for all electric cars by 2035.

Thank you for your time and your service,  
Beth Nazaretta

**From:** [Bethany Fincher](#)  
**To:** [2022 Levzev \\* DEQ](#)  
**Date:** Sunday, September 4, 2022 8:39:34 PM

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Oregon is targeting low income families by eliminating gas powered vehicles. Many people cannot afford a new car and all the battery replacements that come with an all electric vehicle. Our power grid will not even be able to support this. I am severely disgusted by the continual onslaught on low income families when Oregon has some of the lowest emissions in the country. This is out of control.



**From:** [Bev Pownall](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Date:** Tuesday, September 6, 2022 5:28:16 PM

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To whom it may concern:

I am writing to you today to voice my opposition to any regulation that would ban the sale of gas and diesel powered vehicles.

It would be extremely irresponsible to pass a law restricting the sale of petroleum powered vehicles for the following reasons:

1. The electric utility infrastructure does not currently exist to meet the increased demand that would be created by all Oregonians driving electric vehicles.
2. In the event of major natural disasters such as fires and earthquakes, electric vehicles are completely useless.
3. This would unfairly impact rural communities. The technology of battery capacity does or exist to meet the needs of those who live in remote areas for either distance or load capacity.
4. The vast majority of Oregonians care deeply for our environment and can be trusted to make their own decisions about what vehicles that they need.

Thanks for taking the time to review this comment.

Bev Pownall  
Albany Oregon Sent from my iPhone

**From:** [Bill&Bev](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** moving to EV by 2035  
**Date:** Wednesday, September 7, 2022 8:39:33 PM

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I would like to comment on the possible ban of gas-powered vehicles by 2035. Although I agree that we should begin to plan for greater EV use, it will take a long time to solve all of the possible problems associated with EV's, one of which is the cost of these vehicles being prohibitive to many citizens. Also, battery production has to be planned for and electrical generation plants must be built, in addition to many other considerations. There seems to be such a rush to change to electric vehicles that I am afraid we will find ourselves in a real muddle and in the midst of total chaos as a result, even though I agree with the idea of electric rather than gas-powered cars. We need to allow enough time to plan!

Respectfully submitted,

Beverly J. Ratajak

**From:** [Bill Buhrig](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Electric Vehicle Mandate  
**Date:** Monday, September 5, 2022 5:14:50 AM

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The purpose of this submission is to express my concern for the mandate that Oregon move exclusively to electric vehicles. My concerns are two-fold.

1. Cost and availability. It does not appear that we are anywhere near the adoption of electric powered vehicles on a required basis. The inefficiencies of revising our current system outweigh the drawbacks. As long as we have a cheap food policy in this country, the production and distribution systems will not withstand this sort of turmoil.
2. Sourcing of electricity. It pains me to think that electric cars appear to be magically powered by simply plugging them in. The power needed to charge these vehicles needs to be generated from somewhere. This feels like "milk comes from the grocery store". There is a process to having electricity available and we are not nearly wind/solar sustainable enough to throw out the dependence on fossil fuels.

Mandates without viable options are not going to be received well and the consequences will be very difficult to mitigate. While I do not oppose the concept, this is not the correct manner to approach it. Please reconsider the adoption of this through the rule-making process.

Thanks,

Bill Buhrig

Vale, OR

**From:** [Bill Gooding](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Electric Car Mandate  
**Date:** Saturday, September 3, 2022 6:10:36 PM

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Restricting the sell of gas propelled vehicles to Oregonians is unacceptable. Let the consumer have the choice to buy electric or gas vehicles. Choice is what makes this country great. The government dictating to the people on what we can choose is more like communism not capitalism. Also what is the carbon footprint to produce an electric car. The mining of the lithium for the batteries requires lots of big equipment to mine the ore. Lots of diesel to operate that equipment. Please educate yourself on what the carbon footprint is to manufacture one of these vehicles. I don't think they are as good for the environment as we are lead to believe.

Thanks for your time.

Bill Gooding  
Sent from my iPhone

**From:** [Blaine & Kathryn Nofziger](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** No to the electric vehicle mandate  
**Date:** Saturday, September 3, 2022 11:51:49 AM

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Hi,

My name is Blaine Nofziger and I am a fourth generation alfalfa farmer from Christmas Valley. I am opposed to the electric vehicle mandate that is currently being discussed. While the assumed benefits of going to electric/hybrid vehicles may have some benefits, most of which I am skeptical of, this is being implemented in much too short of time frame. I worry that while the passing of this mandate will look great to some on paper but when the year 2035 rolls in those of us who live in rural Oregon will be the ones who are hit unfairly with the burden/cost of compliance. Since my family and I are located in a town of 1,000 people we travel to Bend 3 to 4 times per month for groceries, Dr. visits, and dental appointments. This is a roundtrip mileage of 220-250 miles a trip. When an average daily commute in the city is under 50 miles an electric car makes more sense. In my searching I have found there are some electric vehicles that can't even make it to this 250 mile range.

My next question is how the electrical infrastructure can make this large of a leap in that amount of time? Today for every tanker load (9,500 gallons average) of fuel that is delivered into a gas station it will produce an average of 241,300 miles of driving. This is based on the latest all vehicle average mpg, of 25.4 mpg, that I found listed on the EPA website. This means that an additional 241,000 miles worth of electricity needs to be carried on our electrical grid to offset every tanker load of fuel delivered. This also brings up another question. What do you do about the idea that 48 percent of Oregon's electricity is generated by petroleum products 26.5 percent from coal and 21.5 from natural gas? I thought that this whole mandate was supposed to eliminate the use of fossil fuel?

So in closing, I am strongly opposed to this mandate. We as Oregonians deserve better than to unfairly mandate and punish those who live outside of city centers. If the state would like to incentivize the purchasing electric vehicles that is fine by me but the mandate is unfair in my opinion and is another example of government overreach. Oregon has been ranked 46th in the overall personal and economic freedom in the latest report put out by CATO Institute. This would be one more of those examples that my freedom of purchasing a vehicle of my liking will be controlled by the government.

Please kill this in committee.

Thanks,  
Blaine Nofziger

**From:** [Susan Mayer Schmidt](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** EV Requirement  
**Date:** Wednesday, September 7, 2022 1:09:18 PM

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My husband and I are adamantly against Oregon following California's ridiculous law requiring everybody purchasing electric vehicles starting in 2035. It's going to create a chaotic mess on highways not to mention the problem disposing of the dead battery's, the production of batteries, the high cost of replacing a dead battery. Probably the first objection is being told we have to. That's an infringement on our freedom. There aren't enough charging stations. It will cause an overload on the electrical system. California already is requiring people to only charge their cars during certain hours and to not use their AC during certain hours. Gavin Newsome is crazy. He has ruined the state of California with his insane ideas. PLEASE don't let that happen to our beautiful state. You can't assume everybody is going to be conscientious about keeping their battery charged. It's going to be a mess. It just can't happen!!

Personal examples: Our daughter has a 2018 Chevy Volt and when her battery dies, a replacement will cost more than the cost of a new car.

A few days ago, our son went to the local Arby's and couldn't use the drive thru because there was a Prius stuck with a dead battery. They weren't able to push the car forward or backward and had to wait for a tow truck.

Bob and Susan Schmidt  
Corvallis, Oregon

Sent from my iPad

**From:** [Brenda Frketich](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Oppose 100% electric vehicle standards  
**Date:** Wednesday, September 7, 2022 2:12:43 PM

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To whom it may concern,

I'm writing today to ask you to oppose the 100% vehicle standards like California. As a rural resident in Oregon this burden would be much too much for us as residents and as farmers and business owners.

The cost of electric vehicles, which remains much higher than their fuel-based counterparts, is out of reach for many farm families, who are seeing ever slimmer margins in the face of increased regulatory pressures from the state.

This rule requires electrification before the infrastructure is available, particularly in rural areas, to support electric vehicles, particularly for work trucks that are used exclusively in remote areas of the state, miles from any charging station. Most farms and ranches do not have EV charging capacity on farm, and do not have the resources to install such facilities.

This rule represents another burden on rural communities from an agency who fails to understand the different vehicle needs in rural areas than urban areas, where charging infrastructure is more readily available.

Please not to adopt California's anti-rural 100% electric vehicle standards.

Thank you,  
Brenda

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Brenda Frketich  
Kirsch Family Farms, Inc.  
St. Paul, Oregon

**From:** [Brian Randolph](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Advanced Clean Cars II Proposal Feedback  
**Date:** Tuesday, September 6, 2022 9:21:13 AM

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To Whom it May Concern,

I believe the policy of banning gas vehicles is a dangerous road to go down. While it's easy to think we should all be driving electric vehicles there are many areas where electric vehicles still just aren't suited to life. The first area is cost; Electric vehicles cost far more than gas, and for those in Oregon especially, this could be near impossible to make up. Rent prices and inflation are already out of control, with people spending over half their disposable income on just food and rent/mortgage alone. I make a decent living at about \$90k a year, after taxes, health care, and retirement gets pulled out by my employer I'm left with roughly \$3600 a month. \$1500 goes to mortgage, then there's car insurance which is mandatory since public transit doesn't go to the airport where I work. Cell phone, internet, and utilities. At the end of the day I'm down to \$1000 for food and to take care of my kids needs such as clothes, school supplies, etc. for the month, I also make too much money to qualify for any sort of "low income" support, it's like that weird area where you make too much for government help but not enough to actually feel well off. If it wasn't for the fact that my son is living at home and contributing some money, I wouldn't be able to afford my current car payment. Think then of the fact that my current vehicle will lose value and I'll be left with a vehicle I worked hard to pay off which is supposed to be an asset, but instead worth nothing.

The next issue is battery life and vehicle performance. Many Oregonians enjoy activities like camping, boating, and other outdoor activities. These activities typically require a drive of some distance. Since finding an EV with over 250 miles is rough, imagine the impact when trying to drive to a camp site 500 miles away. Further, towing a vehicle will make this a painful process if not impossible. The cost of an EV which can tow and have reasonable distance on a single charge is even more ridiculous than a standard EV for in town commuting. Finally, EV's do not perform well in cold weather. Nobody wants to risk getting stuck up on Mt. Hood because their car won't start in the cold temperatures after a day of skiing. Or worse, have the car run out of charge and be stuck on the side of the road in the snow. You won't be able to get someone to bring you a can of gas to get back on your way.

The final issue I'd like to point out is supply. Manufacturers can't keep up with supply at all, even without the mandates. While you might think supply will get better as more states pass laws and they ramp up production. However, the problem world wide is labor shortage, not manufacturer desires. These problems won't get better with birth rates in decline around the world. The baby boomers retiring in mass numbers, and younger generations standing up against working ridiculous hours for minimum pay. We are looking at shortages in supplies across all industries over the next decade at least until companies get the message and start paying better. Add in the serious risk of a depression rivaling that of the great depression and consumers ability to meet your mandate could be impossible.

I understand that climate change is an issue, but you need to consider how people can actually meet these requirements. Consider the damage you are doing to people's lives by forcing them to spend their money on something specific. What if I told you, old houses damage the climate, you must buy a home newer than 2020 or demolish and rebuild your current one? How would you (Assuming you're not an overpaid politician making 150k+) be able to afford that? Why should you be forced to destroy what you own and spend money on something new? The



government shouldn't force people into spending money, the government can encourage it but shouldn't force. Oregon is in this position because they never adopted real meaningful public transit. No subway like east coast cities or Korea, no trains like Japan. Bus systems are terribly inefficient, thus people buy cars. At the end of the day though, cars don't put out half the pollution of major corporations, trains, semi-trucks, or airplanes so the impact will be negligible. We need hydrogen engines for corporate use to really reach climate change goals. Electric will never cut it. Look at South Korea for a great example of Hydrogen and where we should have been 7 years ago. Instead, America's corporate greed politics have allowed Tesla to buy our country into a bad technology.

If you want me to switch gas for electric, then the state should pay for the difference in price between a citizen's current vehicle trade in value and a comparable model EV. Including figuring for things like if the current vehicle can tow and drive 500 miles on a single tank of gas, the new EV should be able to do the same thing. I shouldn't have to pay a dime for the governments policies.

Sincerely,  
Brian Randolph

**From:** [Brian Taylor](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Date:** Monday, September 5, 2022 5:27:29 PM

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I object to the policy of doing away with gasoline powered vehicles in the state of Oregon. First, there is not enough power in the grid to support this, even with improvements by 2035. Second, what happens to the vehicles when all the batteries go bad. We will create a bigger trash problem of cars than the problem itself. Third, Oregon already is one of the cleanest states in regards to emissions. Oregon cannot be responsible to make up for China, who is the worst offender for emissions. For these reasons and others, I am opposed to doing away with gasoline powered vehicles in Oregon.

**From:** [Bruce Boyle](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Ban on gas engines  
**Date:** Wednesday, September 7, 2022 8:32:13 AM

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You and the state of Oregon along with California do not have the infrastructure or the ability to deal with charging ev cars. California is doing power blackouts as this is written. That will work well with ev cars.

As important the majority of car owners own used cars and can not afford a new car let alone the cost of a new ev car.

And the products needed to build an ev battery are in short world supply and going to see cost increases that will keep the cost to build increasing thus keeping ev s unaffordable to the majority

Your MANDATE which is forced socialism will continue to destroy the middle and lower income citizens of this country

Also it takes coal and fossil fuel to charge an ev.

You are misrepresenting the facts and lying to all and yourself that this will help the environment

Bruce Boyle

Sent from my iPhone

**From:** [Bryan Schmidt](#)  
**To:** [2022 Levzhev \\* DEQ](#)  
**Subject:** electric automobile mandate REJECT IT PLEASE  
**Date:** Monday, September 5, 2022 8:12:34 PM

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To Whom It May Concern,

I ask that the proposed electric-automobile mandate be rejected. The technology and cost are not there yet. A mandate would be premature. Also, did you know that plants need CO<sub>2</sub>? Co<sub>2</sub> is the gas of life. I think having clean exhaust is important, and by the way, if it matters, much of the electricity is dirty, so what is to gain?

Respectfully,  
Bryan Schmidt

**From:** [Bryan Parks](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Rule making regarding the latest DEQ proposal  
**Date:** Tuesday, September 6, 2022 4:27:57 PM

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I was notified concerning the decision you are about to make regarding the latest DEQ proposal to submit my personal comment as a concerned Oregon voter. *This rulemaking is central to DEQ's efforts to reduce air pollution and transportation-related greenhouse gas emissions. Oregon currently implements a Low Emission Vehicle/Zero Emission Vehicle program that requires manufacturers to deliver to Oregon a certain percentage of zero emission vehicles through the 2025 model year. This rulemaking proposes to adopt by reference California's Advanced Clean Cars II rule, which will transition all new light-duty vehicle sales in Oregon to zero-emission by 2035. The rule also includes updates to the LEV program rules to ensure they are identical to California's current light duty vehicle emission standards. It doesn't make sense (illogical) to make such a move which will further strain our inadequate, unreliable power grid, or forcing the citizens of this state to make a move to EVs when our terrible economy is already straining household resources and driving us further into debt. Look at CA already passing similar legislation then immediately telling their citizens not to charge their EVs. How stupid can you people possibly be? I oppose any legislation removing our ability to continue to rely on our already owned internal combustion engines, and suggest you push back against the Biden Administration instead demanding the immediate reopening of our pipeline shut down his 1st day in office, and a return to the energy independence we began to enjoy under the Trump administration.*

Since public Comment is due by September 7th regarding rulemaking that could ban internal combustion engine powered vehicles in Oregon, similar to California's recent ban and have decided to add my voice against the proposal you are about to make a decision on in this regard

A number of issues exist with the transition to EV's, the lifespan of the batteries, the lack of a reliable replacement electrical generation source as coal plants continue be taken off-line, and the environmental impact that wind turbines and solar panels have long term that are yet to be realized.

Wake up, look at this with reason and logic and turn from this present direction immediately!

Sincerely,  
Bryan Whitmore-Parks  
Linn County resident  
Sweet Home Oregon

**From:** [Scott Davis](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Proposed rule  
**Date:** Wednesday, September 7, 2022 7:17:46 AM

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To Whom it may concern,

I'm a sixth generation Oregonian and I love my State.

I respectfully ask that you consider all the effects of the battery waste and the possible lack of reliable electrical generation sources. Will we be able to sustain all the power needed for these vehicles?? where will the used batteries go?

I'm concerned this will raise even more problems for Oregon like it is in California.

Lithium mining does huge damage to the environment.

This rule would be a huge abuse by government.

C. Scott Davis

Lebanon, Or 97355

**From:** [Carolyn Webb](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** electric cars  
**Date:** Wednesday, September 7, 2022 4:57:21 PM

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I don't want to buy an electric car. We don't want to buy the batteries from foreign countries that supply the ingredients to make them. We don't want to have to dispose of the batteries also.

**From:** [Caryn Steward](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Please don't do this!  
**Date:** Wednesday, September 7, 2022 9:26:08 AM

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NO NO NO!!!  
Don't mandate my car choices!



**From:** [Case Escher](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Advanced Clean Cars II Public Comment  
**Date:** Monday, September 5, 2022 6:41:35 AM

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There are very real, practical, and serious deficiencies between gasoline powered and all other alternative powered vehicles that must be addressed and resolved before considering passing a bill like this. A few of these deficiencies include, but are not limited to:

Range  
Time to refuel  
Safety  
Cost

To ban the sale of gasoline powered vehicles, there must be an adequate alternative which offers, at a minimum, reasonably similar features and functionality at a similar cost.

To pass such a bill now, even with a target date 13 years in the future, reduces the legislative process to little more than political theatre and environmental virtue signaling.

Instead, why not pass a law to incentivize the research and development to close the gaps listed above, putting OR jobs at the center of such an incentive, and let the free market do what it does best? Once that has been accomplished and the gaps are closed, THEN ban the sale of gasoline powered cars.

Respectfully submitted,

Case Escher  
Tigard, OR 97224

**From:** [cathy goodrich](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Date:** Tuesday, September 6, 2022 3:38:55 PM

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please do not ban gas powered vehicles! horrible, very bad idea!

**From:** [Ceta Kelley](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Banning the sale of gas automobiles  
**Date:** Tuesday, September 6, 2022 12:46:45 AM

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As a current resident within the State of Oregon, I highly disagree and do not support this ban.

This indoctrination of forcing anyone to purchase a particular vehicle of the State's choice is tyranny.

EV cars are not sustainable.

Our power grid cannot withstand this added strain to our local infrastructure.

My family cannot be prisoners to charging and charging stations when traveling long distances.

This stance to ban a consumers right to choose is unacceptable.

Ceta Kelley  
Bend, OR

**From:** [Chad](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Advanced Clean Cars Rule public comment  
**Date:** Tuesday, September 6, 2022 3:08:55 PM

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It is amazing that this country has reached a point where banning and over regulating things is the initial reaction to a “problem” rather than allowing the free market’s to decide. You’re proposing to eliminate a product of great necessity to people and that provides long term solution’s to people’s needs. You’re arbitrarily making huge, and this cannot be understated, financial decisions for others that you are not going to have to deal with personally. I could die at least twice, paying for gas at the current rates, before I break even. The EV will need to be replaced. The cost of charging will continue to go up, just like gas does. Parts of the UK are actually paying more to charge then gas cars to fill. So, now a person has a huge car payment and high charge costs. How do you think the used car market is going to react when the warranty is out and they have huge car payment and battery replacement cost now? All this from an artificially created crisis, through poor policies and failure to deal with dictators, one of which will now supply all the lithium you’re going to need to build 100’s of millions of EV’s. You’re also removing life, liberty, and the pursuit of happiness from US citizens. I have the right to drive a car that I enjoy, not because it makes you feel better. So, let the free market make an EV worth buying, instead being tyrannical and inserting yourselves where it doesn’t belong. Or, let the citizens decide. Cause these policies are knee jerk reactions that have harmful effects on all of us.

Sincerely,

Chad

Sent from my iPhone

**From:** [Charity Scott](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Driving away from Gas Vehicles  
**Date:** Tuesday, September 6, 2022 3:57:15 PM

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Hello Oregon Government,

I write to you today as a plea to not be so quick to implement No Gas Vehicles or to not implement this at all. As a State, we will be shooting ourselves in the foot on this!

1. The grid!! No way our current grid can support all these electric vehicles, no matter how many extra you put in or upgrades you make. We will run into all sorts of Electricity issues that will not be able to support all these electric vehicles.
2. Electrical shortages, rolling brown outs and major blackouts, huge electric bills no one will be able to afford, tax increases to supplement for this program as it will never be on budget with unforeseen events and costly repairs.
3. Economy will take the hugest hit ever! Most people will not be able to afford an EV, then people will have issues getting to work, paying bills etc. You think we have a homeless crisis now!? Just wait!
4. Lithium Farming...NOT GREEN! Lithium Batteries...Not Green! Will we be using electric excavators to mine this lithium? Bulldozers consume a large amount of **diesel fuel** and consequently produce a significant quantity of CO2. What about disposal of these lithium batteries?
5. Stranded EV's all over the roads, Hwy and Fwy's. You cant just call AAA to bring you some gas nor can you tow most of these vehicles at all and some can only be towed on a flat bed. We will not have enough flatbeds or portable electric charging stations (ASSUMING THAT HAS BEEN THOUGHT OF) to keep up with all the stranded EV's blocking our roads, causing accidents or worse! Could you imagine having this issue on the 20 W/Santiam Junction or any roads like that here that are conman, not like that of CA. It would be chaos and lives lost for sure.

In closing, lets not be so quick to be like California. Let CA be the Test State for this and if it goes smoothly then we slowly move to follow suit. But, I ask you why would we follow suit when CA Air Quality and miles of thick layers of smog are for concern there? We do not have these same issues. I feel as a State, we are far away from the damage that CA has. We dont even do smog checks here and we want to automatically just roll over and do what CA does!? Just doesn't make sense. Lets just let Oregon be Oregon.

If anything give the people incentives to want to change their own mind to roll over to an EV. Tax breaks, free registration etc.

Thank you for your time,

"Coming together is a beginning; keeping together is progress; working together is success" -Henry Ford

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Charity Scott  
Bend, OR 97702

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From: Cherie Watson  
Sent: Monday, August 29, 2022 12:47 PM  
To: SAKATA Rachel \* DEQ <Rachel.SAKATA@deq.oregon.gov>  
Subject: Gas free car proposal

Dear Ms Sakata,

I am writing to you regarding the proposal being prepared by DEQ and being pushed by Gov Brown. I am voicing my absolute disapproval to this rule. I DO NOT believe you or any government entity has the power to tell me what I can drive or must purchase. There is a ridiculous amount of tax payer money being funneled into this crazy belief that electric cars are the be all to end all. Most of our electricity comes from fossil fuels yet you want to put further pressure on that with electric cars? My electrical bill is already sky high and I do not intend to spend \$15,000 putting in an electric charging station at my home or take 2 days to drive to my parents house in Idaho. (Not enough charging stations across state and certainly the existing stations do not give 100% charges unless you sit there for hours!). Please stop telling the citizens of Oregon what to do and how to spend our money. Please actually look into what goes into these battery operated cars and the amount of environmental harm the making of the batteries is doing all over the world. I do not have any hope that the governmental agencies actually give any attention or pay attention to citizen input at this point, but I have voiced it anyway. Please consider the needs of ALL of Oregonians before you declare this new proposal.

Sincerely,  
Cherie Watson  
Cornelius OR

**From:** [Christian Kruse CFP](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Banning internal combustion engines by 2035  
**Date:** Monday, September 5, 2022 11:01:49 AM

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I object to banning ICE by 2035 for several reasons:

1. Removing consumer choice should not be a government function except for the most extreme reasons of public safety.
2. I am unaware of any economic studies that indicate the financial cost of forcing consumers to use an EV vehicle. Indeed there are so many unknown variables as to cost and benefit that a decision cannot be made by rational means.
3. EV's are currently very expensive and thus, play things of the wealthy. There is no guarantee that EVs can be produced in an economical way. Where is the "equity" in such a policy?
4. With current battery technology, the environmental damage from mining to get the required materials for large scale EV's would far exceed any benefit rendering the environmental argument mute. Currently it would increase our dependence on China the way we were previously to Saudi Arabia.
5. Finally, there is no plan to create the electrical grid infrastructure need for such a policy.

Those who have put forward this idea have not thoroughly thought through the ramifications of such a decision.

Best Regards,  
Christian Kruse CFP  
Canby OR

Sent from [Mail](#) for Windows

**From:** [Christina Poteet](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** DEQ ban comment  
**Date:** Tuesday, September 6, 2022 2:51:00 PM

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I discourage you and your department from implementing a ban on gas vehicles. I'm a Oregon rural resident who is involved in farming as well as a restaurant owner. The ban on these vehicles will decimate our farming and small business industries. Electric vehicles are not the solution but rather the governments way to control Americans. Electric vehicles will burden our electric infrastructure and will cost Oregonians \$1000's of dollars every year. I will not comply!!!! I will not approve of any politician who thinks that this policy will be better for our State. You have already seen a mass exit from Oregonians and there will be more should this be passed. Businesses will close! Farming will be destroyed! Trucking supplies will stop! Logging will stop! YOU WILL DESTROY OREGON!!!

Christy Poteet, *Owner/Catering Director*

Lebanon, Oregon 97355

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\*\*Disclaimer - Any information sent regarding our catering services does not guarantee a booking. Only prearrangements made through written confirmation and/or deposits received and contracts signed will guarantee a scheduled booking.



**From:** [Kris Baron](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Banning Gas-Powered Vehicles  
**Date:** Wednesday, September 7, 2022 11:21:55 AM

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This is way too preliminary.  
There are insufficient charging stations as it is.  
Electric cars must be recharged frequently if a longer trip is planned.  
How is electricity produced? Much of it is from coal or gas.

Please thoroughly research the consequences, unintended or intended,  
before voting for something that will have very negative impact on  
the citizens of Oregon.

Chuck and Kris Baron

**From:** [Claire](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** No to Advanced Clean Cars rule  
**Date:** Sunday, September 4, 2022 10:55:33 AM

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To whom it may concern:

Please do not attempt to force Oregonians to purchase "electric" vehicles. Electricity runs on the very fuels we are claiming to be removing from the environment. Plus, these vehicles use materials collected through a vicious mining process that is harming the environment in different ways. Banning alternative sources of vehicles is not the way. Please do not follow through with this change.

Claire Young  
Medford, OR

Via Email: [LevZev2022@deq.oregon.gov](mailto:LevZev2022@deq.oregon.gov)

Department of Environmental Quality  
Attn: Advanced Clean Cars II Staff  
700 NE Multnomah St., Suite 600  
Portland, OR 97232

September 7, 2022

**RE: Advanced Clean Cars II - Advisory Committee #1 Comments**

DEQ Advanced Clean Cars II Staff,

Thank you for the opportunity to provide written comments following the Department of Environmental Quality (DEQ)'s first Advanced Clean Cars II (ACCII) Rules Advisory Committee Meeting. On behalf of the undersigned organizations of the Clean Cars Oregon Coalition, we write to express our strong support for adopting the ACCII rules this year in Oregon. Strengthening Oregon's vehicle emission standards and transitioning to 100% zero-emission vehicle sales by 2035 for all new passenger cars, is critical to meet our state's transportation emission reduction goals and reduce air pollution.

The Oregon Global Warming Commission recently identified the ACCII as a necessary rule to meet our greenhouse gas emissions goals. The transportation sector makes up about [40 percent](#) of Oregon's greenhouse gas emissions, of which, 62 percent is from passenger cars and trucks. This rule is not only critical to reducing emissions from the transportation sector, but it will also alleviate toxic air pollution. Oregon has received failing grades for nearly all counties where data was collected in the American Lung Association's [State of the Air Report Card](#). 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 effects of air pollution disproportionately impacts low-income Oregonians and communities of color due to racist public policies like urban renewal districts, redlining, and inner-city highway construction.

We support DEQ's proposal of creating Community Based Clean Mobility Programs which would provide access to clean mobility solutions other than vehicle ownership including ZEV car sharing, ride-sharing, vanpools, ride-hailing, or on-demand first-mile/last-mile services to communities including tribes, environmental justice communities, low-income communities, as well as areas with concentrations of people that are of low income, high unemployment, low levels of homeownership, high rent burden, sensitive populations, or low levels of educational attainment. We also recommend to include rural communities and communities underserved by public charging infrastructure and transportation electrification programs.

It is important to note that in order to ensure the most under-resourced and underserved communities are able to take advantage of this program, DEQ must ensure that technical

assistance is available for communities wishing to start up Clean Mobility Programs. Manufacturers could provide this technical assistance as well as provide education and outreach to communities identified as meeting the criteria for Clean Mobility Programs. We also recommend that DEQ expand the Community Based Clean Mobility Program to include clean mobility solutions other than vehicles such as e-bikes, e-micro mobility, transit options and broadband access.

Thank you for the opportunity to provide public comment.

Sincerely,

Members of the Clean Cars Oregon Coalition

Victoria Paykar  
Climate Solutions

Stuart Leibowitz  
Douglas County Global Warming Coalition

Alexa Diaz  
Forth

Rob Kugler  
Metro Climate Action Team's Transportation Subcommittee

Kathy Harris  
Natural Resources Defense Council

Jacqueline Treiger  
Oregon Environmental Council

Julia DeGraw  
Oregon League of Conservation Voters

Debra Higbee-Sudyka and David Collier  
Oregon Sierra Club

Dana Greenblatt  
Rogue Action Center

Akash Singh  
Union of Concerned Scientists

**From:** [Cliff & Jean Wooten](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Proposed elimination of new gas cars to be sold in Oregon.  
**Date:** Wednesday, September 7, 2022 3:03:30 PM

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Oregon does not produce or have available a supply of electrical power to support this idea. Some dams are being removed which will reduce available power as well. This shortage will also effect the use of air conditioners in homes during the summer months.

At least look at the power grid in California shutting down because of over demand during the summer fires. This should give you insight of what would happen in Oregon. Our drought problem is creating a similar problem of reducing our water supply. Look at California, Oregon, Washington, Nevada and Arizona Lakes/reservoirs shrinking in tremendous volume. Farmers, dairies, livestock producers canneries (food processers) and any other users of water used in producing our food will drastically affect the supply of food products. Prices are continuing to climb and empty shelves persist. Soon, when the water table continues to drop, our rural homes will have no water and cities will also suffer as their water supply drops.

As our power needs continue to grow faster than the supply it is possible that we will not have any power for our homes. The only solution is to invest in more nuclear power plants which produce cheaper power but the public apathy will have to change. Perhaps sitting at home in the dark with no electricity or water might be a wake up call.

Cliff Wooten

Scio, OR 97374

**From:** [Corbin](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Advanced Clean Cars Rule  
**Date:** Sunday, September 4, 2022 10:59:13 PM

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To Richard Whitman and the DEQ authorities responsible for considering the ban on vehicles that use gasoline by 2035, Oregonians should have the choice to oppose or support this policy change. Oregon's supermajority and the appointments for over 250 boards and commissions made by Kate Brown should not overrule Oregonian's choice, especially for this big of a policy change. This is not a rule, it's a statewide policy that effects every Oregonian. California's new Advanced Clean Car policy may be good for California, but that's not the case in Oregon. California ranks the 2nd highest contributor to GHG emissions at 358.8 million metric tons annually whereas Oregon contributes 38.3 million metric tons annually. Out of all states, Oregon has the 5th lowest carbon emissions per capita. As a reference, China contributes over 9.9 billion metric tons of GHG emissions annually. Globally, 33.6 billion tons of CO2 is emitted annually. Oregon contributes .11% of the worlds emissions. Oregon is already a green state. Oregon's DEQ's Director Richard Whitman, was asked what impact on global carbon would occur if Oregon were to reduce its' emissions to zero, he responded: "Rep. Brock Smith, you are correct that Oregon's portion of global carbon emissions is, I'll use the word minuscule." Oregon's HB 2021 requires retail electricity providers to reduce greenhouse gas emissions associated with electricity sold to Oregon consumers to 80 percent below baseline emissions levels by 2030, 90 percent below baseline emissions levels by 2035 and 100 percent below baseline emissions levels by 2040. Oregon's strict rules and regulations force utility companies to look outside of our state to produce 'green' energy. I am concerned with what our energy costs will be and grid reliability if you choose to adopt California's Advanced Clean Car policy. Hydroelectric power makes up the largest portion of Oregon's electricity resource mix, followed by coal and natural gas. Hydroelectric power is considered renewable energy by Oregon. With our Renewable Portfolio Standard, half of Oregon's electricity will come from renewable resources by 2040. How will this be accomplished if we are removing our dams that produce hydroelectricity?

Oregon's Global Warming Commission's 2020 report states:  
"Oregon's per capita sector-based emissions are 32 percent lower than U.S. per capita emissions, having dropped by 25 percent since 1990."  
"While impacts to our economy do have an effect on emissions, Oregon GDP and emissions have largely been decoupled since 1997. From example, from 1997 to 2014, Oregon's real GDP increased by almost 80 percent while total GHG emissions declined by approximately 11 percent.  
Oregon's Global Warming Commission recommends the following to our State Legislature:  
"19. Oregon's Global Warming Commission strongly suggests: "In rulemaking, the Department of Environmental Quality should consider allowing certain charging infrastructure projects to receive advanced clean fuels credits as a loan to help offset the upfront capital costs."  
"20. The Building Codes Division and local jurisdictions should accelerate the process for adoption of new building codes to require all

new garage structures to be pre-plumbed during construction for conduit that can support recharging at all parking spaces, and develop rules for including charging infrastructure in existing building stock.”

These are aggressive and expensive changes aimed at supporting Kate Brown’s Executive Order 20-04 made during a pandemic under her declared and prolonged emergency powers that had nothing to do with the pandemic. Banning the sale of gas powered vehicles is also aggressive and expensive on many levels.

My concerns with adopting this new ban on gas powered vehicle policy within 13 years:

Currently, Oregon has inadequate charging infrastructure. Power grids are already strained, this policy will add more strain with vehicles requiring charging.

One of the biggest challenges to EV adoption is the battery production process and supply chain. New mining and supply chains are needed to support EVs. There are a lot of minerals required to produce batteries for EVs, as a result, there’s a lot of mining and transportation of materials involved.

Electric vehicles lose charge when parked although it is minimal, it can add up over time. Green Car Reports suggest you charge your battery at least 80% before parking the car.

Electric cars can travel less distance-

AEVs on average have a shorter range than gas-powered cars. Most models ranging between 60 and 120 miles per charge and some luxury models reaching ranges of 300 miles per charge. For comparison, gas powered vehicles will average around 300 miles on a full tank of gas, and more fuel efficient vehicles getting much higher driving ranges. This may be an issue when looking at AEVs if you frequently take long trips.

Availability of charging stations can make AEVs less suitable for activities like road trips. Oregonian’s love their road trips.

EVs’ most prominent advantage is their potential to use fuel that produces no direct GHG emissions. Although EVs do not produce any tailpipe emissions, their total emissions depend on the emissions intensity of the electricity they use. For example, an EV powered completely by solar power would produce zero carbon dioxide (“CO<sub>2</sub>”) emissions for each kilowatt-hour (“kWh”) of energy consumed, whereas one powered entirely by coal-fired electricity would emit about 2.07 pounds of CO<sub>2</sub> per kWh consumed. This equates to about 0.66 pounds of CO<sub>2</sub> per mile. By comparison, a gasoline-fueled passenger vehicle with average fuel economy (24.8 miles per gallon)<sup>15</sup> emits about 0.98 pounds of CO<sub>2</sub> per mile. Thus, an EV powered exclusively by coal would emit CO<sub>2</sub> equivalent to a car that achieves about thirty-five miles per gallon. As a result, an EV powered exclusively by coal-fired electricity would still reduce about 0.32 pounds of CO<sub>2</sub> per mile compared to a gasoline vehicle with average fuel economy.

If EVs replace an average vehicle driven 11,824 miles per year—the average number of miles driven per year in the United States—then an EV could save between 5.2 metric tons of CO<sub>2</sub> emissions per year (when powered by zero-emissions electricity) and 1.7 metric tons of CO<sub>2</sub> emissions per year (when powered exclusively by electricity generated from coal). Significantly, however, these comparisons are between EVs and cars with average fuel economy. \*\*When compared to more fuel-efficient vehicles like hybrids, EVs can emit more GHGs when using power generated primarily from coal\*\*

Electric cars take longer to “refuel”-

Fueling an all-electric car can also be an issue. Fully recharging the battery pack with a Level 1 or Level 2 charger can take up to 8 hours,

and even fast charging stations take 30 minutes to charge to 80 percent capacity. Electric car drivers have to plan more carefully, because running out of power can't be solved by a quick stop at the gas pump. Lithium ion batteries used in EVs also do not perform as well in cold temperatures, which can lead to further range reductions. Their general findings are that drivers of an average EV might see about half of the manufacturer's official range. If the average range is 200 miles per charge, the range will decrease to 100 miles before required charging in cold temperatures.

Electric cars are more expensive, and battery packs may need to be replaced- The battery packs within an electric car are expensive and may need to be replaced more than once over the lifetime of the car. All-electric vehicles are also more expensive than gas-powered cars, and the upfront cost of all-electric vehicle can also be prohibitive. However, the fuel cost savings, tax credits, and state incentives can help to offset this cost overall if they are available.

Finite critical minerals and rare earth metals-

EVs use about six times more mineral inputs than ICE vehicles. The IEA's forecast of 70 million EVs on the road by 2040 will be accompanied by a 30-fold increase in demand for minerals. There is no shortage of these resources underground, but rather a concern as to whether they will be extracted sustainably, in line with social responsibility governance, and in time to meet demand. It is anticipated that there will be a shortage of nickel and challenges in scaling up lithium production. This supply shortage may also cause manufacturers to use lower-quality mineral inputs, adversely affecting battery performance.

Oregonians have a right to decide our fate! Please let us vote instead of sealing our fate.

Linn County Resident,  
Corbin Tolen



**From:** [corder61](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Advanced Clean Cars 11  
**Date:** Tuesday, September 6, 2022 6:20:54 PM

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I write to you today as a plea to not be so quick to implement No Gas Vehicles or to not implement this at all. As a State, we will be shooting ourselves in the foot on this! 1. The grid!! No way our current grid can support all these electric vehicles, no matter how many extra you put in or upgrades you make. We will run into all sorts of Electricity issues that will not be able to support all these electric vehicles. 2. Electrical shortages, rolling brown outs and major blackouts, huge electric bills no one will be able to afford, tax increases to supplement for this program as it will never be on budget with unforeseen events and costly repairs. 3. Economy will take the biggest hit ever! Most people will not be able to afford an EV, then people will have issues getting to work, paying bills etc. You think we have a homeless crisis now!? Just wait! 4. Lithium Farming...NOT GREEN! Lithium Batteries...Not Green! Will we be using electric excavators to mine this lithium? Bulldozers consume a large amount of diesel fuel and consequently produce a significant quantity of CO2. What about disposal of these lithium batteries? 5. Stranded EV's all over the roads, Hwy and Fwy's. You cant just call AAA to bring you some gas nor can you tow most of these vehicles at all and some can only be towed on a flatbed. We will not have enough flatbeds or portable electric charging stations (ASSUMING THAT HAS BEEN THOUGHT OF) to keep up with all the stranded EV's blocking our roads, causing accidents or worse! Could you imagine having this issue on the 20 W/Santiam Junction or any roads like that here that are conman, not like that of CA. It would be chaos and lives lost for sure. In closing, lets not be so quick to be like California. Let CA be the Test State for this and if it goes smoothly then we slowly move to follow suit. But, I ask you why would we follow suit when CA Air Quality and miles of thick layers of smog are for concern there? We do not have these same issues. I feel as a State, we are far away from the damage that CA has. We dont even do smog checks here and we want to automatically just roll over and do what CA does!? Just doesn't make sense. Lets just let Oregon be Oregon. If anything give the people incentives to want to change their own mind to roll over to an EV. Tax breaks, free registration etc. Thank you for your time,

Dale Corder

**From:** [Byers Orchards](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** 2035 Electric Vehicle Mandate  
**Date:** Tuesday, September 6, 2022 10:37:10 AM

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If your going to mandate then why not mandate at the same time that the Oregon State Power Grid be updated and improved, along with secured power sources to provide sufficient electrical energy to meet the demands of the additional electrical vehicle mandates?

Or not, and then, as in California, you are asked not to charge your vehicles during peak demand periods.

Why not let technology drive the desire for electrical vehicles, not some government mandate?

Dan Birkhimer  
Safety and Compliance Monitor  
Byers Orchards LLC

The Dalles, OR 97058

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**From:** [Dan Motley](#)  
**To:** [2022 Levzvez \\* DEQ](#)  
**Subject:** Advanced Clean Cars II Rule 2022  
**Date:** Sunday, September 4, 2022 3:05:33 PM  
**Attachments:** [Batteries.docx](#)

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Advisory Committee,

I am writing to express my opposition to Oregon adopting California's rules regarding all-electric vehicles and their sales in Oregon by 2035.

Oregon and California do not have the same climate, resources, environmental demands, economic size, or socio-economic needs. California's law may be fine for California, but that does not imply fitness for Oregon or its people. I submit that the economic capacity of Oregon's people is not that of California's populace; Oregon's people do not have the same economic power to purchase electric vehicles in any form close to that of Californians.

I further submit that California's act wasn't well thought out for them and is ever further from being well thought out for application to Oregon. I understand that 14 states (including Oregon) may want to be on California's coattails as it races towards a zero fossil fuel use, but none of those states (including Oregon) have the economic structure of California.

Attached to this email is a document which I do not know the source of. However, I have presented it to persons known to me, persons who are in the battery business here in Oregon, and they tell me that it is substantially correct. If the document's allegations are correct, Oregon would be creating its own environmental disaster in attempting to dispose of EV batteries; we have no location or resources identified for disposal of same. What ehn will we do? Where will we dispose of these batteries? Will California take them off our hands since we walked in their steps enacting the law that caused such Disposal issues?

I appreciate that Oregon wants to be a part of this great step forward, but it is not the well-thought out step that it could and should be. It is more the step of a lemming, walking off the cliff of oblivion.

Regards,  
Dan Motley  
Dallas, OR 97338

Attachment: a/s

Batteries, they do not make electricity – they store electricity produced elsewhere, primarily by coal, uranium, natural gas-powered plants, or diesel-fueled generators. So, to say an EV is a zero-emission vehicle is not at all valid.

Also, since forty percent of the electricity generated in the U.S. is from coal-fired plants, it follows that forty percent of the EVs on the road are coal-powered, do you see?" Einstein's formula,  $E=MC^2$ , tells us it takes the same amount of energy to move a five-thousand-pound gasoline-driven automobile a mile as it does an electric one. The only question again is what produces the power? To reiterate, it does not come from the battery; the battery is only the storage device, like a gas tank in a car.

There are two orders of batteries, rechargeable, and single-use. The most common single-use batteries are A, AA, AAA, C, D, 9V, and lantern types. Those dry-cell species use zinc, manganese, lithium, silver oxide, or zinc and carbon to store electricity chemically. Please note they all contain toxic, heavy metals.

Rechargeable batteries only differ in their internal materials, usually lithium-ion, nickel-metal oxide, and nickel-cadmium. The United States uses three billion of these two battery types a year, and most are not recycled; they end up in landfills. California is the only state which requires all batteries be recycled. If you throw your small, used batteries in the trash, here is what happens to them.

All batteries are self-discharging. That means even when not in use, they leak tiny amounts of energy. You have likely ruined a flashlight or two from an old, ruptured battery. When a battery runs down and can no longer power a toy or light, you think of it as dead; well, it is not. It continues to leak small amounts of electricity. As the chemicals inside it run out, pressure builds inside the battery's metal casing, and eventually, it cracks. The metals left inside then ooze out. The ooze in your ruined flashlight is toxic, and so is the ooze that will inevitably leak from every battery in a landfill. All batteries eventually rupture; it just takes rechargeable batteries longer to end up in the landfill.

In addition to dry cell batteries, there are also wet cell ones used in automobiles, boats, and motorcycles. The good thing about those is, ninety percent of them are recycled. Unfortunately, we do not yet know how to recycle single-use ones properly. But that is not half of it. For those of you excited about electric cars and a green revolution, I want you to take a closer look at batteries and also windmills and solar panels. These three technologies share what we call environmentally destructive production costs.

A typical EV battery weighs one thousand pounds, about the size of a travel trunk. It contains twenty-five pounds of lithium, sixty pounds of nickel, 44 pounds of manganese, 30 pounds cobalt, 200 pounds of copper, and 400 pounds of aluminum, steel, and plastic. Inside are over 6,000 individual lithium-ion cells.

It should concern you that all those toxic components come from mining. For instance, to manufacture each EV auto battery, you must process 25,000 pounds of brine for the lithium, 30,000 pounds of ore for the cobalt, 5,000 pounds of ore for the nickel, and 25,000 pounds of ore for copper. All told, you dig up 500,000 pounds of the earth's crust for just - one - battery."

Sixty-eight percent of the world's cobalt, a significant part of a battery, comes from the Congo. Their mines have no pollution controls, and they employ children who die from handling this toxic material. Should we factor in these diseased kids as part of the cost of driving an electric car?"

I'd like to leave you with these thoughts. California is building the largest battery in the world near San Francisco, and they intend to power it from solar panels and windmills. They claim this is the ultimate in being 'green,' but it is not. This construction project is creating an environmental disaster. Let me tell you why.

The main problem with solar arrays is the chemicals needed to process silicate into the silicon used in the panels. To make pure enough silicon requires processing it with hydrochloric acid, sulfuric acid, nitric acid, hydrogen fluoride, trichloroethane, and acetone. In addition, they also need gallium, arsenide, copper-indium-gallium-diselenide, and cadmium-telluride, which also are highly toxic. Silicon dust is a hazard to the workers, and the panels cannot be recycled.

Windmills are the ultimate in embedded costs and environmental destruction. Each weighs 1688 tons (the equivalent of 23 houses) and contains 1300 tons of concrete, 295 tons of steel, 48 tons of iron, 24 tons of fiberglass, and the hard to extract rare earths neodymium, praseodymium, and dysprosium. Each blade weighs 81,000 pounds and will last 15 to 20 years, at which time it must be replaced. We cannot recycle used blades.

There may be a place for these technologies, but you must look beyond the myth of zero emissions. "Going Green" may sound like the Utopian ideal but when you look at the hidden and embedded costs realistically with an open mind, you can see that Going Green is more destructive to the Earth's environment than meets the eye, for sure.

**From:** [Dan Robertson 2022](#)  
**To:** [Levvzev \\* DEQ](#)  
**Subject:** Adoption of 100% Electric Vehicles 2035  
**Date:** Tuesday, September 6, 2022 6:33:22 AM

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Please do not adopt these rules for rural oregon. I am a professional forester using 15 to 20 vehicles in the woods. We frequently drive more than 150 miles per day and about 30 to 40% of these miles are off highway miles. There are no charging stations in the woods and I doubt if there will be for a long time. This one size fits all rule defies common sense and shows no understanding of what it is like to work in rural oregon. The cost alone of adopting these vehicles will be prohibitive. In addition at this time there are no electric trucks built to withstand the abuse of logging roads. Dan Robertson, President and Owner of Professional Reforestation of Oregon Inc. since 1980.

**From:** [Dana Estensen](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Don't Adopt - 100% Electric Vehicle Standards  
**Date:** Wednesday, September 7, 2022 4:47:32 PM

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9/7/22

Attn: Oregon Department of Environmental Quality

Please do not adopt California's anti-rural 100% electric vehicle standards.

The cost of electric vehicles is out of reach for many farm families – the cost for these vehicles is much higher than their fuel-based counterparts.

Rural areas do not have the electrical infrastructure in place that will be required by these electric vehicles. Many agricultural work trucks and vehicles are only used in remote areas of the state, far from any charging stations.

This rule would be another burden on our rural communities which have vastly different vehicle needs compared to those located in urban areas.

Thank you for your consideration of my comments.

Dana Estensen  
Silverton, Oregon

**From:** [Dana Mills](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** CLEAN AIR.  
**Date:** Monday, September 5, 2022 4:28:21 PM

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How is it possible that the DEQ has the Authority to make policy without the will of the Legislature and a Vote from the PEOPLE? Where are the studies? Do you just follow California? This lack of public comment and sneaky timing on a Holiday weekend hogwash proves you all are puppets of the for profit Environmentalists and foreign entities. You are directly responsible for the attempted destruction of Oregon Constitution and Americas Constitutional Republic. Shame on you all.

[Sent from Yahoo Mail on Android](#)



**From:** [Dana Taylor](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** No to only EVs for new cars.  
**Date:** Sunday, September 4, 2022 9:41:58 PM

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I strongly object to only EVs . Our electrical grid is not setup for that. Don't put the cart before the horse. I want to see the business plan to implement EV charging at every apartment, rental property and personal property. I want to see how much it'll cost us, and most importantly, how is this electricity produced? Will the grid handle over 3 million people charging their cars after work?

Sent from my iPad

**From:** [Daniel A Miltenberger](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** cars  
**Date:** Tuesday, September 6, 2022 6:40:43 PM

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This is stupid on it's face. We have a gas diesel infrastructure. Now they are asking people not to use their electric cars. Do you know why? Don't talk about pollution until you tell me where you clean power is coming from. Then tell me where all the used up components go.

Daniel A Miltenberger  
Albany, Oregon 97322

**From:** [Daniel Chapin](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Comment opposing the proposed electric vehicle mandate.  
**Date:** Sunday, September 4, 2022 7:38:10 PM

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To whom it may concern:

I write to express three objections to the proposed rules which would prohibit the sale of gas powered light duty vehicles by 2035.

First, electric vehicles do not work well for rural residents who frequently have to make long trips through rural areas where there are no available charging stations.

Second, electric vehicles are more expensive than gas vehicles and as a farmer I am already facing economic hardship due to rapidly rising input costs while my gross income (which is based on world commodity prices) has stayed relatively flat. So, forcing me and other rural residents to purchase more expensive electric vehicles will cause significant economic hardship.

Third, a significant policy decision like prohibiting the sale of gas vehicles which infringes on the freedom of Oregonian citizens should be made by the elected legislature not by an unelected and unaccountable bureaucracy.

Sincerely,  
Daniel Chapin

Sent from my iPhone

**From:** [Darrell Barnard](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Forced EV  
**Date:** Tuesday, September 6, 2022 3:41:00 PM

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To my Employees,

You were elected to represent ALL Oregonians, yet you only represent the special interests of a portion urban areas, with zero thought of representing We the People in rural communities. It is proposals such as this, which reduces our faith in fair and equal representation of ALL Oregonians by the legislative bodies in Salem. It is absolutely unfeasible for a vast number of People in Oregon outside of the metropolitan areas to move from internal combustion to electrical power vehicles, for numerous reasons. I understand what you're trying to sell us on, as well as convince us to do. I have no problem with those who choose to go in that direction. The part you're not taking into consideration, is many of us who live rurally have had our incomes considerably reduced, many of us have to travel many miles, as well as hauling heavy and large loads. As of yet, power storage is not at a standard in EVs that would be able to efficiently get us to and from work, our chores done in ranching, farming and timber industries, to name a few. The impact on many Oregonians would be extremely negative. When you look at the cost of purchasing a vehicle, which you will make it impossible to get any trade in value for the internal combustion vehicle, this will financially devastate many many Oregonians. Responsible disposal of power storage units is nonexistent, at \$20,000 plus to replace the power storage, as opposed to the \$5,000-10,000 to rebuild an internal combustion engine, this says you only want to make more destructive rules, rather than to represent Oregonians. If you're trying to run multigenerational Oregonians, such as myself (5 generations) out of this State, destroying it, you're succeeding with this crud. You need to think hard about the fact that you people are OUR employees, NOT our bosses. The actions of late are taxation without representation issues. If you actually studied the founders writings, you would also understand that taxation without representation is the very definition of tyranny. I urge you to not support this special interests "rule", as well as others which will negatively effect Oregonians.

Thank you for your time to truly think of responsibilities to We the People of Oregon in a more holistic manner.

Darrell Owen Barnard,  
One of your employers,  
Lebanon Oregon

**From:** [Darrell W. Fuller](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Public comment on behalf of OVDA  
**Date:** Wednesday, September 7, 2022 10:37:16 AM

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I write this emailed public comment on behalf of the Oregon Vehicle Dealer Association. OVDA is Oregon's largest association of certified motor vehicle dealers and includes franchised dealers, independent dealers, power sports dealers, RV dealers, and boat dealers. We write on behalf of our members, and on behalf of our customers who are always concerned about price, and who always want to choose just the right vehicle for them from the largest possible inventory. We write today because we are concerned about the newly adopted CARB rule, and that Oregon is fast-tracking adoption of a similar rule.

OVDA supports our customer's ability to choose. We do not support government restrictions on the production or sale of motor vehicles based on the power source. We strongly support the production and sale of a larger variety of vehicles powered with newer, better, and more efficient power plants. Then, customers can choose the vehicle that best serves their values, interests, and needs. But government should not choose for us in a market-based economy that is the envy of the world.

Further, while the EQC certainly has the statutory authority to adopt the new CARB standard for 2035, we believe it should not. We are concerned about the hasty nature of adopting such a significant proposal. We believe a decision of such magnitude should result from a vote of the citizens, or by affirmative action by the Oregon Legislature.

Thank you for soliciting input on this important discussion.

**Darrell W. Fuller**  
**Registered lobbyist for OVDA**

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**From:** [Dave Doornink](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Clean cars comment  
**Date:** Tuesday, September 6, 2022 5:54:36 PM

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I am concerned this effort not because I hate the environment, but because it seems lofty and unattainable - but that's where my comment/question comes in:

A very high percentage of people live in housing that does not allow them to charge their vehicle. Take, for example, apartments - where I personally live. I would love to buy home, but the recent housing market has made it impossible for me to purchase a home. So I'm living in an apartment, where it is completely impossible for me to charge an electric vehicle.

If I had a zero emissions vehicle, that would likely mean it is electric only. How do you propose I charge my vehicle? I can't run an extension cord from my third-floor apartment across the parking lot to my parking space to charge my vehicle every night. I also can't charge it in the garage because apartment garages are not metered for power (the meter covers a section of garages rented by different people) and my vehicle won't fit in the garage. I have a pickup, and need one for what I do. So even if I had to buy zero emissions pickup and charging was possible there - it wouldn't fit in my garage.

So my question is, how do you intend to address that? A large percentage of people live in apartments where charging the vehicle is practically impossible. Are you going to make apartment complexes across the state install charging systems at every parking space? Where are they going to get the money to do that? They will raise our rent so we pay even more than we do now. You do know that a 2 bed 1 bath apartment rents for \$2200 per month, don't you?

Also, what about the impact on the electrical grid? Do we have the infrastructure to handle everyone charging their vehicles at the same time across the state?

I get the good intention, but instead of proposing a rule, where is the information about how you're going to make it happen?

Also, please prove my instincts wrong and actually answer the questions that are asked in public comment – including mine. Public comment means that you respond and explain to the people who pay your salary. I'm a public employee too, and I know I answer to the people I serve. So please do us the same respect.

Dave Doornink

**From:** [Dave Pick](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Please listen to the people!  
**Date:** Saturday, September 3, 2022 11:54:40 AM

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Politics today are getting out of hand. There's a large majority in the middle that are being forgotten about. Politicians seem to only want to listen to the extremes. This is true for the left and right sides of the isle! Squeaky wheel gets the grease right? WRONG!

The majority wants clean energy, the majority wants a greener society but please don't put the cart in front of the horse! We do not have the infrastructure to make this switch this fast. If you want to spend money, spend it in the right place first. We need a much stronger infrastructure before we can just shut off the oil spigot. California is ALREADY warning about rolling blackouts. What are people supposed to do when they're told not to charge their EV's? Walk to work in 100 degree heat to drop off their kids at daycare? THINK!!!!

Listen to the majority. Just because it sounds good to the tiny majority of "squeaky" voters doesn't mean we should just make it law!

**From:** [David Cooper 2022](#)  
**To:** [Levzhev \\* DEQ](#)  
**Subject:** Oregon's Proposed Electrical Vehicle Mandate  
**Date:** Wednesday, September 7, 2022 12:41:35 PM

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Hello out there, is anyone paying attention to the reality that if you do not have enough electricity to power all the devices that are plugged into the Power Grid, the entire system will CRASH. CBS News touched on this problem today (September 7, 2022) with their news coverage of the extreme heat and wildfire risk that is now and has been plaguing the California much of this summer. That CBS story cited California's maximum capacity to deliver electricity at 56,000 MegaWatts and the consumption on September 6, 2022 exceeding 52,000 MegaWatts. This narrow miss of a crisis on the Power Grid happened before the additional demand of hundreds of thousands of vehicles being plugged into the Grid.

With an "Electrical Vehicle Mandate" Oregon will be challenged to both produce and deliver the power necessary to meet the demand. Policy makers need to be cautious about creating an undeliverable situation, can Oregon produce enough electrical power that you will not have to tell people that they cannot charge their vehicles because the power is needed to operate their air conditioners. And for those of us who live and travel in more rural areas of the State will there be any place to recharge a vehicle.

Finally, if this mandate to switch to "clean" energy electric vehicles can only be "fueled" by electricity that is produced from a mix of sources that include fossil fuels, hydro, wind, solar and others has anything actually been accomplished?

Respectfully,  
David Cooper

The Dalles, OR 97058



**From:** [David Klaus](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Date:** Tuesday, September 6, 2022 6:27:17 AM

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I am writing you today to oppose the rule mandating that all new vehicles be electric by 2035. With cheap, clean and abundant fuels already available, there's no need to overburden our antiquated electric grid and drive up the cost of energy even further.

Sincerely,

David Klaus  
Newberg

**From:** [David Phipps](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Cc:** [Sen Kennemer](#); [Rep Meek](#); [congressman.schrader@mail.house.gov](mailto:congressman.schrader@mail.house.gov)  
**Subject:** Proposed Electric Vehicle Mandate  
**Date:** Tuesday, September 6, 2022 8:59:01 AM

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To whom it may concern at Oregon DEQ,

I am writing to express my frustration with this state regarding following everything California and Washington do. I have lived my entire life in this state and have taken pride in the fact that we have been leaders in the environmental movement. However, there comes a time when we need to look at the needs of the people before mandating the sale of electric vehicles.

I feel this will create a more significant gap between Oregon's classes. The price of EVs is already out of reach for most Oregonians and mandating the sale of them will only put the manufacturers in the driver's seat by charging inflated prices. Today's gas vehicles have already decreased emission levels but by allowing competition and technology to evolve, everyone wins and prices will stay competitive. Please let Oregon become its own trendsetter and show the country that we can be innovative without following our neighboring state's radical rules. Let's not put the burden on Oregon's less fortunate. Instead, let's allow our commerce to become competitive and promote affordable technology.

Thank you very much for allowing me to share my thoughts.

Sincerely

David Phipps

Oregon City, OR 97045

**From:** [david Rieben](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** California Electric Vehicle Mandate  
**Date:** Tuesday, September 6, 2022 12:27:11 PM

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To: Rulemaking Advisory Committee.

I believe the recent popular movement about electric vehicles, craze, if you will, has a lot of unintended consequences that needs input from many more individuals and industries. I believe this dictate from government is an overreach that needs to be slowed down and better evaluated instead of what seems to be the popular movement without due consideration. This copycat following in Oregon of California and other states mandate is just that. A copycat movement by certain political leaders without concern for a multitude of individuals and businesses.

So many people think we will save the planet if we switch from fossil fuel power to “clean” electric power without a thought of the need to burn fossil fuel to generate the electricity for all those electric vehicles.

- The cost of electric vehicles is considerably more than gas or diesel vehicles that will put a significant financial burden on many,
- The cost of installing an electric grid sufficient to supply all those vehicles is astronomical,
- The main component of electric vehicle power is lead, a resource found primarily in a nation that does not have our best interest in mind, to put it mildly. It could quickly become a national security risk to depend on them.
- Suppose you are on a trip and get stranded in a natural disaster like a snow storm, How long will your battery provide enough heat for your family in an electric car?

I cannot help but think this “dictate/mandate” is a hurry up effort, again, by certain political leaders to gain a pat on the back, so to speak, from like minded politicians without concern for those it will hurt.

This topic needs to be slowed down and looked at by a wide variety of interests. Not just “yes” people. To make a proclamation like this I believe is putting the cart before the horse.

**From:** [DEBBIE HAGNER](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Elelectric Vehicles  
**Date:** Friday, September 2, 2022 9:00:31 PM

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I respectfully ask you not do what a couple states are, moving FAR too quickly to EVs only! Some equipment types need oil and gas! Our grid is old, some of our homes might not have charging volts to charge the cars. If we have all electric and the grid goes down we're stuck wherever we are! Imagine trying to evacuate a fast moving wild fire and your exit car can't get you out! Move more slowly! Too many glitches and such still and the last we want to be is at your mercy while a fire is eating our homes and we lose charge THINK ABOUT THAT!

In earnest,  
Deb Hagner  
Portland

Sent from my T-Mobile 4G LTE Device  
Get [Outlook for Android](#)

**From:** [Debbie Lippitt](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Electric Vehicle Mandate  
**Date:** Saturday, September 3, 2022 8:53:50 AM

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I am opposed to this. I think that while the idea is good it is ahead of it's time. Used batteries are an issue that has yet to be satisfactorily addressed. How about developing batteries that are truly recyclable and are more earth friendly? Is our electric service capable of handling this load? I think that small baby steps would be better. Continued work on farm equipment that is moving toward electrification...there is plenty of work needed here..keeping in mind "the right to repair" also! How about getting people to curtail their electric consumption and gasoline consumption too!..there are plenty of ignorant people out there! They act as though there is an endless supply! Let's start getting the system in place before we hand down sweeping mandates such as this. Education is the key..get the people to move that direction without forcing the issue.

Deborah Lippitt  
[Silverton Oregon](#)

**From:** [Debbie](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Rule making that could ban internal combustion engine powered vehicles in Oregon, identical to California's recent ban.  
**Date:** Tuesday, September 6, 2022 5:29:51 PM

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To whom this may concern .

Neither of these states have thought this through. A. Nobody wants an electric car, especially when they are trying to eliminate the dams and our electricity. B. Elected officials will quickly lose favor with those who elected them, clearly with all the chatter about a "Red Wave" coming this would/should already be apparent to most thinking people. C. People are fed up with the "misinformation" about climate change, going green etc. D. All of the other efforts to make everything "clean and Green" Have been an absolute failure. Wind for electricity, that doesn't always blow, but does a fine job of slaughtering birds. Solar power that has major issues with the materials it is comprised of polluting the soil and ground water when it has to be replaced. Do yourselves a favor and forget this stupid idea. CA is the last place to get advice or ideas from. Seriously!

**From:** [Debby Rariden](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Electric car  
**Date:** Tuesday, September 6, 2022 8:32:41 PM

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Get real, our electric grid cannot begin to cover this stuff. No to electric cars.

Sent from my iPad

**From:** [Debra Adkins-Brown](#)  
**To:** [SAKATA Rachel \\* DEQ](#)  
**Subject:** Clean cars  
**Date:** Wednesday, September 7, 2022 3:49:26 PM

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I been active on environmental issues all my life. But I can't get behind the electric car movement at this time. Not only is it financially impossible for most people but there are other considerations to look at.

1)Our current inability to guarantee electricity at an affordable price for heat and energy.

2)The inability of rural areas to use and charge electric vehicles.

3)The human cost of mining in poor countries.

4)Our inability to protect these vehicles or any modern vehicle from EMI.

The list I'm sure goes on. Please do not consider making electric vehicles the rule until all of these and other considerations are remedied.

Thank you,

Debra Adkins-Brown



**From:** [Brown Debra](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Advanced Clean Cars Rule comment  
**Date:** Monday, September 5, 2022 8:40:37 AM

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To the Parties trying to Destroy Oregon as quickly as possible:

It would seem that the agenda with this new “rule” is to remove the freedom we currently have in the USA to move about as we choose. This is Discrimination and Classism at its finest. You clearly despise people of color and those of lesser socioeconomic status who will NOT be able to afford electric vehicles and the cost of charging them. Is your goal to allow only the wealthy elite such as yourselves to drive around at your whim, doing your important tasks that seem to only take us down the road to total tyranny?

This is not “green”! Batteries are much more destructive in their creation than the use of renewable fuels. They have harmful minerals/ores in them, we have no long term plan to retire them out safely (each battery only lasts a couple of years), and they are put into lightweight cars causing real physical threats during auto accidents (the batteries tend to blow up and cause fires). Further, Oregon’s electric grid will not handle charging electric cars (see recent news articles about California’s current blackouts). Some common sense is needed with this rule making-this will not work and will cause devastating hardships to families, agriculture, trucking, etc.

Sincerely,

A Very Concerned Oregon Resident

**From:** [Delo W](#)  
**To:** [2022 Levzhev \\* DEQ](#)  
**Subject:** EVs and 2035 law  
**Date:** Monday, September 5, 2022 7:19:36 AM

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There are many reasons why we still need gas and diesel vehicles. To mandate electric vehicles for everybody is absolutely insane. We here in Oregon have had numerous fires with evacuations and people attempting to escape with their lives.

During fires the power goes out... Imagine you and your family being evacuated with the fire rapidly approaching and your battery in your EV is dead. Now imagine you are fortunate and you do have a charge in your EV but you were in the middle of a huge traffic jam where traffic is backed up and you are rapidly losing the charge on your battery.

This can also happen in the dead of winter on icy Oregon roads when there are auto accidents ahead and you are caught in a huge traffic jam with no way of getting off the freeway. Do you turn on the heat to keep from freezing and drain your battery while you wait for the freeway to be cleared? Here in Oregon this has been known to happen on Interstate five when semis jackknife. It has sometimes taken a day or longer to clear the accident areas.

Also in a catastrophe how are emergency vehicles going to be able to come to emergency 911 calls if they can only get 350 miles on a charge? Do the dispatchers tell the person having a heart attack to hold on while they charge their ambulance? This is not far-fetched and anybody with common sense would know it.

Then there's the issue of how the batteries are mined. How can you say that these vehicles are environmentally friendly when you know the disastrous affect the mining has on the earth from getting Lithium for the batteries?

Now let's get to the long-haul truckers... There is no way that this is even feasible for the trucks supplying us with Medicine, food, and necessary supplies that we all need for our every day living. Passing this will not only cripple our state but will cripple any state that implements this asinine law.

Our constitution dictates that we are free men and this law and any law that is against the constitution by taking any freedoms away is null and void!

I hope and pray that common sense will prevail! Implementing this law would be a total and complete disaster for all Oregonians!

Sent from my iPhone

**From:** [DELYNN EDWARDS](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Public Comment on 2035 EV Proposal  
**Date:** Sunday, September 4, 2022 12:48:30 PM

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Living in rural Columbia County makes this proposal exceptionally difficult for its citizens when we already have extremely limited options for public transit. How about 50% of new vehicles? Or limiting this to the major metro areas instead which produce most of the emissions?

If someone drives 100k miles every 5 years they would have to replace the battery that often. Most do not have the ability to cover that cost on a whim. Then multiply that by more than one vehicle in a household. Extreme hardship is what this will cause. I'm all for cleaner air but I don't think this is how the state should be heading.

It also concerns me that in winter families who lose power for days at a time would have no electricity to charge a vehicle to get essentials like food and water should they need them.

I am additionally concerned about power grid infrastructure and being forced to lose electricity if the grid can't accommodate so many electric vehicles. Look at California's current state asking people to limit consumption! How will electric rates be affected in the long run with the huge increase in usage?

What is the plan for battery disposal and the effect of that on the environment? Are the things used to produce the batteries renewable resources? How much energy is used to manufacture and distribute them?

We will be forced to say goodbye to family camping and rural road trips. Not to mention those of us who cannot fly will be

forced to to travel any significant length. Or, we will have to plan to double the length of time to get to any destination due to charging downtime.

Please consider something else that is a win win for everybody in this state. Clearly it will have a detrimental impact on rural communities. Keep the incentives going for those that want AND can afford an EV.

Sincerely,

A rural Oregonian tired of the major metro areas determining what's best for the rest of the state

Get [Outlook for iOS](#)

**From:** [Derry Breeden](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Advisory committee input  
**Date:** Tuesday, September 6, 2022 3:42:02 PM

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I advise the Advisory Committee to do research (and compile that information for the public to see) on the environmental impacts from mining of rare earth elements. Specifically, mining impacts on indigenous communities and the destruction of natural habitat.

We all know about "blood diamonds" but little is known about similar practices of Cobalt mines. The essential elements of electric vehicles are fueling child labor practices in the African continent.

Disposal of lithium is creating future environmental catastrophes. South American indigenous land is being polluted with ion batteries that do not decompose and are being dumped by the millions.

Going green feels good, but that is only because the negative aspects of going green are not being brought to the public's attention. Please inform the public with all the information before making final decisions.

Thank you for your time and consideration.

Best regards,

Derry Breeden

**From:** [Desi Moncrieffe](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** DEQ Rule making on electric cars  
**Date:** Saturday, September 3, 2022 3:29:27 PM

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I strongly oppose this rule. I see it as a violation of my rights as an American citizen. Electric vehicles have a larger environmental impact than gasoline vehicles. Not to mention the batteries often fail and are very very expensive to replace. I cannot see why we would again rely on Chinese imports of battery components when they treat the United States so poorly. What ARE you thinking....

**From:** [Don Frier](#)  
**To:** [2022 Levzvez \\* DEQ](#)  
**Subject:** Public comment relating to rulemaking re: advanced clean cars act adoption  
**Date:** Tuesday, September 6, 2022 10:04:39 PM

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DEQ,

I was recently informed that you are considering adopting a new rule that will closely follow California's new Clean Cars Act, creating a requirement that all light-duty vehicles transition to zero emissions by 2035.

I would like to state that I believe this is a terrible idea for Oregon. I would propose the following reasons for why:

- The technology is not there. Electric trucks do not have the capacity or capability to do what gas-powered vehicles can now. While we can all hope that a solution will arrive by 2035, that's a mighty big "if." What happens if the technology isn't there? How will farmers pull their trailers, or any other worker that relies on a passenger truck to move a heavy load? They'll have to continue to buy used. A terrible incentive to set.
- Setting the transition year to the same one as California is bad for Oregon economically. We'll be competing for electric car options with them. Better to offset that transition period for a few years to save ourselves from that cliff.
- We don't have the infrastructure for it. There just aren't enough plug-in stations around the state that are easy to find. Each of the different manufacturers uses a different standard, making this problem even more pronounced. That's not even addressing the question about our electrical grid. Is it ready to take on that additional load? What will be required to get it there? These are problems that could be overcome, but what's the plan to get there?
- This might be a great solution for Portland, where the average driving distance is a dozen miles. But in the country? It doesn't fit. Most electric cars have a radius of a 100-200 miles, and while we all hope (again) that the technology will improve in the next dozen years, that's placing a lot of hope in something we can't control. That might mean that rural Oregonians will have to "fill up" after every trip into town, a delicate and tenuous situation to be in if those stations are closed (like our gas stations late at night).

Thank you for taking the time to consider our comments,  
-Don Frier & Amanda Willis-Frier  
Linn County

**From:** [Don Wirth](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Vehicles  
**Date:** Saturday, September 3, 2022 7:41:19 AM

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If these rules for electric or non petroleum vehicles goes through, it will only exacerbate the food shortage and people's reduced standard of living. So, bring it on, if that is your goal.  
Don

--

Don Wirth

"You can't think your way into a new way of living - you have to live your way into a new way of thinking"

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**From:** [Donna Trask](#)  
**To:** [2022 Levzhev \\* DEQ](#)  
**Subject:** Following California's lead in vehicle emissions  
**Date:** Tuesday, September 6, 2022 3:47:47 PM

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Gentlemen/Ladies:

While I agree that clean air is everyone's responsibility, I think perhaps we should avoid being lemmings about this precipitous move and choose rather to watch California's progress for at least three years so we can avoid the pitfalls they will encounter.

Thank you for considering my opinion.

Donna Farris Trask, Albany

**From:** [Donnie Jenck](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Proposed electric vehicle mandate  
**Date:** Sunday, September 4, 2022 4:35:08 AM

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Please do not send another mandate that makes no economic sense to farmers in Oregon

I'm but one farmer , but someday when the store shelves are empty you can go down the list of programs that have lead to the destruction of American agriculture.

The mandates for electric vehicles which is the first step to requiring larger vehicles and tractors to be non fossil fuel will join the list of spotted owls, wolves, water rights, Ag overtime, CAT tax , CARB and other misguided programs

Donnie Jenck  
Tillamook, OR  
97141

Sent from my iPad

**From:** [DOREEN BRADSHAW](#)  
**To:** [2022 Levzev \\* DEQ](#)  
**Subject:** Electric only vehicles  
**Date:** Tuesday, September 6, 2022 8:17:06 PM

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To DEQ or whom is considering the electric only vehicles by 2035.

Rural Oregon is not equipped , nor will it be equipped in 12 years with enough charging power for all electric vehicles.

An emergency trip many miles to town for an equipment breakdown so the harvest can be finished before the rain gets there, does not need the extra stress of the vehicle's battery running down halfway and no charger for miles.

The battery probably will run down faster when the electric vehicle is pulling or carrying a heavy load and you may be stuck again.

Where will the money come from to build charging stations and to enlarge the State electrical grid to service everyone State wide?

Even if the big cost of these vehicles comes down so lower income people can afford them, will it be enough? And I don't see public Transportation coming to Dufur or Wagontire for those who can't.

Farmer  
Doreen Bradshaw

**From:** [Dori](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Advanced Clean Cars II  
**Date:** Sunday, September 4, 2022 7:48:42 AM

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To the Parties trying to Destroy Oregon as quickly as possible:

It would seem that the agenda with this new “rule” is too remove the freedom we currently have in the USA to move about as we choose.

This is Discrimination and Classism at its finest. You clearly despise people of color and those of lesser socioeconomic status who will NOT be able to afford electric vehicles and the cost of charging them.

But that is the goal isn't it?

Is your goal to only allow the wealthy elite such as yourselves drive around at your whim, doing your important tasks that seem to only take us down the road to total tyranny?

Go live in China as I have done and you will quickly realize you are not safe at the top as the “rule makers”. This will come back to bite you as well. If not when the peasants finally are driven to their breaking point, then when your own ruling class turns on you.

As it should be clear from the tone of this comment; I completely OPPOSE the “Advanced Clean Car” plan of tyranny.

This is not “green”! Batteries are much more destructive in their creation than the use of renewable fuels by a long shot (yes I said “renewable fuels”)

I have an electric car and am keenly aware of the power the state will have to control the amount of driving/travel I am able to do if this new rule goes into effect.

The “Peasant Class” is not as dumb as you think or hope. Just admit that you actually hate the 99% having the same freedoms and abilities that you do. Just admit it and STOP thinking you are the 1% so you are safe.

Make the right choice for the freedom of the 99%.

Sincerely,

Dori Bossard  
A Very Concerned Oregon Resident

**From:** [Eric Hill](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Public Comment - Issues with transitions to Electric Vehicles  
**Date:** Tuesday, September 6, 2022 3:47:22 PM

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To whom it may concern,

I am writing to provide public comment regarding the transition to EV's. This rush to push to Electric Vehicles is far too premature, and unreliable at best. And certainly not founded in science.

Our family lives in rural Oregon. The distance to electric charging stations is much to far. Furthermore, the power grid is far too inconsistent to allow for charging at any time that may needed. Recently, our power was out for a day, which could have left us stranded if needing an electric charge. It is impractical for our family situation. Why aren't the politicians and agency people listening to rural people?

Another issue, is the generation of electrical power. We are currently seeing hydro-electric dams being taken out of service to save fish. Coal plants, which make up the bulk of the nations energy, are being taken off line. This further adds to the unpredictability of electrical energy to serve as a full time means of power.

Lastly, Solar panels and wind turbines are also unpredictable and have long term impacts that aren't fully realized.

Then there is the battery life span issue, which we haven't fully calculated. Those heavy metals required to produce the batteries are mined in a fashion that is very detrimental to the earth. Worse, they are often imported from out of country, making us less self-reliant.

Please also consider that our family and most others can't afford electric vehicles.

I write to you to ask that you please stop pushing this accelerated Electric Vehicle push. The continued constraints that DEQ and other agencies are pushing, are continuing to be part of the inflationary problem. I am opposed to the agency adopting the California rule.

Thank you,  
Eric Hill  
Linn County Oregon  
Harrisburg, OR 97446

**From:** [ekirsch@centurytel.net](mailto:ekirsch@centurytel.net)  
**To:** [2022 Levzev \\* DEQ](#)  
**Subject:** EV  
**Date:** Friday, September 2, 2022 7:57:42 PM

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Electric vehicles are a terrible idea.  
Our electric grid cannot handle the increased load.  
Just because California is stupid doesn't mean Oregon has to follow.  
Eric Kirsch, farmer, Oregon resident

**From:** [Eric Lindsay](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Comment on advanced clean cars ii  
**Date:** Tuesday, August 30, 2022 4:39:28 PM

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Please adopt the proposed rule that references California's recent move to require all zero emission vehicles by 2035. The Climate crisis is already upon us, we must act with urgency to ensure that it does not worsen.

Thank you,  
Eric Lindsay

Portland, Oregon

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*Eric Lindsay*  
*Real Estate Asset Manager*  
*Lindsay Family Trust*

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**From:** [Faith](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** eliminating gas vehicles by 2035  
**Date:** Tuesday, September 6, 2022 1:03:12 PM

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To Richard Whitman and the DEQ authorities responsible for considering a ban on vehicles that use gasoline by 2035,

I have recently become aware that you and Kate Brown would like to rid Oregon of gas powered vehicles even if that means disaster to businesses and especially farmers in Oregon. We (the people that pay taxes) should have a choice (vote) to oppose or support this policy change. Kate and her socialist appointees should not be making decisions on something as huge as this, as it affects every Oregonian.

-Oregon is already a "green" state and the decrease in gas vehicles will make only a miniscule effect on anything to do with climate. (certainly not enough to ruin our livelihoods)

-This ruling will cause increased electric grid usage that is unsustainable. This will cause brownouts and complete outages as well as increased electric utility bills. (Especially with Browns wanting to shut down more and more dams in Oregon that provide clean and safe electrical power)

-The cost of installation of charging stations and home charging stations, will be astronomical as well as the cost of buying an EV and God forbid you have to replace that Lithium battery that causes more pollution (and child labor) in the mining of those rare earth minerals, than can be saved by the use of said vehicle.

-How much money will it take to require all new parking structures to be pre plumbed with conduit that can support re-charging at all parking spaces.

-How do you expect long haul truck drivers to deliver goods in a timely manner if they have to stop every 200 miles or so to recharge their battery for several hours. (not to mention the cost of EV vehicle)

-How do you expect farmers to run their tractors and trucks (necessary for production of their crop) Just the price of diesel and fertilizer, right now, is causing price increases, can you imagine when they can't get the crop in at all due to the high cost of EVs and not having charging stations on the large fields that they plow, fertilize and harvest. If they run out of "charge" during the short window that they have for harvest, instead of working through the night to get it done they would have to take long breaks while recharging their extremely expensive equipment, and then hope that they haven't missed that window.....(so much for the food supply)

-So, the cost of the EV and the cost and time of charging (and pollution in producing the batteries ) are much greater than a gas vehicle. the distance an EV can go on one charge is significantly less than a gas powered vehicle can go on a fill up.

I see nothing positive by forcing people out of gas powered vehicles and into electric powered vehicles. How will you maintain the roads once your gas tax has disappeared? This policy will destroy



businesses and farms all across Oregon. Haven't you destroyed enough people with your draconian and unnecessary shut down during the pandemic???

We have a right to decide our fate. Let us VOTE! We are still a republic (OF, FOR AND BY THE PEOPLE) We are not a socialist state or country, at least not yet. Thank you for taking the time to read my opinion and I trust that you will see reason and common sense and not pass this legislation. Sincerely,

Faith D Roberts

--

"The problem with socialism is that you eventually run out of other people's money." Margaret Thatcher

"We fought, we dreamed, and the dream is still with us." Ronald Reagan (after losing the GOP nomination to Gerald Ford in 1976)

It cannot be emphasized too clearly and too often that this nation was founded, not by "religionists", but by *Christians*—not on religion, but on the *Gospel of Jesus Christ*. For this very reason, peoples of other faiths have been afforded asylum, prosperity, and freedom of worship here. Patrick Henry

"What country can preserve its liberties if their rulers are not warned from time to time that their people preserve their spirit of resistance?" Thomas Jefferson

**My favorite quote of Jefferson's is: "God who gave us life, gave us liberty. Can the liberties of a nation be thought secure when we have removed their only firm basis, a conviction in the minds of the people that these liberties are of the gift of God? That they are not to be violated but with his wrath? Indeed I tremble for my country when I reflect that God is just: that his justice can not sleep forever."**

Sent from [Mail](#) for Windows

**From:** [frank beebe](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** all electric vehicles by 2035  
**Date:** Tuesday, August 30, 2022 7:43:44 AM

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This is a foolish idea and one that will affect the economy as well as every citizen in this state. adversely. First there will not be the infrastructure from the electric grid to accommodate this law. The electric grid is stretched now, and due to many regulations it is almost impossible to permit new generation or transmission line construction. The farming industry, trucking industry, and all workers that presently use vehicles to perform work will be affected and should be included on this committee!

Last but not least, this proposal is a major overreach of government! The government .has no place in determining what the market place can and will. This will have a minor effect on the environment while having a major affect on our citizenry!

**From:** [Frank Slinger](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Zero Emissions by 2025  
**Date:** Tuesday, September 6, 2022 4:16:26 PM

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While I think it would be a great idea to have vehicles that would operate with zero emissions. I don't think we have a viable replacement for the internal combustion engine at this time. If we look at possible options, you have maglev cars/trains, hydrogen vehicles and electric vehicles. The only viable one of the three is the hydrogen powered vehicle. The result of burning the hydrogen out of water is an increased amount of oxygen. In the short term, the conversions for a gas or diesel powered vehicle are relatively easy and can be done by any number of mechanics with the proper training. Long term, hydrogen powered vehicles can be produced by all the major manufactures with little modifications to their assembly process.

If we are to transition to electric vehicles we will be required to make an enormous increase in our electrical infrastructure. If you have any doubt, just look at what is happening to California. They have barely begun to transition to electric vehicles and they are already telling people they can't charge their vehicles during certain times of the day, or that there will be brownouts. Because their grid just can't handle the extra load. Lets face it, just because you drop an electric charging station in a parking lot doesn't mean you have done the sufficient homework to know if we should, or if the grid can handle them. For every electric vehicle that is charged on our current grid, you have to expect that it will take electricity away from somewhere else that desperately needs it. Such as hospitals, nursing homes, factories, lumber mills, schools or any number of state and local government buildings. Not to mention all of our homes.

If the goal is to transition to an alternative means of transportation that works for everyone. Let's look at the one that will require the least amount of change first. The current thought process of transitioning to electric vehicles without first making the appropriate upgrades, is like putting the proverbial "Cart before the Horse", and we all know that will not work. If we have to transition to electric vehicles there are a multitude of options that we can take advantage of that won't require a complete and total overhaul of the electrical grid and will result in enormous amounts of electricity in our local communities where it is needed.

--

Frank L. Slinger  
President  
ISO Plumbing & Mechanical, LLC.

CCB #218186

**From:** [Fritz Ellett](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Electric vehicle mandate  
**Date:** Tuesday, September 6, 2022 6:35:00 AM

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I oppose the adoption of electric vehicle mandates. The increased cost and lack of infrastructure would be unduly burdensome.

Sincerely,

Fritz Ellett

**From:** [Gail Langellotto](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Proposed phase-out of gas powered vehicles  
**Date:** Saturday, September 3, 2022 1:58:17 PM

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To Whom It May Concern,

My name is Gail Langellotto, and I am a resident of Oregon Legislative District 15. I am writing my strong support for a proposed phase out of gas powered vehicles in Oregon. We are in a climate crisis, and bold action is needed. The hardship of the transition to electric and hybrid vehicles is negligible, when compared to the hardships our grandchildren will face on a warming planet.

Thank you for your time.

Gail

**From:** [Gary Blanchard](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** possible electric vehicle mandate  
**Date:** Tuesday, September 6, 2022 10:51:24 AM

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We are not ready for a conversion to massive numbers of electric vehicles.

My main concerns are as follows:

--what happens to us if our electric generation is incapacitated by any means – terrorism, accident, disaster, etc.

--are batteries really more environmentally friendly than fossil fuels? When considering the battery components and their disposal there would be a lot of energy used just to manufacture and use them.

--who would pay for all the charging stations needed?

--are delays at charging stations being factored into the cost of operating a huge electric fleet?

--I'm very concerned about the lack of flexibility of an all electric system.

Thank you

Gary Blanchard

Sent from [Mail](#) for Windows

**From:** [Gene Benke](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Zero-Emissions by 2035  
**Date:** Tuesday, September 6, 2022 8:33:19 AM

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Please do not implement this decision. Please Do Not for the Sake of Economy ! Trading Pollution for Pollution Not very Good ! America won't be ready for this ! Till maybe in a hundred years !! Destructive to Infrastructure until we have all Energy available and by then electric vehicles probably obsolete ? Please KILL THIS IDEA ! And prepare before dispute. Thanks Gene

Sent from my iPhone

**From:** [Jerry Palanuk](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** No way  
**Date:** Tuesday, September 6, 2022 7:58:53 PM

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This wrong has nothing to do with reality. It should not be a priority in Oregon. It will continue to destroy industry and future economic growth. It will destroy the auto industry and many jobs will be lost. Another way to destroy Oregon by over reach. Gerald Palanuk retired native Oregonian.



**From:** [gordonjr@bctonline.com](mailto:gordonjr@bctonline.com)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Electric vehicle mandate  
**Date:** Friday, September 2, 2022 5:05:04 PM

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I am not in favor of a electric vehicle mandate. First we are not ready for everyone to have an electric vehicle. We do not have the infrastructure in place, the cost for these vehicles is still to high for most of the populace. Electric vehicles have not proven to be better for towing. They are great for in town short runs but not for rural or long trips. We should never put all of our eggs in one basket. It is best to let the free market dictate when electric vehicles will out number the internal combustion engine. We don't even know what we are going to do with all used batteries.

Sent from my iPhone

**From:** [Greg Miller](#)  
**To:** [2022 Levzhev \\* DEQ](#)  
**Subject:** Please do not to adopt California's anti-rural 100% electric vehicle standards.  
**Date:** Tuesday, September 6, 2022 7:33:31 AM

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Respectfully, a simple plea, please to do not adopt California's anti-rural 100% electric vehicle standards.

Sincerely,  
Greg Miller (retired)

Sent from [Mail](#) for Windows

**From:** [Cynthia Rieben](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Opposition to electric vehicle mandate  
**Date:** Wednesday, September 7, 2022 6:42:47 AM

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I am writing to urge you not to follow California and Washington in imposing the unreasonable ban on conventionally fueled vehicles by 2035. This is a bad idea for several reasons. The charging infrastructure necessary to support such a change is not in place, and the added financial burden on taxpayers to make it happen in that short time period is unreasonable. Even if the necessary charging accessibility was available to urban areas, it is extremely unlikely it would be adequate in rural areas, which would create huge difficulty for residents there. The massive increase in electrical demand that would be created by all electric transportation would put a huge strain on an already overburdened electrical supply chain.

More importantly, electric vehicle technology is not yet to the point that it can fully replace conventionally fueled vehicles for all applications. There is no possible way to know or guarantee that such development will occur in that timeline. Banning conventional vehicles when a suitable alternative is not available does not make sense.

Thank you for your consideration,

Greg Rieben

**From:** [Heather Harris](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Cc:** [Jen Hamaker](#)  
**Subject:** I do NOT support 100% electric cars  
**Date:** Saturday, September 3, 2022 3:37:12 PM

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I oppose the proposal of making Oregon transition to 100% electric vehicles by 2035!!! I oppose electric cars period. There is a huge carbon footprint for mining the minerals required for this technology which is MORE harmful than gasoline!!! I oppose this as it will destroy our natural resources!!! Also, what is the solution for traveling long distances? In snow storms? This does not make sense.

Stop pushing your liberal California laws on Oregon!!! Just STOP!!!

Mad as hell,

Heather H  
Born and raised Oregonian

Sent from my iPhone

**From:** [Hedie Schulte](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** EV 2035 mandate feedback  
**Date:** Wednesday, September 7, 2022 12:16:01 PM

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We have concerns about Oregon's proposed electric vehicle mandate. It will disproportionately affect marginalized populations in rural areas. Driving from point to point within an urban area is much different than driving in a rural area.

Assuming that an EV owner has a charging port at home, a city dweller will have no problem maintaining their normal travel. It is possible to commute to work and handle all personal and family errands while remaining well within the range of a single charge. This is not the case for folks who live in rural areas. These folks must travel greater distances to get to work, obtain services, and run errands. Current EV units have a range of approximately 100-300 miles on a single charge. A vehicle owner with a charging station at home who lives in Cascadia, works in Albany, and has students participating in after school events could easily run out of charge before landing home at the end of the day. There are currently only two charging stations located between Cascadia and Albany where this vehicle owner could recharge. What is the complimentary plan for increasing charging locations to meet the demand created by this EV mandate?

Electric service is still unreliable in many rural areas. While rural folks are currently able to manage when the power is interrupted-this may not be the case when they can't power their vehicles and are unable to reliably get to work and services. Folks who live in town are rarely without power for any length of time. Folks who live in rural areas often must wait a few days for service to be restored after winter storms. Crews work to restore service to where there are the most people affected first.

Mandating EV use without considering the availability of power and reliability of charging stations in rural areas would be unfortunate. It does no good to have an EV if you are unable to use it because it can't be charged.

Thank you for your consideration.

*-Hedie*

Hedie Schulte  
HR & Safety Manager  
Boshart Trucking, BOSSCO Trading, and PressCo

Tangent OR 97389

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**From:** [Hedie Schulte](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** FW: EV 2035 mandate feedback  
**Date:** Wednesday, September 7, 2022 5:08:21 PM

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Here's a timely example of what I am referencing in the email above. Rural Linn County may be without power for an extended time.

<https://evb.gg/n#yozzzz1zdio/09VoZ8p0>

**From:** [Ian Krogh](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Public comment for advisory committee consideration  
**Date:** Monday, September 5, 2022 9:24:19 AM

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With regard to the proposal for Oregon to adopt by reference California's "Advanced Clean Cars II" rule, the proposal is unacceptable. The phasing out of gasoline-powered cars is too big of an issue and will negatively affect too many people to be executed by a rule change. If such a phasing-out is to occur, the issue must be referred to the voters, not arbitrarily executed by an unelected bureaucracy. And even by principle alone, Oregon's laws should not be dictated to us from another state. California voters are not Oregon voters.

Ian Krogh  
Portland, Oregon

**From:** [Jacob Wilson](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Advanced Clean Cars II  
**Date:** Saturday, September 3, 2022 7:53:43 PM

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Oregon is not California. We do not have sunny weather all year around nor do we all live Portland. 90% of the state is not a city, we drive to work, commute over mountain passes and much of eastern Oregon is very spread out. Removing gas engine cars from Oregon will do as much good to the environment and does the same rule to continue to protect wolves. How about stop forcing people to do what you want to do and allow us to buy the vehicle we need or want. This is a FREE Country last I checked and I didn't go to war twice for you to force draconian laws on to American Citizens. Electric cars are not efficient enough, nor environmentally friendly enough to be the be all answer to climate change. How about you go do your research on how the batteries are made and what happens when they need to be changed out in the car.....

DO BETTER!

**From:** [Jaime Yturriondobeitia](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Electric Vehicles  
**Date:** Saturday, September 3, 2022 5:07:37 AM

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To Whom It May Concern,

I am writing to urge you to be sensible when considering the transition to electric vehicles in our state, and our nation.

The urban vs rural divide is a true problem in this issue.

Please do not blindly follow California in forcing this issue before infrastructure and available vehicle technology are functional and affordable for those involved in agriculture.

All urban commuter cars, taxis, shuttles, etc should be electric ASAP. It makes sense that anyone travelling less than 40 miles per day should have an electric vehicle and the opportunities to get and use electric vehicles should be supported and encouraged--but not forced!

However, until the charging speed and capacity increase (both in the vehicles and in the electric grid), trying to force people who need to travel further distances to buy electric vehicles is going to cause much unnecessary hardship.

Let's focus on figuring out how to create enough renewable electricity before we force everyone into using electric vehicles please.

Best regards,  
Jaime Yturriondobeitia  
Southeastern Oregon



**From:** [Jan Esler-Rowe](#)  
**To:** [2022 Levzvez \\* DEQ](#)  
**Subject:** Electric vehicles  
**Date:** Saturday, September 3, 2022 12:11:40 PM

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I am writing to request the decision to ban gas powered vehicles in Oregon be delayed until our infrastructure will support charging millions of EV vehicles on a daily basis. To ban gas powered vehicles before that time is putting the cart before the horse.

Oregonian's do not earn the incomes required to purchase these costly vehicles nor to replace the batteries every five years. This puts low income people of color and senior citizens at a disadvantage.

Respectfully submitted,

Jan Esler-Rowe  
Milwaukie, OR 97222

**From:** [Janay Trimble](#)  
**To:** [SAKATA Rachel \\* DEQ](#)  
**Subject:** Emissions rule  
**Date:** Wednesday, September 7, 2022 3:50:19 PM

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I am against any more emissions rules for Oregon. This is going to make businesses exit this state! Bad for business ! Please forward this comment to the right committee if this is not the correct place for comment.

Thank you,

Janay Trimble  
Sent from my iPhone

**From:** [Jason Hunton](#)  
**To:** [2022 Levzhev \\* DEQ](#)  
**Date:** Friday, September 2, 2022 5:51:12 PM

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I'm opposed to the current rule making as proposed for all electric vehicles by 2035. I DO support it being rolled out much like the Minimum Wage proposal was enacted with certain Urban areas REQUIRED while the rural areas not stepped up as much due to cost structures.

--

**Best-**  
**Jason**

**From:** [Jason Motley](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Advanced Clean Cars II  
**Date:** Monday, September 5, 2022 8:43:56 AM

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I am writing in support of adopting these rules. In my opinion it should be sooner than 2035. The proverbial can has been kicked down the road too many times. I feel like this is once again pushing a controversial issue to a different legislature and governor but we have to keep striving for a better, cleaner future. Please adopt the proposed Advanced Clean Cars II rules.  
Thank you

**From:** [Jason Powell](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** New Vehicles Rule  
**Date:** Tuesday, September 6, 2022 3:19:58 PM

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The new rules being proposed on banning gas vehicles will be absolutely destructive. Electric cars do not have the capabilities that gas vehicles do. They do not have the range that gas vehicles do. Parts of the state, outside the i5 corridor and Bend do not have the infrastructure for this. You cannot make rules and then hope that everything falls into place for the new rules to work. You can't hope the infrastructure will be there. You can't hope that electric vehicles will be good enough to idle on the pass or in i5 traffic for 4 hours by then. You can't hope that electric vehicles will be capable of lasting through a snowstorm by then. You can't hope that the power grids will be able to handle that by then. You can't hope everyone will be able to afford this by then. You must abandon this ridiculous quest now.

**From:** [Jeff Corcoran 2022](#)  
**To:** [Levvezv \\* DEQ](#)  
**Subject:** comments re: banning gas powered cars by 2035  
**Date:** Tuesday, September 6, 2022 6:08:38 PM

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I appeal to you to please consider these comments!

I am hopeful that Oregonians are smart enough NOT to follow Governor Newsom and California as they jump off the cliff!!!

Just look at the evidence, NOT the emotional flag waving for the green agenda... PLEASE!

If you have been watching the news in the last week, you will have noticed that just 4 days after California made the big headlines to end the sale of gas powered cars, they were asking people NOT to charge their electric cars because of the lack of power on their power grid!!! I have watched news reports (literally) from around the world as they make fun of the idiots running the state of California. They have become the laughing stock of the world! They don't have enough generating capacity for the current needs, there is NO WAY they will be able to supply enough electricity if everyone switches over to EV's!!

Reality check #2, currently about 60% of the electrical generating capacity in the U.S. is from fossil fuels. So getting an EV is not the answer if the electricity to charge it comes from fossil fuels. You might as well just keep you gas powered car.

This idea may sound great in theory but it will be a HUGE mistake!!!

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**Jeff Corcoran**

*"We go together"*

**From:** [Jeffrey Yeager](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** No to banning gas powered vehicles  
**Date:** Wednesday, September 7, 2022 1:10:01 AM

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Hello,

I am staunchly opposed to any idea that will ban gas powered vehicles. I like many other Oregonians believe this is one of the worst ideas that has ever been thought of. A vast majority of democrats and republicans are vehemently opposed to banning gas powered vehicles. This would drastically harm millions of Oregonians, and would decimate many businesses, and would drive people to leave the state. For me and my family we would leave the state and go somewhere with common sense. DO NOT ban gas powered vehicles! Thank you.

V/r  
Jeff Yeager

--

V/r  
Jeff Yeager

**From:** [Jennifer Hamaker](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Opposing DEQ's Ban on Sales of Gas Powered Vehicles  
**Date:** Monday, September 5, 2022 11:30:35 PM

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To Richard Whitman and the DEQ authorities responsible for considering the ban on vehicles that use gasoline by 2035,

Oregonians should have the choice to oppose or support this policy change. Oregon's supermajority and the appointments for over 250 boards and commissions made by Kate Brown should not overrule Oregonian's choice, especially for this big of a policy change. This is not a rule, it's a statewide policy that effects every Oregonian.

California's new Advanced Clean Car policy may be good for California, but that's not the case in Oregon. California ranks the 2nd highest contributor to GHG emissions at 358.8 million metric tons annually whereas Oregon contributes 38.3 million metric tons annually. Out of all states, Oregon has the 5th lowest carbon emissions per capita. As a reference, China contributes over 9.9 billion metric tons of GHG emissions annually. Globally, 33.6 billion tons of CO2 is emitted annually. Oregon contributes .11% of the worlds emissions.

Oregon is already a green state. Oregon's DEQ's Director Richard Whitman, was asked what impact on global carbon would occur if Oregon were to reduce its' emissions to zero, he responded: "Rep. Brock Smith, you are correct that Oregon's portion of global carbon emissions is, I'll use the word minuscule."

Oregon's HB 2021 requires retail electricity providers to reduce greenhouse gas emissions associated with electricity sold to Oregon consumers to 80 percent below baseline emissions levels by 2030, 90 percent below baseline emissions levels by 2035 and 100 percent below baseline emissions levels by 2040. Oregon's strict rules and regulations force utility companies to look outside of our state to produce 'green' energy. I am concerned with what our energy costs will be and grid reliability if you choose to adopt California's Advanced Clean Car policy.

Hydroelectric power makes up the largest portion of Oregon's electricity resource mix, followed by coal and natural gas. Hydroelectric power is considered renewable energy by Oregon. With our Renewable Portfolio Standard, half of Oregon's electricity will come from renewable resources by 2040. How will this be accomplished if we are removing our dams that produce hydroelectricity?

Oregon's Global Warming Commission's 2020 report states:

"Oregon's per capita sector-based emissions are 32 percent lower than U.S. per capita emissions, having dropped by 25 percent since 1990."

"While impacts to our economy do have an effect on emissions, Oregon GDP and emissions have largely been decoupled since 1997. From example, from 1997 to 2014, Oregon's real GDP increased by almost 80 percent while total GHG emissions declined by approximately 11 percent.

Oregon's Global Warming Commission recommends the following to our State Legislature:

"19. Oregon's Global Warming Commission strongly suggests: "In rulemaking, the Department of Environmental Quality should consider allowing certain charging infrastructure projects to receive advanced clean fuels credits as a loan to help offset the upfront capital costs."

"20. The Building Codes Division and local jurisdictions should accelerate the process for adoption of new building codes to require all new garage structures to be pre-plumbed during construction for conduit that can support recharging at all parking spaces, and develop rules for including charging infrastructure in existing building stock."

These are aggressive and expensive changes aimed at supporting Kate Brown's Executive Order 20-04 made during a pandemic under her declared and prolonged emergency powers that had nothing to do with the pandemic. Banning the sale of gas powered vehicles is also aggressive and expensive on many levels.



My concerns with adopting this new ban on gas powered vehicle policy within 13 years:

Currently, Oregon has inadequate charging infrastructure. Power grids are already strained, this policy will add more strain with vehicles requiring charging.

One of the biggest challenges to EV adoption is the battery production process and supply chain. New mining and supply chains are needed to support EVs. There are a lot of minerals required to produce batteries for EVs, as a result, there's a lot of mining and transportation of materials involved.

Electric vehicles lose charge when parked although it is minimal, it can add up over time. Green Car Reports suggest you charge your battery at least 80% before parking the car.

Electric cars can travel less distance-

AEVs on average have a shorter range than gas-powered cars. Most models ranging between 60 and 120 miles per charge and some luxury models reaching ranges of 300 miles per charge. For comparison, gas powered vehicles will average around 300 miles on a full tank of gas, and more fuel efficient vehicles getting much higher driving ranges. This may be an issue when looking at AEVs if you frequently take long trips. Availability of charging stations can make AEVs less suitable for activities like road trips. Oregonian's love their road trips.

EVs' most prominent advantage is their potential to use fuel that produces no direct GHG emissions. Although EVs do not produce any tailpipe emissions, their total emissions depend on the emissions intensity of the electricity they use. For example, an EV powered completely by solar power would produce zero carbon dioxide ("CO<sub>2</sub>") emissions for each kilowatt-hour ("kWh") of energy consumed, whereas one powered entirely by coal-fired electricity would emit about 2.07 pounds of CO<sub>2</sub> per kWh consumed. This equates to about 0.66 pounds of CO<sub>2</sub> per mile. By comparison, a gasoline-fueled passenger vehicle with average fuel economy (24.8 miles per gallon)<sup>15</sup> emits about 0.98 pounds of CO<sub>2</sub> per mile. Thus, an EV powered exclusively by coal would emit CO<sub>2</sub> equivalent to a car that achieves about thirty-five miles per gallon. As a result, an EV powered exclusively by coal-fired electricity would still reduce about 0.32 pounds of CO<sub>2</sub> per mile compared to a gasoline vehicle with average fuel economy.

If EVs replace an average vehicle driven 11,824 miles per year—the average number of miles driven per year in the United States—then an EV could save between 5.2 metric tons of CO<sub>2</sub> emissions per year (when powered by zero-emissions electricity) and 1.7 metric tons of CO<sub>2</sub> emissions per year (when powered exclusively by electricity generated from coal). Significantly, however, these comparisons are between EVs and cars with average fuel economy. \*\*When compared to more fuel- efficient vehicles like hybrids, EVs can emit more GHGs when using power generated primarily from coal\*\*

Electric cars take longer to "refuel"-

Fueling an all-electric car can also be an issue. Fully recharging the battery pack with a Level 1 or Level 2 charger can take up to 8 hours, and even fast charging stations take 30 minutes to charge to 80 percent capacity. Electric car drivers have to plan more carefully, because running out of power can't be solved by a quick stop at the gas pump.

Lithium ion batteries used in EVs also do not perform as well in cold temperatures, which can lead to further range reductions. Their general findings are that drivers of an average EV might see about half of the manufacturer's official range. If the average range is 200 miles per charge, the range will decrease to 100 miles before required charging in cold temperatures.

Electric cars are more expensive, and battery packs may need to be replaced-

The battery packs within an electric car are expensive and may need to be replaced more than once over the lifetime of the car. All-electric vehicles are also more expensive than gas-powered cars, and the upfront cost of all-electric vehicle can also be prohibitive. However, the fuel cost savings, tax credits, and state incentives can help to offset this cost overall if they are available.

Finite critical minerals and rare earth metals-

EVs use about six times more mineral inputs than ICE vehicles. The IEA's forecast of 70 million EVs on the road by 2040 will be accompanied by a 30-fold increase in demand for minerals. There is no shortage of these resources underground, but rather a concern as to whether they will be extracted sustainably, in line with social responsibility

governance, and in time to meet demand. It is anticipated that there will be a shortage of nickel and challenges in scaling up lithium production. This supply shortage may also cause manufacturers to use lower-quality mineral inputs, adversely affecting battery performance.

Oregonians have a right to decide our fate! Please let us vote instead of sealing our fate.

Genuinely concerned,

Jen Hamaker  
Oregon Natural Resource Industries

Sent from my treehouse made of renewable and sustainable wood.

**From:** [Jenn Woodward](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** NO on electric vehicles  
**Date:** Saturday, September 3, 2022 2:51:03 PM

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No on the green energy Bill!

The citizens of Oregon want no part in following California's lead of banning gasoline powered vehicles only to be replaced by electric vehicles that require more fossil fuel to produce batteries!

Vote NO on electric vehicle bills

--

Jenn Woodward

**From:** [Jennifer Williams](#)  
**To:** [2022 Levzhev \\* DEQ](#)  
**Subject:** Gas car sales  
**Date:** Tuesday, September 6, 2022 9:27:34 AM

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I am a registered voter and homeowner in Clackamas county and strongly disagree with banning gas powered vehicle sales in our state. We should be able to choose what type of vehicle we buy. CA is already seeing a problem in electricity consumption and have restricted electric vehicle charging. One other point to consider, environmentally, what are we going to do with all these batteries once their shelf life has expired? This is a huge environmental mistake that only satisfies our short term desires.

Thank you for your time.

Jennifer Williams

Sent from my iPad

**From:** [Jeremy Haladyna](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Explain effect on electric grid  
**Date:** Tuesday, August 30, 2022 6:16:14 PM

---

Oregon should not simply mimic what California is doing. California hasn't the grid capacity to effect this change, and Oregon likely doesn't either.

Environmental virtue signaling is no excuse for prudent planning. Explain the effect of this proposed change on electric generation capacity through 2035.

Jeremy Haladyna

**From:** [Jeremy McKenna](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Advanced Clean Cars II  
**Date:** Sunday, September 4, 2022 1:44:25 AM

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I am a resident in Oregon and I am against the mandated electric car by 2035. People who routinely drive long distances across the country will be hurt by this making their trips longer. Also hobbies like camping and hunting will take a hit. I routinely drive a couple hundred miles from western Oregon to eastern Oregon to hunt. I'm off grid for a week or more when I camp or hunt. Driving out to these areas with no charging stations in the mountains would leave people stranded and put them in danger. Please stop with this mandated non sense, we all don't live in cities that have charging stations everywhere. This is just another government overreach that hurts rural citizens. We exist too.

-Jeremy McKenna

**From:** [Jerry WILLIAMS](#)  
**To:** [2022 Levzhev \\* DEQ](#)  
**Subject:** Stop the ban of gas powered vehicles!!  
**Date:** Tuesday, September 6, 2022 7:46:20 PM

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To whom it may concern,

The thought of banning gas powered vehicles is unsustainable, there is not enough electric capacity or structure to take care the load in Oregon. The majority of electric is powered by natural gas, coal, not wind or solar, how is this cutting carbon output if in producing electricity causing more pollution. There is not the capacity in battery farms to store the electricity that would be required to use only solar and wind to produce electricity!

Those who are at the lower end of the economy can not afford to buy new electric vehicles. Even as a middle class citizen I am not able to buy an electric vehicle.

As well living in a rural area who would supply all the electric charging stations! If unable to charge an electric vehicle because of the power blackouts how are citizens supposed to get to hospitals doctors or purchase food, services and necessities, if the battery is not charged!! Again the structure of power lines, substations for transfer power, and capacity in power lines to homes with larger transformers required. And who is going to pay for the rewiring and new larger electric panels required in some homes?

Farmers working 24 hours around the clock to bring in the crops can not charge electric vehicles in the fields. The cost of replacement of equipment would destroy our farms and farmers as well make their products to high in the world market place!

I say no to this plan which is unnecessary and extremely expensive! It is time to think about the American people, Oregonians and their needs, well being, and the extreme cost to the citizens. Electric costs will go up along with taxes to pay for this enough is enough. The taxes and cost of living in Oregon are already at the top end in the United States!

We are already suffering from inflation and the cost of living associated with all that has been going on in Oregon! NO MORE!

Respectfully,  
Jerry L Williams

Lebanon, Oregon  
97355

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From: Jerry Lenhard  
Sent: Tuesday, September 6, 2022 3:52 PM  
To: SAKATA Rachel \* DEQ <Rachel.SAKATA@deq.oregon.gov>  
Subject: Adopting California's Advanced Clean Car 11 rule

As a taxpaying citizen of Oregon my say is: Don't Do it.



**From:** [Jessica Frieboes](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Gas powered vehicle ban proposal  
**Date:** Tuesday, September 6, 2022 10:07:31 AM

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Hello,

What a breathtaking abuse of power of our local government and a true pity that this comment would need to be submitted at all, and yet the result of such ridiculous proposals as this gas powered vehicles ban being proposed by DEQ have forced my hand and has required this response...

No, you should not place any "bans" in any capacity whatsoever on any gas powered vehicles, public or private. If this legislation is passed against the will of the voting public and against the common sense that you should possess as public officials, the fall out from a populace you've forced into crushing poverty as a result of this "ban" will not react kindly to such draconian overreach.

You may reach me for further comment if you wish, and I will be suggesting to all our local friends and contacts to reach you with their comments against this proposal as well.

Have a lovely day,

Jessica Frieboes  
Oregon City resident

Sent from my iPhone

**From:** [Jim Ferraris](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Proposed Rule  
**Date:** Sunday, September 4, 2022 9:58:31 PM

---

I am NOT in favor of any proposed rule which bans the manufacture and/or sale of gasoline powered motor vehicles in Oregon.

Jim Ferraris

Sent from my iPhone

**From:** [Jim Heath](#)  
**To:** [2022 Levzvez \\* DEQ](#)  
**Subject:** Comment  
**Date:** Monday, September 5, 2022 4:00:42 PM

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Oregonians should have the choice to oppose or support this big of a policy change via the ballot. This is not a simple rule, it's a huge statewide policy that effects our Oregon lifestyle and livability.

Oregon is already a green state. Our portion of global carbon emissions is minuscule.

My concerns with adopting this new BAN on gas powered vehicles are:

- Currently, Oregon has inadequate charging infrastructure. Power grids are already strained, this policy will add more strain with vehicles requiring charging.
- One of the biggest challenges to EV adoption is the battery production process and supply chain. New mining and supply chains are needed to support EVs. There are a lot of finite critical minerals and rare earth metals required to produce batteries for EVs. A lot of mining and transportation of materials is involved.
- Electric vehicles lose charge when parked although it is minimal, it can add up over time. Green Car Reports suggest you charge your battery at least 80% before parking the car.
- Electric cars can travel less distances.

Also, this is not California and lithium ion batteries used in EVs do not perform as well in cold temperatures, which can lead to further range reductions. General findings are that drivers of an average EV might see about half of the manufacturer's official range. If the average range is 200 miles per charge, the range will decrease to 100 miles before required charging in cold temperatures.

Electric cars are more expensive than gas-powered cars and battery packs will need to be replaced. The upfront cost of all-electric vehicles is prohibitive. The battery packs within an electric car are expensive and may need to be replaced more than once over the lifetime of the car. However, the fuel cost savings, tax credits, and state incentives can help to offset this cost overall if they are available.

Oregon's Global Warming Commission's 2020 report states:

"Oregon's per capita sector-based emissions are 32 percent lower than U.S. per capita emissions, having dropped by 25 percent since 1990."

Oregon contributes .11% of the worlds emissions.

Oregon is already a green state. Oregon's DEQ's Director Richard Whitman, was asked what impact on global carbon would occur if Oregon were to reduce its' emissions to zero, he responded: "...Oregon's portion of global carbon emissions is, I'll use the word minuscule."

This rule is too substantial, with too significant an impact to not allow the public debate a

ballot initiative would provide. Please let us vote on this issue.

Sincerely,  
J. Heath

--  
Jim and Linda Heath  
Talent, OR 97540

**From:** [James .](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Electric Vehicles Future Choice  
**Date:** Wednesday, September 7, 2022 11:36:35 AM

---

To Whom It May Interest

Electric cars make sense and work well for some people. But they are not suitable for all people and situations. We should be able to choose the style car we prefer without government directives. Please do not create laws that require EV's by some date. There are many scientific reasons why EV's should not be mandatory. Too many for this short msg.

Regards,

Jim Talt  
Newberg, OR

Sent from [Mail](#) for Windows

**From:** [Jo Ohlhausen](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Banning gas vehicles  
**Date:** Sunday, September 4, 2022 11:01:05 AM

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To the Parties trying to Destroy Oregon as quickly as possible:

It would seem that the agenda with this new “rule” is too remove the freedom we currently have in the USA to move about as we choose.

This is Discrimination and Classism at its finest. You clearly despise people of color and those of lesser socioeconomic status who will NOT be able to afford electric vehicles and the cost of charging them.

But that is the goal isn't it?

Is your goal to only allow the wealthy elite such as yourselves drive around at your whim, doing your important tasks that seem to only take us down the road to total tyranny?

Go live in China as I have done and you will quickly realize you are not safe at the top as the “rule makers”. This will come back to bite you as well. If not when the peasants finally are driven to their breaking point, then when your own ruling class turns on you.

As it should be clear from the tone of this comment; I completely OPPOSE the “Advanced Clean Car” plan of tyranny.

This is not “green”! Batteries are much more destructive in their creation than the use of renewable fuels by a long shot (yes I said “renewable fuels”)

I have an electric car and am keenly aware of the power the state will have to control the amount of driving/travel I am able to do if this new rule goes into effect.

The “Peasant Class” is not as dumb as you think or hope. Just admit that you actually hate the 99% having the same freedoms and abilities that you do. Just admit it and STOP thinking you are the 1% so you are safe.

Make the right choice for the freedom of the 99%.

Sincerely,  
A Very Concerned Oregon Resident

Jo Ohlhausen  
Sweet Home

Sent from my iPhone

**From:** [Jo Ohlhausen](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** I say no!  
**Date:** Sunday, September 4, 2022 11:05:12 AM

---

To whom it may concern,  
In regards to banning the sale of gas fuel run vehicles I have one word, NO.

I understand we need to rethink how we move forward in a world where we are trying to reduce our carbon footprint but banning gas powered vehicles is not the answer. These electric vehicles are not the clean energy our politicians keep cramming down our throats. The amount of destruction and energy that goes into manufacturing the batteries that supply the power for these electric vehicles should give anyone pause. And what of the disposing of these batteries once they go bad? We need to find a balance in utilizing all sources of energy. To close the door on the sale of gas powered vehicles will only create a new environmental crisis. Look at what happened in California just last week when they banned the charging of all electric vehicles during certain hours due to the strain on their already weak power grid.

Please just stop. We need to think these things through and come up with a balanced and fair solution not just a knee jerk solution that hasn't been thoroughly thought through!

Jo Ohlhausen

Sent from my iPhone

**From:** [Joan Haines](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Proposed Zero Emissions Car Rules  
**Date:** Wednesday, September 7, 2022 12:24:39 PM

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Good afternoon, I am adamantly opposed to following in the wake of California and Washington when it comes to this proposed rule!!

Let me quote the well-written reason that I agree with one hundred percent: "... the cost of electric vehicles, which remains much higher than their fuel-based counterparts, is out of reach for many farm families, who are seeing ever slimmer margins in the face of increased regulatory pressures from the state. Further, this rule requires electrification before the infrastructure is available, particularly in rural areas, to support electric vehicles, particularly for work trucks that are used exclusively in remote areas of the state, miles from any charging station. Most farms and ranches do not have EV charging capacity on farms, and do not have the resources to install such facilities. This rule represents another burden on rural communities from an agency who fails to understand the different vehicle needs in rural areas than urban areas, where charging infrastructure is more readily available."

I am following this development closely and I urge you strongly to consider what is best for the citizens of our state, and especially those who work so hard to provide the basic necessities not just for "us" but for you as well!!!

Respectfully,

Joan Haines

--

**"This is the day which the Lord hath made. Let us rejoice and be glad in it."  
Psalm 118:24**



**From:** [Joan Mellies](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** EV only 2035 agenda  
**Date:** Monday, September 5, 2022 7:41:35 AM

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Exactly how many times must Salem be told to stop following in the footsteps of the insanity coming from our southern neighbors? Regular, thinking people do NOT want to have their choices taken from them. It is absolutely pure govt overreach & tyrannical oppression to force people to purchase a vehicle that is not only out of their price point, but unreliable & less efficient & far more damaging to the overall environment.

EVs are not environmentally friendly, as you people would have the ignorant to believe. The mining damage alone is absolutely detrimental to our blessed earth. Then we have the issue of rolling blackouts every single summer! How do you propose people get to work when you shut off the power & forbid them from charging? Where do you think that electricity is derived from?

You, the govt as a whole, believe the general populace to be so ignorant as to believe that you will not use the computers in these vehicles to control who gets to travel & who does not. You've already done a bang-up job with your mandates as our "leaders". You need to re-read our Constitution. We are a free people. We are your Creator & master. You are not ours. You cannot legislate us into slavery per Marbury vs Madison, any rule, law, mandate, statute, order (executive or emergency), etc which is repugnant to our Constitution is null & void & unenforceable. Our Constitution is the Supreme Law of the land. It grants us the right to travel uninhibited.

If you intend to force the people into your climate wealth redistribution scheme here in Oregon, I will make it my remaining life's ambition to reverse this as it will put me out of work. If it means I have to get on a horse or walk to the capital, I will make this stop. The insanity MUST be brought to a halt. There comes a time when good people must take a stand. You, as a whole, have made it abundantly clear that you care nothing for your fellow people, but only wish to fleece us of every penny we work so hard for. What are your intentions when we can no longer be bilked? Do you intend to euthanize us like animals when we are no longer of use? When do you say enough?

Do the right thing & STOP THIS INSANITY. Just stop it!

Joan Mellies

**From:** [Joanna Allison](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Comment on Banning Gas Vehicles  
**Date:** Monday, September 5, 2022 9:00:12 PM

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Dear to whom it may concern,

I strongly disagree with banning gas vehicles in Oregon. We do not have the power grid to handle this type of electricity needed for electric vehicles as we are unable to power AC units in the Summer without a black out and power outage occurring. There is no logical reason to ban gas powered vehicles as this hurts the working class, a majority of Oregonians, and only benefits the elites.

Please let me know how many gas vehicles are in the state of Oregon and the ridiculous notion this would take to implement.

Electric vehicles are not going to be long term sustainable and we have already seen issues in California when the weather is too warm and they ask their citizens not to charge their electric vehicles.

I am a born and raised Oregonian and I vehemently oppose this idea to ban the sales of gas vehicles by the year 2035.

Stop making stupid policies that aren't a benefit to the majority but only the wealthy. We are SICK of it!

Sincerely,  
Joanna Allison

Resident of Beaverton, OR

**From:** [John Lee](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** electric vehicle mandate - NO  
**Date:** Friday, September 2, 2022 5:29:29 PM

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I oppose all mandates. Please consult the experts at [www.co2coalition.org](http://www.co2coalition.org) and learn what a fraud the "climate change" and "green energy" agenda really is.

co2 is plant food - it's a necessary part of the natural life cycle.

I am all for conservation, efficient design and wise use of resources - but electric vehicle mandates are not a solution and will create more problems for Oregonians and our economy.

--

John Lee  
Lee Real Estate  
Accredited Land Consultant

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[www.northwestfarmbroker.com](http://www.northwestfarmbroker.com)  
[OUR FARM LISTINGS](#)

**From:** [Jon Iverson](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Proposed Electric Vehicle Mandate. Opposed  
**Date:** Friday, September 2, 2022 4:41:05 PM

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To whom it may concern,

I deeply concerned by Oregon considering an all electric vehicle mandate similar to the one California passed. While I like the idea of more vehicles becoming electric until we know our electric grid is up for the demand of all these electric vehicles this is just a bad idea. Emergency vehicles especially need to be exempt in case of a large scale disaster causing mass power outages.

Secondly this will hurt low income earners as right now most electric vehicles cost substantially more than gasoline vehicles.

Let the technology further advance and mature before making such a drastic mandate.

Thank you,

Jon Iverson

Sent from my Verizon, Samsung Galaxy smartphone

**From:** [Jordy P](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Internal combustion engine ban.  
**Date:** Tuesday, September 6, 2022 2:55:14 PM

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So what about those of us who drive older vehicles that would not meet the new standards? And further can not afford a newer vehicle that does meet the new standards? What are we supposed to do? California is a state that has nearly 40 million people. Oregon has a little over 4 million. This is not fair for low income Oregonians. I thought we were a priority in the Oregon house of representatives? I hear about it all the time about how much y'all are doing to help the working class the low income class. Well the working class needs to work and how are we going to work and take our kids to school to doctors appointments to their little league games? Buy a new car we can't afford? This is not a realistic goal for a lot of Oregonians. What are we supposed to do if this becomes law? Oregon is NOT! California. Not to mention Californians are flocking here every day to get away from the mess that California has become. We should not make the same mistake here. As a tax paying Oregonian that loves his state this is not the way. It would affect those who are the most vulnerable. The paycheck to paycheck families. And what happens to my vehicle if this goes into law? Do I just scrap it? Y'all gonna cut me a check for its value? Thanks.

A very concerned citizen

**From:** [Joseph Bain](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Electric cars  
**Date:** Monday, September 5, 2022 12:53:00 PM

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Rumor has it that someone (can't be you because we didn't vote for you or this idea) is considering following the idiotic decision to ban real cars like California did; who is experiencing blackouts due to overuse of the power grid.

I would also ask if you have seen a lithium mine and the destruction to the environment. The 'gee' we can't see it so it doesn't exist mentality has to stop! You holy guardians of the environment need to put your pot away and look at real facts, not the crap Brown and CNN spits out on a regular basis. Overall, going electric is more harmful to the environment than conservative use of fossil fuels.

And hey where are all those lithium batteries going when they can no longer store adequate electricity? I also ask who can afford an \$80,000 car with a \$30,000 battery?

Also, all these damn electric cars are subsidized; so if they are so wonderful, why do they need subsidizing?

Get real for a change. BTW, sneaky having the deadline low key and over a 4 day weekend.

Joseph Bain  
Bain Insurance Agency  
Bandon, OR 97411

**From:** [Joshua Bossard](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Following California  
**Date:** Monday, September 5, 2022 3:02:41 PM

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I would like to voice my strong opposition to this proposal. I am the happy owner of 2 electric cars that I charge daily through solar without using a kilowatt of grid power. I am obviously satisfied with this arrangement.

My concern is for the vast majority of Oregon residents who cannot afford this set up. I believe this kind of agenda is perceived by a large percentage of the driving population as an attack on the poor and an affront to their liberty. Even though I can afford these things I can easily see their concerns. California is ambitiously moving toward electric cars and at the same time asking people to not drive them to protect the ever-weakening power grid. It is not hard to imagine that there will be a day in the near future that with the legislative stroke of a pen they will mandate the times that the average citizen will be allowed to drive. Coloradans just experienced loss of control of their thermostats in times of high demand.

This is a bad move for Oregon. Pushing these agendas not only angers and alienates the citizens, when it's done on the name of the environment it casts something that should be good as bad.

Oregon needs to lead with innovative and agreeable solutions not just follow California.

**From:** [Josh Goodman 2022](#)  
**To:** [Levvzev \\* DEQ](#)  
**Subject:** Public Comment for Proposal for Oregon to Adopt California's Advanced Clean Cars II Rule  
**Date:** Monday, September 5, 2022 11:28:37 AM

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Hello,

My name is Joshua Goodman and I am an Oregonian who wishes to submit a comment to DEQ's advisory committee considering the proposal for Oregon to adopt California's Advanced Clean Cars II Rule. My comment is below. Thank you!

Comment:

I write to express my strong support for Oregon's plan to adopt California's Advanced Clear Cars II rule, which would prohibit the sale of gas-powered light-duty vehicles in Oregon by 2035. I support this proposal for two key reasons. First, climate change poses a severe threat to Oregon, the United States, and our planet, including more extreme summer heatwaves and wildfires here that have already and will continue to lead to preventable deaths in Oregon and beyond. Given that transportation is the single largest source of greenhouse gas emissions, the proposed rule is an essential step in lowering greenhouse gas emissions that contribute to climate change. Second, gas-powered vehicles pollute noxious fumes into our communities, leading to elevated rates of asthma, heart disease, stroke, COPD, emphysema, and a host of other conditions for people who live near highways and other roads with high traffic. Additionally, there is research to indicate that high exposure to pollution during early developmental years affects later academic achievement. Banning the sale of gas-powered vehicles will substantially lower these risks, and will foreseeably improve the health and lifespan of people who live near highways and make it more likely that children who grow up near highways can reach their full potential. Given that people who live in poverty are more likely to live near a highway, taking steps to reduce the pollution from highways is an important step for addressing the health disparities faced by Oregonians who live in poverty.

I recognize that accelerating the switch to all electric vehicles necessitates addressing certain logistics, including the supply of electric vehicles, demand on our electricity system, access to charging stations, and how we pay for road maintenance with reduced gas tax revenue. While I recognize that there is much work to do, I believe that the 12 years that this proposal calls for provides ample time to implement the necessary logistics and facilitate a successful transition to all electric vehicle sales. Furthermore, given the urgency of addressing climate change and localized pollution on community health, I believe that waiting any longer than necessary to make this transition would come at an unacceptable cost to the health of our communities.



**From:** [Joyce Nease](#)  
**To:** [2022 Levzev \\* DEQ](#)  
**Subject:** Public Comment regarding rulemaking ban internal combustion engine powered vehicles  
**Date:** Tuesday, September 6, 2022 3:00:59 PM

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I'm afraid the Democrats' push toward Green Energy is going to become their worst debacle! Until you can build car batteries that do not kill our planet through mining for the necessary metals needed to build the batteries (whether in America or China!), then we shouldn't be pushing for Electric Vehicles. And until we can find a dependable way to charge those batteries, we shouldn't be pushing for Electric Vehicles. And maybe Oregon should try to be a common-sense leader in this instead of following California down their road to economic failure! NO to banning the internal combustion engine powered vehicles!

Joyce Nease  
Albany, OR

Sent from [Mail](#) for Windows

**From:** [Justin Bach](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** NO on combustion engine "ban"  
**Date:** Tuesday, September 6, 2022 8:10:36 PM

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To Whom It May Concern:

If the leadership of our state continue to desire to be California, by praxis, then they might as well petition to be made one big state of California.

The idea of completely replacing combustion engines in our state with electric or some other unknown form of power is so very near sighted, at best, and quite frankly stupid AND ignorant.

How about we take a little look at the bigger, i.e, international and global, impact of such a narrow minded decision.

Disregard. If the general public is asking the leadership of this state to use common sense before making such a ridiculous decision, then it's too late for all of us. Good luck in taking one more major step in destroying our state. One stupid decision after another.

-Good Day

Sent from my iPhone

**From:** [Kamala Pati](#)  
**To:** [2022 Levzhev \\* DEQ](#)  
**Subject:** Mandate electric vehicle  
**Date:** Monday, September 5, 2022 10:54:38 AM

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Dear sirs: I am writing to strongly oppose this proposition. It is foolhardy.  
Sincerely Kamala Pati

**From:** [Kami Forslund](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Opposition notice  
**Date:** Tuesday, September 6, 2022 9:14:07 PM

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To whom it may concern:

I am writing to you today to voice my opposition to any regulation that would ban the sale of gas and diesel powered vehicles.

It would be extremely irresponsible to pass a law restricting the sale of petroleum powered vehicles for the following reasons:

1. The electric utility infrastructure does not currently exist to meet the increased demand that would be created by all Oregonians driving electric vehicles.
2. In the event of major natural disasters such as fires and earthquakes, electric vehicles are completely useless.
3. This would unfairly impact rural communities. The technology of battery capacity does not exist to meet the needs of those who live in remote areas for either distance or load capacity.
4. The vast majority of Oregonians care deeply for our environment and can be trusted to make their own decisions about what vehicles that they need.
5. This would negatively impact many small businesses owners.

Sincerely  
Kami Soehl

Albany Oregon

**From:** [Kathleen Blankenbiller](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** OR proposed EV mandate  
**Date:** Wednesday, September 7, 2022 11:48:06 PM

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Sept. 7, 2022

RE: Oregon's Proposed Electric Vehicle Mandate

I emphatically urge you NOT to adopt California's standards to require only 100% electric vehicles be sold in the state by 2035!

Have you ever noticed that the sun does not shine 24 hours a day? Or that the wind does not blow 24 h hours a day, 365 days a year? Yet the demand for electric energy remains high every hour of every day. And demand surges when extreme heat or cold or other unusual events occur. And many people tend to suffer and die when it's freezing cold and the power grid shuts down.

As recently as of this past Labor Day weekend, CA Governor Newsom requested his state's residents to avoid using large electric appliances (not to mention **not** to charge their electric vehicles) in order to avoid overloading the state's electric supply system. A supply system which Newsom has deliberately weakened by moving toward ending the use of oil and gas.

The infrastructure and technology required for the world to be free of fossil fuels is decades away. Elon Musk believes it may take decades to transition to sustainable energy and a sustainable economy. He thinks we need to use oil and gas in the short term because "otherwise civilization will crumble."

Nuclear could possibly replace fossil fuels entirely if it was accepted by 'environmentalists'. But it's not. Most counties, including America, seem to be destroying their (very efficient) existing nuclear plants and banning any future ones.

Meanwhile, China, which desires and plans to take America's place as the #1 superpower of the world, is not buying into the 'sustainable energy' craze. China builds/controls most of the world's supply of solar panels and wind turbines and batteries for electric vehicles. But China itself has a total of **3,037** operating coal-fired power plant units and does not appear to be ready to shut them down any time soon.  
**Switching to electric vehicles empowers China.**

This rapid, forced, change from cheap, abundant fossil fuels to expensive 'green' energy will cause great hardship worldwide, especially to the poorest people. We have had no chance to debate or question this.

The small number of powerful elites who are forcing this change upon us will not be affected at all.

Again I say do NOT adopt California's standards to require only 100% electric

vehicles be sold in the state by 2035!

Kath Blankenbiller, Newberg, Oregon

Sent from [Mail](#) for Windows

**From:** [Keith Howell](#)  
**To:** [2022 Levzев \\* DEQ](#)  
**Subject:** Fwd: Electric car Mandate  
**Date:** Tuesday, September 6, 2022 9:49:26 AM

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This new proposal for Electric vehicles is ridiculous. The waist from EV batteries is not environmentally friendly at all. The state also needs Diesel motors for farming and trucking.

This new proposal sounds like legislators are being paid off from the special interest groups.

This proposal should be shut down.

[LevZev2022@deq.oregon.gov](mailto:LevZev2022@deq.oregon.gov)

*Keith Howell*

**From:** [Kelly Locati](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Elimination of gas vehicles  
**Date:** Tuesday, September 6, 2022 5:16:40 PM

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Eliminating gas powered vehicles is not fair to minorities and the poor. This will be disastrous for Oregon. Our infrastructure is not set up for electric powered vehicles only. Furthermore it will cost trillions to put such infrastructure into Oregon. Please do not be like California. Oregon is a unique state. Allow people to drive electric at their personal choice. Give people options. Do not go authoritarian on the people of Oregon. Driving is a privilege and let's keep it that way. If this passes my entire family will relocate to a free state that allows choice. Along with my tax dollars. Some day I would like to drive an electric vehicle. But at my choice not being forced.

Thank you,

Kelly Locati

Sent from my iPhone



**From:** [kelly burnett](#)  
**To:** [2022 Levvzev \\* DEQ](#); [SAKATA Rachel \\* DEQ](#); [SAKATA Rachel \\* DEQ](#)  
**Subject:** Public comment rulemaking clean cars II  
**Date:** Wednesday, September 7, 2022 9:56:14 AM

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Dear Ms Sakata,

I attempted to submit this comment via a link at the DEQ web page (<https://www.oregon.gov/deq/rulemaking/Pages/CleanCarsII.aspx>), however the link was non-functional. Given the deadline of September 7, I am writing this email to fully support adoption "by reference California's Advanced Clean Cars II rule, which will transition all new light-duty vehicle sales in Oregon to zero-emission by 2035. The rule also includes updates to the LEV program rules to ensure they are identical to California's current light duty vehicle emission standards."

Thank you for your thoughtful consideration -

Kelly M. Burnett, PhD  
Watershed and Fisheries Consultant

Corvallis, OR

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**From:** [Kevin App](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Proposed ban on sale of gas powered vehicles  
**Date:** Tuesday, September 6, 2022 6:28:05 PM

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I would like to voice my opposition to this measure in the clearest terms possible. I see no possibility that enacting such a rule could lead to anything other than disaster. If California wishes to learn this the hard way, then so be it. But let us not follow them off the edge of this cliff.

Instead, it would be more appropriate to pass resolutions in all the other states making it clear to those in charge of California that they will get no help from the rest of us when they run out of energy. We must let them know that by law, we must allow them to sink into the pit of quicksand they dug for themselves.

Perhaps if every state did this, they would think better of this fools errand rather than subject their population to the consequences of this disastrously bad idea.

Thank you.  
Kevin App  
Newberg, Oregon

Sent via the Samsung Galaxy S8 Active, an AT&T 5G Evolution capable smartphone  
Get [Outlook for Android](#)

**From:** [Kim Bennett](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Proposed Rule for Clean Cars  
**Date:** Sunday, September 4, 2022 2:26:10 PM

---

I do not want to have electric vehicles forced upon us. We already have concerns over power / electricity use. Electric vehicles do not have the ability to travel as far as gas powered vehicles. I do not have the time or desire to stop to charge a vehicle for the same amount of time it takes to travel from point a to point b. The cost of batteries is ridiculous, in some cases more than a new vehicle costs. Lastly, the waste these items produces is not environmentally friendly.

In my opinion, the use of gas/diesel/natural gas is better than electricity driven vehicles. Thank you for allowing my comment.

Kim Bennett

Sent from my iPhone

**From:** [Kim Herber](#)  
**To:** [2022 Levzhev \\* DEQ](#)  
**Subject:** Oregon's electric vehicle plan  
**Date:** Sunday, September 4, 2022 11:15:29 AM

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It is such a terrible idea for Oregon to follow in California's footsteps and ban the sale of gas vehicles by a certain date. This is not the solution and will be a major problem for my family of 6. Please do not send Oregon in this direction!!!!

Thank you!

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Kim Herber

**From:** [Kim Peterson](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** No more gas cars  
**Date:** Monday, September 5, 2022 8:47:49 AM

---

I am not in support of banning gas cars by 2035. No way!!!

Sent from my iPhone

**From:** [Klaus](#)  
**To:** [2022 Levzvez \\* DEQ](#)  
**Subject:** Electric Vehicle Proposal  
**Date:** Saturday, September 3, 2022 10:22:26 AM

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I am absolutely opposed to forcing and mandating that Oregon require only electrical/hybrid vehicles in our state effective in 2035. We are a free market capitalist society and should always have the freedom to choose what type of vehicles to operate. Government mandates of this sort are totally outside the Oregon and Federal Constitutions and our laws must be followed, period!

Klaus Hoehna

Weston OR 97886

Sent from my iPhone

**From:** [Kris Shelton](#)  
**To:** [2022 Levzhev \\* DEQ](#)  
**Subject:** electric cars  
**Date:** Wednesday, September 7, 2022 5:01:48 PM

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Hello there I am writing to ask that the electric new cars by 2030/2035 be scrapped. They caught on fire, the weight way more and will cause our road more wear and tear costing us more money. The materials for the batteries is only in other countries. if they decide not to send us the materials or raise the prices we have to still buy from them. The cost is to much and they do not last. Where will all the old batteries or cars go ??? more polution from these than a gas car. Then I here we will not be able to sell our old gas cars and trucks in the state also. I say NO to this idea.

Thank you

Kris Shelton GP Oregon

**From:** [Larriat Schulte](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Date:** Tuesday, September 6, 2022 3:20:13 PM

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This is one of the most ridiculous ideas thought of. Raping the land to make the lithium batteries is irrational at best.



**From:** [Laura Small](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Comment AGAINST Advanced Clean Cars II  
**Date:** Monday, September 5, 2022 8:29:52 AM

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I am completely against this rule. It is clear that none of the authors nor sponsors of this bill have spent any time east of the cascades. Central and Eastern Oregonians will not be able to travel or work around this state without gasoline vehicles. There is no way that the infrastructure will be set up nor will the grid be able handle all of these charges.

This rule CANNOT be passed in Oregon.

Laura Small

**From:** [Lauren Smith](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Vehicle emissions  
**Date:** Monday, September 5, 2022 8:19:39 AM

---

I am against this proposed rule change. This is not what the people want.

Sent from my iPhone

**From:** [Leslie Moran-Armstrong](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** EV MANDATE  
**Date:** Wednesday, September 7, 2022 4:33:09 PM

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To whom it may concern,

I understand there is talk of an electric vehicle mandate, and I am writing to express my deepest opposition. This mandate clearly has not been well thought out and I am gravely concerned about the future of our state and country if this is a remote possibility.

I would encourage politicians, lawmakers and citizens AI like to do the research and better understand our resources. What happens when power is shut down due to high winds and extreme fire danger, such as we are experiencing in the Willamette Valley this weekend?

How do you suppose citizens will charge their electric vehicles in order to get around or possibly evacuate? This is just the tip of the iceberg, the impact of such a mandate is unfathomable.

Please take a step back and take a look at the whole picture before considering such a ridiculous mandate.

Regards,  
Leslie Armstrong  
Lebanon, Oregon

**From:** [Lindsay Farrimond](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Do not ban gas powered cars  
**Date:** Monday, September 5, 2022 9:32:58 PM

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I am writing to share my opinion of banning gas powered car sales. I do not think this is a feasible solution. Currently California has been asking residents not to charge their cars because of blackouts. Do you know how bad it will be when even more people have electric cars. There aren't ample charging stations anywhere near where I live or work. Charging takes too long and you have to stop too often. Do not ban the sale of gas powered vehicles by 2035.

Sent from my iPhone

From: [Lisa Lamping](#)  
To: [2022 Levvzev \\* DEQ](#)  
Subject: BAD IDEA PROPOSED ELECTRIC CAR MANDATE  
Date: Sunday, September 4, 2022 1:22:30 PM

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I AM NOT SURE WHAT YOU ARE THIIINKING?

WE DO NOT HAVE THE RESOURCES TO ACTUALLY DO THIS....  
THE RESOURCES WE DO HAVE ARE LIMITED  
THE TECHNOLOGY DOES NOT AND WILL NOT SUPPORT ANYTHING ON THIS  
SCALE  
CLIMATE PEOPLE TELL YOU THAT IT IS NOT ACHIEVABLE...NO MATTER HOW  
MUCH TIME YOU GIVE IT.

THE METHOD TO GET THE BATTERIES FOR CARS IS MORE POLLUTING AND  
DISRUPTING THAN THE  
CARBONS WE ARE DEALING WITH TODAY.

THE COSTS ARE NOT SOMETHING THAT AVERAGE CITIZENS CAN  
AFFORD...BATTERY REPLACEMENT  
IS TOO COSTLY.

**CONTINUE TO ASK THE DEALERSHIPS TO IMPROVE ON THEIR  
EMMISSIONS...THEY HAVE SHOWN A  
GREAT DEAL OF INGENUITY IN GETTING EMISSIONS DOWN...**

**YOU CANNOT SUCCESSFULLY MAKE THIS HAPPEN AND IT WILL BE A  
CLUSTER OF A DISASTER...**

YOU WILL PUT MILLIONS OUT OF WORK AND HAMSTRING INDUSTRIES  
WORLDWIDE,...  
YOU WILL CREATE SHORTAGES AND ECONOMIC DISASTER IF YOU DO THIS.

YES...WE NEED TO TAKE CARE OF OUR PLANET..BUT THIS IS NOT THE  
ANSWER....

***USE YOUR COMMON SENSE AND DO NOT FOLLOW LIKE LAMBS TO THE  
SLAUGHTER...***

**AND LASTLY...WHY WOULD YOU FOLLOW A STATE LIKE CALIFORNIA THAT IS  
THE WORST EXAMPLE  
ON HOW TO GOVERN...THEY ARE A FREAKING DISASTER AND YOU WANT TO  
BE LIKE THEM?**

LISA LAMPING

Lisa Lamping ,  
Warrenton, Oregon  
97146

**From:** [L.K](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Proposed Ban on Gas Powered Vehicles  
**Date:** Wednesday, September 7, 2022 11:01:42 AM

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Good morning;

I have significant concerns about the proposed ban on gas powered vehicles. This should not be policy imposed on Oregonians. Oregonians should have the opportunity to accept or reject this policy.

- The supply chain for elements required for batteries is not the least bit equitable. Cobalt and other element miners are often children. EVs use about six times more mineral inputs than ICE vehicles. The forecast/goal of 70 million EVs on the road by 2040 will include a 30-fold increase in demand for minerals. There is no shortage of these resources underground, but I am very concerned about whether they will be extracted sustainably, in a socially responsible manner that improves the lives of those doing the mining, and in time to meet demand. It is anticipated that there will be a shortage of nickel and challenges in scaling up lithium production. This supply shortage may also cause manufacturers to use lower-quality mineral inputs, adversely affecting battery performance.
- What happens to the batteries after they have been exhausted? There is no good way to dispose of them in a ecologically responsible manner.
- This ban will hurt households with lower incomes the most, particularly those living in rural Oregon. AEVs are expensive, far beyond the reach of a household living at even 100% of the AMI in Oregon. We've recently seen what happens when tax credits/deductions are offered - the manufacturers simply raise the price a commensurate amount or even more.
- Not only are AEVs expensive, but this ban will result in an increase in the costs of ICE vehicles. Households with lower incomes will be shut out of the market. These are the households that need a car the most, so they can get to work, to their daycare, to their children's school, especially those in the rural areas without public adequate transportation, which make up much of our state.
- We have seen what's happening in California - asking EV owners to not charge their vehicles and asking people to limit their use of electricity. And maybe it's the right decision for Californians. That state is a much bigger generator of Green House Gases than Oregon. Oregon's electric grid is already strained. And I don't want to live in a state that can't generate enough electricity to meet the need of EV owners and everyone else. Will we hear in coming weeks about elders and others who perished in the CA heat when they were "helping out" by conserving power and turning off their A/C?

Please do not implement this policy that will hurt so many Oregonians.

Regards,  
Loretta Kelly  
Portland, OR

**From:** [Lori Shaw](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Advanced Clean Cars  
**Date:** Sunday, September 4, 2022 12:05:24 PM

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To whom it may concern,

In regard to plans to ban the sale of gas/diesel run vehicles, simply stated I say NO.

I understand we need to rethink how we move forward in a world where we are trying to reduce our carbon footprint, but banning gas powered vehicles is not the answer. Much more thought to this plan is needed. These electric vehicles are not the clean energy our politicians keep cramming down our throats. The amount of destruction and energy that goes into manufacturing the batteries that supply the power for these electric vehicles should give anyone pause.

Also, the disposal of these batteries, once they go bad is nothing but a detriment to our soils. The cost to replace the battery is nearly as much as buying a new car. We need to find a balance in utilizing all sources of energy.

Have you ever been told not to put all of your eggs into one basket? That was good advice. Find a better balance and stop with the tyranny of control.

These electric vehicles have a huge negative impact on our farmers and commercial industries too. They already struggle to make ends meet and you will impact them even more negatively. There are monopoly laws too. Do some research in that area.

I recommend we get leaders that can form good, constructive decisions for our state and stop being imitating monkeys to California. If you want to decide for California....go represent them. Seems like many are leaving that state, so there should be lots of openings.

When was the last time Oregon looked at their mass transit operations? Rural auto owners do not have access to mass transit, which is extremely inefficient anyway. Ever taken Amtrak from Portland to just Eugene? Cargo gets the right of way, and I have heard stories of these trips taking 4 hours or longer. Now there's efficiency!

Now let's add a whole ton of electric vehicles to an already unstable power grid. Any ideas on how that's going to work?

Yet again, trying to push something on us that has not been well thought out. We are getting a bit tired of "here's the deal" attitude from leaders who are terribly misled by other states.

Weigh this out and look at how many cons are on the list.

A lifetime Oregonian, with no desire to be a Californian!

Lori Shaw  
Keizer, Oregon

**From:** [Lori Smith](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Opposition to proposed DEQ initiative  
**Date:** Monday, September 5, 2022 9:18:24 PM

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I wanted to voice my opposition to the proposed DEQ initiative removing the purchase and sales of vehicles using fuel. I have serious doubts about electric vehicles including the following:

- 1) How will our current power grid handle the increased load of adding millions of electric vehicles to Oregon's power system?
- 2) What country will we be asking to mine the lithium for the batteries? Won't that be an ecological problem for that country? Won't we then be dependent on that country for our supply? Also, we would be subject to whatever price they would set, right?
- 3) How will the used batteries be handled to avoid the dangerous chemicals from contaminating our beautiful state of Oregon?
- 4) How do electric vehicles handle cold temperatures? Are we going to have to worry about EVs not getting us to work and back?

These are just a few of my concerns about EVs. Instead of rolling out a program out like California, then turning around a few days later and asking people to not plug in their EVs to save energy, Oregon could make a smarter decision and not just blindly follow the crazy California ways. Just a thought.....

Lori Smith

Oregonian citizen & taxpayer



**From:** [Lou Condley](#)  
**To:** [2022 Levzvez \\* DEQ](#)  
**Subject:** Electric Vehicle Rule  
**Date:** Wednesday, September 7, 2022 9:12:39 AM

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Stop this nonsense of doing what California and Washington are doing. Since when did Oregon turn into a "monkey see, monkey do" state? We are supposed to be a free union to make our own decisions in what we want, how we want and when. I say NO to implementing other States agendas on their requirements for electric vehicles, this decision should be made by us, we the people of Oregon. Let us vote on it. Remember, you are an elected official, you're supposed to work for us!!

Lou Condley

**From:** [Crown Hill Farm](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Electric car mandate for 2035 Sunday,  
**Date:** September 4, 2022 8:46:20 PM

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Good morning,

It appears that follow the leader on the electric vehicle mandate has somehow become the matter of choice for the State of Oregon, and it also appears, that whether the citizens of Oregon like it or not, it is going to be shoved down our throats.

First off, this has to be one of the stupidest mandates I have ever heard. Already California is telling people to not turn on their AC units because it will cause rolling blackouts. Here is the infrastructure for all of these electric vehicles, when we are already facing rolling blackouts with the shut down of Natural Gas, and Coal fired plants. Common sense with this mandate are simply pie in the sky dreams that will not work.

How the State figures that people can afford to buy electric, when they can hardly afford to pay for fuel, utilities, groceries, etc. blows my mind.

***If this gets out of committee, it needs to be voted on by the public, not pushed thru by the least liked Governor in the United States.*** Who has here own agenda, and cares little about the rest of the citizens of this once great State.

This country will never be able to run without a certain amount of fossil fuel usage, since it is the only reliable energy source that is still cost effective and used in almost every product that we all use.

If this first phase is pushed thru, how long will it be before all heavy, and agricultural equipment will also try to be made electric, which is again not feasible is anyone has one ounce of common sense. This seems to be lacking in most of our state government, all that they want to do is spend more, and control more.

Most of us have had enough of the off the wall ideas, and will not approve of the projected mandates.

Respectfully submitted,

**Lucien Gunderman**

Crown Hill Farm  
Crown Hill Farm Enterprises  
Mochettaz & Gunderman  
McMinnville, OR 97128

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**From:** [Lynda Banks](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Advanced Clean Cars II  
**Date:** Sunday, September 4, 2022 11:37:17 AM

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Hello,

As an Oregonian who lives in an apartment complex, I ask that due diligence is taken to make sure the necessary EV infrastructure is in place prior to the date this legislation would take effect.

Because they have no garages, apartment or condominium complexes, retirement living centers, etc., would need access to individual charging stations for each unit. A certain percentage at the start, increasing to close to 100%, when everyone who bought a gas car just before the deadline is replacing them with EVs.

Relying on public off-site stations for apartment tenants is not feasible for several reasons:

1. There would not be enough public slots available for everyone to charge overnight in urban or densely populated suburban areas. I live in Southwest Beaverton where multi-family zoning is prevalent. My complex has over 330 units, and we're not even one of the larger complexes. There are well over 10-15 complexes within a mile of us.
2. Parking off-site and walking to/from apartment homes in the dark would not be safe for many. In the winter this would be occurring for all 8-5 commuters for several months of the year.

In order for the multi-family property owners to get the charging stations in place, I'm sure they would need incentives as well as special loans or grants. It would be financially crushing for the tenants to have to foot this expense 100%, rents are already out of control.

With the current supply chain problems, both generally and in the electric vehicle market for cars, charging units and batteries, it will only get worse when multiple states are requiring ramped up production to meet a deadline only 13 years away. Low-end models will still be priced above what low- and medium-income families can afford.

Which brings me to the other area of infrastructure that would need to be addressed: Public transportation. Any of the above concerns could bring riders to public transportation when their gas cars are no longer viable. Please be sure bus, light rail, and trains are properly prepared to support ridership safely and dependably.

To summarize, I am not against this type of legislation, I am concerned it will be put in place before all affected areas of change are researched and addressed, with an unreasonable start date that would make it unenforceable and a waste of tax dollars. California should not be blindly followed.

Please ask manufacturers how long they'll need to supply the increased demand, do they need to build more plants before they can even ramp up production? Please ask multi-family properties if/when they could be compliant. Please ask who would be responsible for and owning any public charging services, and if price-gouging could be prevented.

Thank you very much for reading this, and considering my concerns.

Lynda Banks  
Beaverton OR 97007

**From:** [Marc LaVerne](#)  
**To:** [2022 Levzhev \\* DEQ](#)  
**Subject:** zero emission vehicle through 2025 rule  
**Date:** Monday, September 5, 2022 8:59:53 AM

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The adoption of California's zero emission rule has had and will continue to have detrimental effects on California's power grid. The adoption of this rule have very serious consequences to our power grid here in Oregon, to our industry and to families everywhere in this state. With the average price of electric vehicles out of range for most working families more and more older cars will be on the road increasing pollution and reducing the safety, as costs for everything are getting out of hand and people will have to forgo certain maintenance and repairs critical for safety and operation. The manufacturing of electric or hydrogen powered vehicles is not cost effective or environmentally sound, the actual damage done is being swept under the rug by hiding the mining practices in country's out side of the U.S.A. and NOT talking about it. thousand are dyeing producing the raw materials and irreparable damage is being done to our world. I feel this is a bad way to go forward and would severely be harmful to Oregon.

Thank you Marc LaVerne

**From:** [Marie Long](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Internal combustion engines  
**Date:** Wednesday, September 7, 2022 10:00:05 AM

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I would particularly like to see bans on internal combustion engines used exclusively for recreation such as:

- recreational motor boat engines (seadoos, fishing boats, waterskiing etc.)
- recreational skidoos
- ATVs
- lawnmowers
- certain motor bikes with inefficient engines

Obviously exclusions for those whose livelihood is in jeopardy (commercial fishing boats).

Besides the obvious emission pollutants that arise from these engines, they cause sound pollution, and destruction of natural areas.

Banning other internal combustion engines may be a reach for the reasons noted. But there could be restrictions placed for recreational use of vehicles, or perhaps tiered gas prices - the first 10 gallons at such a price, additional gallons another price, escalating rapidly. That would give access to lower prices to go to work, but much higher prices after that for either big vehicles or recreation use.

Thank you for the opportunity to comment.

Marie Long

**From:** [Marilyn Hart](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Cc:** [Marilyn Hart](#)  
**Subject:** Ban on gas powered vehicles 2035  
**Date:** Monday, September 5, 2022 12:21:30 PM

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The people off Oregon must have a choice in the decision to oppose or support a policy change on the ban on gas powered vehicle by 2035.

Oregon is the 5th lowest carbon emissions. Oregon is already a green STATE! We asa citizens of Oregon have worked hard for many years on keeping OREGON healthy.

Oregon DEQ Director Richard Whitman has already stated that Oregons portion of global carbon emissions is minuscule.

This decision needs to be made by the CITIZENS of Oregon.

Sincerely, Marilyn R Hart. Born and raised in Oregon

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Sent from my iPad

**From:** [Mark A. and Dana Toma](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** ev mandates  
**Date:** Sunday, September 4, 2022 9:29:05 PM

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Bad idea! People will go out of state to buy the vehicle of their choice. Oregon is about freedom! If the EV is so great then it will sell itself! Government should not control  
Mark and Dana Toma

**From:** [Mark Dayton](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** EV's  
**Date:** Tuesday, September 6, 2022 9:21:36 AM

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I believe this is a bad idea. Our infrastructure can't handle it! It is also Unconstitutional. I believe we are still a Free Country. Freedom to choose is a Right, Forcing American Citizens to conform to an ideology is wrong. People are changing to Hybrids now EV's will happen when the average person can buy them and are cheaper to purchase, maintain. Forcing them on Oregonians before that is the case is Un American.

Sent from my iPad



**From:** [Mark Nelson](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Vehicles  
**Date:** Wednesday, September 7, 2022 8:39:35 AM

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This possible requirement cannot possibly help this state. The power grid cannot handle the immense uptick. Farmers and logging companies will not be able to buy all new equipment and will lose abilities to harvest crops. Trucking companies will go under. This is a terrible rule and has to be stopped.

Sincerely, Mark Nelson  
Lebanon Oregon

[Sent from Yahoo Mail for iPhone](#)

**From:** [Mark Torrence](#)  
**To:** [2022 Levzhev \\* DEQ](#)  
**Date:** Saturday, September 3, 2022 4:29:02 PM

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Please do not destroy this state (Oregon) any more than you already have. Do not even consider going to all electric vehicles. Very bad mistake. Or maybe intentional mistake? Any way one looks at this it is a BIG mistake. You want to go to all electric vehicles but in the same breath you want to remove all the dams that are giving you the ONLY source of zero emissions electricity to charge them. BAD MOVE ALL AROUND!

Mark Torrence, Tillamook, OR.

**From:** [Marlene Acker](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** DEQ ruling - comments by Sep  
**Date:** Tuesday, September 6, 2022 10:01:15 PM

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I am joining the Oregon Farm Bureau in their opposition to the adoption of the rules as described below.

Following on the heels of California's recent [adoption](#) of rules requiring that only 100% electric vehicles be sold in the state by 2035, Oregon **quietly** convened a [rulemaking group](#) to consider the same standards for Oregon. Under Oregon's [proposed rules](#), the state would follow California in requiring that by year 2035, any new light or medium duty vehicles (cars, light trucks and SUVs) would be 100% electric, either fully electric or hybrid.

The state is also proposing to fund community-based organizations to purchase vehicles for ride sharing and car sharing programs

The rulemaking advisory committee is accepting initial comment on these proposed rules from the public through [September 7th](#).

While existing vehicles, farm equipment and heavy-duty vehicles will not be subject to this rule, it is anticipated that the state would eventually try to ban the sale of used vehicles and subject heavy duty vehicles to the standards as soon as more electric options become available.

Oregon Farm Bureau opposes this rule for several reasons. Chief among these is that the cost of electric vehicles, which remains much higher than their fuel-based counterparts, is out of reach for many farm families, who are seeing ever slimmer margins in the face of increased regulatory pressures from the state. Further, this rule requires electrification before the infrastructure is available, particularly in rural areas, to support electric vehicles, particularly for work trucks that are used exclusively in remote areas of the state, miles from any charging station. Most farms and ranches do not have EV charging capacity on farm, and do not have the resources to install such facilities. This rule represents another burden on rural communities from an agency who fails to understand the different vehicle needs in rural areas than urban areas, where charging infrastructure is more readily available.

I urge you to reconsider adopting these rules.

Thank you,  
Marlene Acker

Nehalem

**From:** [Mary Anne Cooper](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Advanced Clean Cars II Rulemaking Comments  
**Date:** Tuesday, September 6, 2022 10:22:07 AM

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Thank you for the opportunity to comment on the proposed rules in front of the rulemaking advisory committee for the so-called Advanced Clean Cars II Rulemaking. Oregon Farm Bureau opposes this rule for several reasons. Chief among these is that the cost of electric vehicles, which remains much higher than their fuel-based counterparts, is out of reach for many farm families, who are seeing ever slimmer margins in the face of increased regulatory pressures from the state.

Further, this rule requires electrification before the infrastructure is available, particularly in rural areas, to support electric vehicles, particularly for work trucks that are used exclusively in remote areas of the state, miles from any charging station. Most farms and ranches do not have EV charging capacity on farm, and do not have the resources to install such facilities. This rule represents another burden on rural communities from an agency who fails to understand the different vehicle needs in rural areas than urban areas, where charging infrastructure is more readily available.

Thanks,

Mary Anne

Mary Anne Cooper | Vice President of Government & Legal Affairs  
**Oregon Farm Bureau**

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**From:** [Mary Blanshan](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Ban on combustible  
**Date:** Wednesday, September 7, 2022 7:28:33 AM

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This is a stupid thought....not everyone can afford this or they would run to electric by now...Mary B.....

Sent from my iPad

**From:** [Cape Blanco Cranberries Inc](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** RE: Proposed Electric Vehicle Requirement for Oregon  
**Date:** Saturday, September 3, 2022 2:43:32 PM

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Re: Proposed Electric Vehicle Requirement for Oregon

To Whom It May Concern:

Please do not enact this proposed rule to mandate only electric or hybrid vehicles in Oregon.

The time has not yet come for stopping the use of all fossil fuel run vehicles.

The US electrical system cannot handle the current electrical needs as shown by rolling blackouts and brownouts that have been occurring for years. How can the electrical grid handle charging millions of electric vehicles?

Although there are not a huge number of Oregonians living in rural areas as compared to the Willamette Valley, those of us who do will be very adversely affected should this rule be enacted. Living in a rural area does not give us the ability to have electric charging stations readily available for our vehicles.

We also have long distances to travel for nearly everything. As just one example our nearest pharmacy is 25 miles away. Having to add in time for charging somewhere along the way when we have an emergency need for something like a critical part available only in Portland (nearly a 500 mile round-trip) is not possible. Are there going to be tens of thousands of charging stations all along every road?

We also have weather events in Oregon that can cut our electrical power for days or weeks in some cases. This can happen anywhere including cities like Portland and Salem. How can we charge vehicles even at home when that occurs?

What about when people are stopped in the winter by an accident or slide that closes a highway? This happens multiple times each year all over Oregon, particularly on the top of the Siskiyou and the multiple passes over the Cascades. When the many trapped car's batteries are drained by their passengers trying to stay warm, how can they all be charged and begin moving again? This exact thing happened to me on I-5 north of Grants Pass, somewhere you are not expecting to be stopped even in the winter. My family and I, plus thousands of others, were trapped by a snow and ice storm that caused multiple accidents. We were literally parked on I-5 for several hours at the base of Sexton Pass and then moved so slowly to Roseburg that a trip that should take one and a half hours, took over five in bumper to bumper traffic all the way. Battery operated vehicles could not have made that trip.

Additionally, as farmers and ranchers whose margins are getting smaller every year, we cannot afford the extra cost of buying electric and hybrid vehicles.

Finally, and most importantly, what about the environmental ramifications of making and then disposing of the batteries required to operate electric and hybrid vehicles when the batteries no longer function? This unsolved problem is certainly not in the best interest of our environment here in Oregon or anywhere in the world.

Until the multitude of problems with electric and hybrid vehicles are solved, if they ever are completely, please do not use more of our taxpayer money continuing to review this ill-conceived plan. We do not need to repeat every mistake that California is currently making here in Oregon.

Sincerely,

Mary Puhl  
President and Co-Owner

Cape Blanco Cranberries

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From: [Matt Smith](#)  
To: [2022 Levzvez \\* DEQ](#)  
Subject: Gas vehicles ban  
Date: Monday, September 5, 2022 8:06:10 AM

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To Richard Whitman and the DEQ authorities responsible for considering the ban on vehicles that use gasoline by 2035,

**Oregonians should have the choice to oppose or support this policy change. Oregon's supermajority and the appointments for over 250 boards and commissions made by Kate Brown should not overrule Oregonian's choice, especially for this big of a policy change. This is not a rule, it's a statewide policy that effects every Oregonian.**

California's new Advanced Clean Car policy may be good for California, but that's not the case in Oregon. California ranks the 2nd highest contributor to GHG emissions at 358.8 million metric tons annually whereas Oregon contributes 38.3 million metric tons annually. Out of all states, Oregon has the 5th lowest carbon emissions per capita. As a reference, China contributes over 9.9 billion metric tons of GHG emissions annually. Globally, 33.6 billion tons of CO2 is emitted annually. **Oregon contributes .11% of the worlds emissions.**

**Oregon is already a green state. Oregon's DEQ's Director Richard Whitman, was asked what impact on global carbon would occur if Oregon were to reduce its' emissions to zero, he responded: "Rep. Brock Smith, you are correct that Oregon's portion of global carbon emissions is, I'll use the word minuscule."**

Oregon's HB 2021 requires retail electricity providers to reduce greenhouse gas emissions associated with electricity sold to Oregon consumers to 80 percent below baseline emissions levels by 2030, 90 percent below baseline emissions levels by 2035 and 100 percent below baseline emissions levels by 2040. Oregon's strict rules and regulations force utility companies to look outside of our state to produce 'green' energy. I am concerned with what our energy costs will be and grid reliability if you choose to adopt California's Advanced Clean Car policy.

Hydroelectric power makes up the largest portion of Oregon's electricity resource mix, followed by coal and natural gas. Hydroelectric power is considered renewable energy by Oregon. With our Renewable Portfolio Standard, half of Oregon's electricity will come from renewable resources by 2040. How will this be accomplished if we are removing our dams that produce hydroelectricity?

**Oregon's Global Warming Commission's 2020 report states:**

**"Oregon's per capita sector-based emissions are 32 percent lower than U.S. per capita emissions, having dropped by 25 percent since 1990. "**

"While impacts to our economy do have an effect on emissions, Oregon GDP and emissions have largely been decoupled since 1997. From example, from 1997 to 2014, Oregon's real GDP increased by almost 80 percent while total GHG emissions declined by approximately 11 percent.

Oregon's Global Warming Commission recommends the following to our State Legislature:

"19. Oregon's Global Warming Commission strongly suggests: "In rulemaking, the Department of Environmental Quality should consider allowing certain charging infrastructure projects to receive advanced clean fuels credits as a loan to help offset the upfront capital costs."

"20. The Building Codes Division and local jurisdictions should accelerate the process for adoption of new building codes to require all new garage structures to be pre-plumbed during construction for conduit that can support recharging at all parking spaces, and develop rules for including charging infrastructure in existing building stock."

These are aggressive and expensive changes aimed at supporting Kate Brown's Executive

Order 20-04 made during a pandemic under her declared and prolonged emergency powers that had nothing to do with the pandemic. Banning the sale of gas powered vehicles is also aggressive and expensive on many levels.

**My concerns with adopting this new ban on gas powered vehicle policy within 13 years:**

**Currently, Oregon has inadequate charging infrastructure. Power grids are already strained, this policy will add more strain with vehicles requiring charging.**

**One of the biggest challenges to EV adoption is the battery production process and supply chain. New mining and supply chains are needed to support EVs. There are a lot of minerals required to produce batteries for EVs, as a result, there's a lot of mining and transportation of materials involved.**

**Electric vehicles lose charge when parked although it is minimal, it can add up over time. Green Car Reports suggest you charge your battery at least 80% before parking the car.**

**Electric cars can travel less distance-**

AEVs on average have a shorter range than gas-powered cars. Most models ranging between 60 and 120 miles per charge and some luxury models reaching ranges of 300 miles per charge. For comparison, gas powered vehicles will average around 300 miles on a full tank of gas, and more fuel efficient vehicles getting much higher driving ranges. This may be an issue when looking at AEVs if you frequently take long trips. Availability of charging stations can make AEVs less suitable for activities like road trips. Oregonian's love their road trips.

EVs' most prominent advantage is their potential to use fuel that produces no direct GHG emissions. Although EVs do not produce any tailpipe emissions, their total emissions depend on the emissions intensity of the electricity they use. For example, an EV powered completely by solar power would produce zero carbon dioxide ("CO<sub>2</sub>") emissions for each kilowatt-hour ("kWh") of energy consumed, whereas one powered entirely by coal-fired electricity would emit about 2.07 pounds of CO<sub>2</sub> per kWh consumed. This equates to about 0.66 pounds of CO<sub>2</sub> per mile. By comparison, a gasoline-fueled passenger vehicle with average fuel economy (24.8 miles per gallon) emits about 0.98 pounds of CO<sub>2</sub> per mile. Thus, an EV powered exclusively by coal would emit CO<sub>2</sub> equivalent to a car that achieves about thirty-five miles per gallon. As a result, an EV powered exclusively by coal-fired electricity would still reduce about 0.32 pounds of CO<sub>2</sub> per mile compared to a gasoline vehicle with average fuel economy.

If EVs replace an average vehicle driven 11,824 miles per year—the average number of miles driven per year in the United States—then an EV could save between 5.2 metric tons of CO<sub>2</sub> emissions per year (when powered by zero-emissions electricity) and 1.7 metric tons of CO<sub>2</sub> emissions per year (when powered exclusively by electricity generated from coal). Significantly, however, these comparisons are between EVs and cars with average fuel economy. **\*\*When compared to more fuel-efficient vehicles like hybrids, EVs can emit more GHGs when using power generated primarily from coal\*\***

**Electric cars take longer to "refuel"-**

Fueling an all-electric car can also be an issue. Fully recharging the battery pack with a Level 1 or Level 2 charger can take up to 8 hours, and even fast charging stations take 30 minutes to charge to 80 percent capacity. Electric car drivers have to plan more carefully, because running out of power can't be solved by a quick stop at the gas pump.

**Lithium ion batteries used in EVs also do not perform as well in cold temperatures, which can lead to further range reductions. Their general findings are that drivers of an average EV might see about half of the manufacturer's official range. If the average range is 200 miles per charge, the range will decrease to 100 miles before required charging in cold temperatures.**

**Electric cars are more expensive, and battery packs may need to be replaced-**

**The battery packs within an electric car are expensive and may need to be replaced**

**more than once over the lifetime of the car. All-electric vehicles are also more expensive than gas-powered cars, and the upfront cost of all-electric vehicle can also be prohibitive. However, the fuel cost savings, tax credits, and state incentives can help to offset this cost overall if they are available.**

**Finite critical minerals and rare earth metals-**

EVs use about six times more mineral inputs than ICE vehicles. The IEA's forecast of 70 million EVs on the road by 2040 will be accompanied by a 30-fold increase in demand for minerals. There is no shortage of these resources underground, but rather a concern as to whether they will be extracted sustainably, in line with social responsibility governance, and in time to meet demand. It is anticipated that there will be a shortage of nickel and challenges in scaling up lithium production. This supply shortage may also cause manufacturers to use lower-quality mineral inputs, adversely affecting battery performance. Oregonians have a right to decide our fate! Please let us vote instead of sealing our fate.

-Extremely concerned

-Matthew Smith

Beaverton Oregon resident

Sent from my iPhone

**From:** [Merle Feldman 2022](#)  
**To:** [Levvzev \\* DEQ](#)  
**Subject:** Commentsfor advisory committee consideration  
**Date:** Wednesday, September 7, 2022 9:23:11 PM

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The rulemaking proposed is not based on sound scientific evidence. It is critical that you provide to the citizens of Oregon your research. This rulemaking proposal must come before the voters of our state before it is established. I am requesting evidential proof in writing before any action is taken.

The following evidence must be considered by your committee without fail.

Clean energy via electric vehicles is not clean at all. Abundance of vehicles does not promote cleanliness. Synergizing metals include cobalt, lithium, manganese and nickel. These are needed to make the batteries and in the process only creates more emissions. Large amounts of fossil fuel is needed to mine these metals. Additionally, it is true that these cars do not emit air pollution from their tailpipes; but since 61% of the energy used to charge their batteries does come from coal, natural gas, petroleum and other gases, they indirectly cause air pollution. How does this differ from gas powered vehicles? Tesla Model 3 requires 65% more carbon emissions to manufacture than the equivalent size gas automobile.

To travel 1000 miles in a Tesla requires 286 pounds of coal to be burned at a local power plant. This is hardly what could be called "clean energy." The cost of replacing the battery can be as high as \$20,000. It is certain there will be many abandoned electric vehicles when this happens. Presently a very small percentage of the packs get recycled. A lithium shortage is expected by 2025. What will happen then?

Very small amounts of the metals needed come from the USA. Most of them come from unfriendly countries. The metal extraction in these countries result in terrible air pollution, water contamination and habitat destruction.

Some examples are: The nickel mining in the Philippines has a negative impact, affecting local residents, producing large amounts of runoff and reducing rain forests. Pollution from nickel mining reaches catastrophic levels in Indonesia, as the seas around them are turning red and muddy. The nickel pollution is lethal to coral reefs and fishermen face ongoing nightmares. The acid leaks in Caledonia result in mouth and eye infections for the children and the elderly.

Sadly, 40,000 child laborers work in hellish conditions in the D.R, Congo to mine, sort and refine cobalt. Many of these children are as young as 4 years old. This country is the lead exporter of cobalt. The fad of electrical cars in the richer countries has escalated an ecological disaster in many third world countries. Additionally, when the cobalt is processed there is a very high radiation level in the remaining ore.

By 2030, 100,000 tons of lithium will be needed per year In Chile, Lithium mines consume 65% of the region's water supply. In Argentina, lithium mining is causing a water disaster. Crops are affected and dust storms are increasing. Some countries want to dump waste from mining in the ocean with untold consequences.

Electric vehicle companies have direct partnerships with the organizations that are doing the

mining. Obviously, they are aware of the path of destruction they leave. Obviously, your committee is aware of it also, but are choosing to ignore it. Why? Buying a Tesla in an attempt to solve the problem exacerbates five more problems.

Electric vehicles are nothing but a modern craze. They offer a self-indulgent mechanism to make the driver feel safer and more knowledgeable while spurring a multitude of crisis factors in developing nations all over the world. It is no wonder Elon Musk is working hard to see that we go to Mars in a few years, as our world will no longer be habitable.

**From:** [Michael Pierzchala](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Don't ban gas-powered vehicles!  
**Date:** Monday, September 5, 2022 11:42:00 AM

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Hello,

It has come to my attention that DEQ is attempting to follow California's lead and impose a ban on gas-powered light-duty vehicles in the state by 2035.

I will spare you the links to the numerous stats and studies, economic and scientific, clearly explaining why this is a very bad idea. I will only state in my own words that I believe such a move is unnecessary for Oregon.

One: It will cause great hardship for many people who cannot afford an EV.

Two: Gov. Newsom's recent request that California citizens **not** recharge their vehicles during the heat wave proves the grids on the West Coast cannot handle the numbers of vehicles in use now.

Three: Our citizens shouldn't be punished with the even higher electricity costs this proposal will inevitably lead to.

Four: The stated reason for this proposal, to protect the climate, is spurious at best, as there is no scientific evidence any benefit will be more than negligible.

This proposal is the first step on a very dangerous path, one that will make life here so onerous and impractical, that it will lead to many people leaving the state.

I strongly urge you, for the sake of average Oregonians, who are already struggling to meet their basic needs and pay their electric bills, to abandon this draconian proposal.

Sincerely,

Michael Pierzchala

Milwaukie, Oregon 97222

**From:** [Mike Berry](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Comments on Oregon's Proposed Electric Vehicle Mandate  
**Date:** Tuesday, September 6, 2022 8:56:08 AM

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Citizen of Oregon and USA here. Please slow your roll. Please back off entirely on consideration of mandate(s). Let people decide when is the right time (if ever) for them to switch from highly reliable & efficient vehicles powered by internal combustion engines to other transportation solutions.

I think that electric vehicles are wonderful when

1. their performance capabilities meet user requirements,
2. they make sense from a cost / financial standpoint,
3. the electrical grid and generating facilities are adequate to serve the load.

As to #1 above- The travel range capabilities of currently available electric vehicles may be insufficient for the wide open spaces that are much of Oregon outside of the metro areas. We'll see what the future brings.

As to #2 above- Initial cost of electric vehicles is quite high. Cost of operation may be quite low. Don't bother trying to sell me on taxpayer-provided subsidies to buyers, especially wealthy buyers.

As to #3 above- Let me share a short story, astonishing facts, and observations. There is a Tesla Cars Supercharger station located not far from where I have been spending my time. I occasionally visit that Supercharger location to see what's going on. The Supercharger station seems to be well used by travelers on I-5 corridor. Curious about how they work, I went looking for info. I found this:

<https://www.tesla.com/support/supercharger#payment>

Note that if a Tesla driver using a Supercharger station was being charged "per minute" basis at "Tier 4" charging rate, they would be "Charging ABOVE 180 kW". To put this in to perspective, I recently watched a "smart" meter on a house in southern Oregon where a 30 year-old 2.5 ton air conditioner was laboring away on a day when it was 90+ degrees F. There were also 2 refrigerators in operation plus base loads. Power use as indicated by "smart" meter was just under 4 kW. So- the power required by one Tesla driver to charge at "Tier 4" rate is nearly 50 times the power required to operate that single household during the heat of a late summer day... and not a particularly energy-efficient household at that. You read that right. 50X !! No wonder California ISO is discouraging charging of electric cars during times of scarcity. -> [http://www.caiso.com/Documents/intensifying-heat-leads-to-another-conservation-call.pdf?fbclid=IwAR1u8D9mQWCrTiEZe6lOqDEZJRdPyc8Qpulpu\\_CAIpGzsRxx5UmFDcRUjSk](http://www.caiso.com/Documents/intensifying-heat-leads-to-another-conservation-call.pdf?fbclid=IwAR1u8D9mQWCrTiEZe6lOqDEZJRdPyc8Qpulpu_CAIpGzsRxx5UmFDcRUjSk)

A robust grid and electrical generation/storage of sufficient capacity to support mass use of electric vehicles needs to be in place and operating reliably for these vehicles to be practical as default choices.

Keep in mind that the current global situation is that China and enterprises affiliated with the Chinese Communist Party (CCP) absolutely dominates the production of many inputs needed to produce electric vehicles and clean energy. They are doing this by burning massive amounts of coal. We in USA should not be helping the CCP, which "employs" slave labor. We should not be exporting our emissions. For the near term, we should aspire to produce things we need by responsible and relatively cleaner and more efficient use of North American gas and oil and even coal.

Now I have a question. Is this action being driven by Democrat Oregon Governor Kate Brown's Executive Order 2020-04, "Directing State Agencies to Take Actions to Reduce and Regulate Greenhouse Gas Emissions"? [https://www.oregon.gov/gov/eo/eo\\_20-04.pdf](https://www.oregon.gov/gov/eo/eo_20-04.pdf) If so, please do the right thing. Do not advance this agenda of zealotry.

Thank you for the opportunity to provide comments.

Signed,  
Michael S. (Mike) Berry

**From:** [michelle bickley](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Yes to zero emission vehicles  
**Date:** Saturday, September 3, 2022 8:14:39 PM

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Please, let's move forward with technologies that are clearly better for our environment and public health, and join other states in selling only zero emission vehicles by 2035. This is the obvious future, and it's much better to be in the lead than at the back end of smart plans. It's way beyond time to ditch dirty oil.

Thank you,

Michelle Bickley  
Portland, OR



**From:** [Michelle Detwiler](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Cc:**  
**Subject:** Comments on Advanced Clean Car II Rule Advisory Committee Meeting 1  
**Date:** Tuesday, August 30, 2022 3:17:40 PM  
**Attachments:** [Hydrogen Pathway Study\\_Final.pdf](#)

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Dear Rachel,

RHA was unable to attend today's first meeting of the ACC II Advisory committee this morning, however, we have reviewed notes and the presentation deck from the meeting.

We note that there did not seem to be any discussion today of the role of fuel cell electric vehicles in achieving the goals of ACC II, nor plans for enabling and facilitating deployment of FCEVs and infrastructure in Oregon. The topics and rule emphasis seem to be on advancing deployment of battery electric vehicles and infrastructure only in the state. We understand that Oregon will have to adopt the California ACC II rule without substantive modification and that the CA rule includes provisions for FCEVs. However, we want to make sure that there is equal attention given by DEQ staff and advisory committee members to the emission reduction benefits of fuel cell vehicles and what is necessary to grow the FCEV segment in the state.

I would note that the Oregon Department of Transportation has published the Hydrogen Pathway Study as part of their TEINA program. I would encourage DEQ staff to review this document (attached) in the interest of a coordinated approach to the ACC II rule making to be sure that all ZEV technologies are given equal consideration under the rule and that it be "drivetrain agnostic".

RHA plans to attend future meetings and will file formal comments at the appropriate time.

Thank you for your consideration.

Best,  
Michelle



**Michelle Detwiler | Executive Director**

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# Hydrogen Pathway Study

Transportation  
Electrification  
Infrastructure  
Needs Analysis  
(TEINA)

H<sub>2</sub>  
Hydrogen



Oregon  
Department  
of Transportation

Hydrogen Pathway Study

# Transportation Electrification Infrastructure Needs Analysis (TEINA)

*Prepared for:*

Oregon Department of Transportation  
355 Capitol Street NE  
Salem, Oregon 97301-3871

*Prepared by:*

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851 SW 6th Avenue, Suite 600  
Portland, Oregon 97204

*In association with:*

**RMI**

April 2022

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# Foreword

This report was produced by the Oregon Department of Transportation's Climate Office under the guidance and direction of Mary Brazell (Agency Project Manager), Suzanne Carlson (Climate Office Director), and Jillian DiMedio. The consultant project team that assisted the Climate Office in the production of this report included Wayne Kittelson (project manager) and Susan Mah, Kittelson & Associates (prime contractor); and Britta Gross and Aradhana Gahlaut, RMI. The project received additional feedback and suggestions from an Advisory Group consisting of Greg Alderson, Portland General Electric; Michael Graham, Columbia-Willamette Clean Cities Coalition; Nathan Hill and Diego Quevedo, Daimler Trucks; Whit Jamieson and Rhett Lawrence, Forth; Chris Kroeker, NW Natural; Victoria Paykar, Climate Solutions; Bill Peters, Department of Environmental Quality; Esther Pullido and Kate Hawley, Pacific Power; Evan Ramsey, Bonneville Environmental Foundation; Juan Serpa Munoz, Eugene Water & Electric Board; Jairaj Singh, Unite Oregon; Rebecca Smith, Oregon Department of Energy; and Martina Steinkusz, Renewable Hydrogen Alliance. The Oregon Department of Transportation and the consultant project team acknowledge with sincere appreciation the feedback and suggestions provided by the Advisory Group members while also noting that the members were not asked and have not formally endorsed the content of this Study.

# Executive Summary

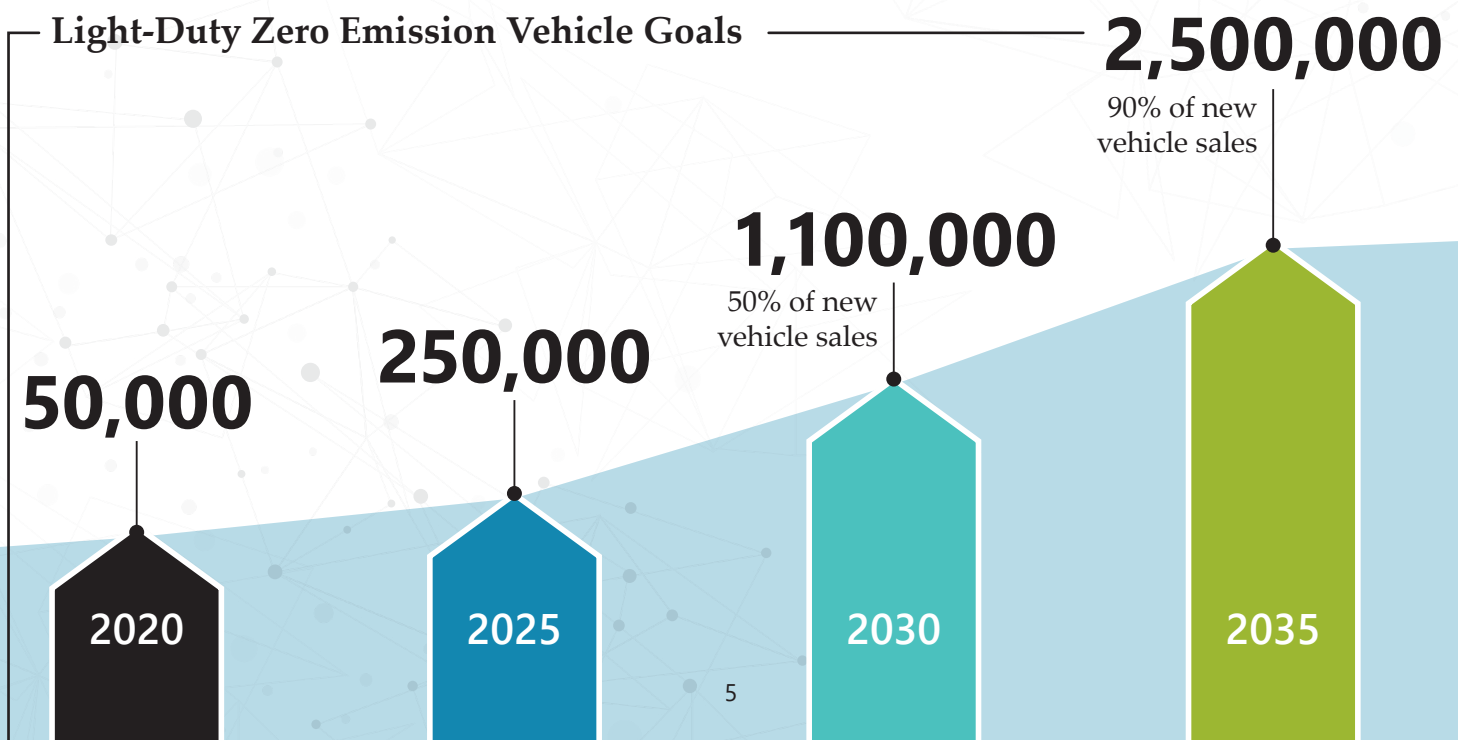
Transitioning to electrically-powered vehicles can quickly reduce greenhouse gas (GHG) emissions from driving. Vehicles that are powered by electricity are referred to as zero-emission vehicles or ZEVs. ZEVs will play an important role in helping meet the GHG reduction targets in Oregon, where the transportation sector is responsible for nearly 40 percent of the state's GHG emissions.

The electricity used by ZEVs can be stored in batteries or generated in real time through the use of a fuel cell. A fuel cell electric vehicle, or FCEV, is a fully electric vehicle that generates its own electricity by combining oxygen from the air with hydrogen from an onboard storage tank, emitting only water vapor and heat from the vehicle. Both battery electric vehicles (BEVs) and fuel cell electric vehicles (FCEVs) are viable technologies that have already reached

the consumer market. The BEV market is currently much larger and more mature, but the FCEV market is growing and is becoming more cost-competitive as the industry scales. In addition to providing a zero-emission solution, fuel cell vehicle technology offers several key advantages, including longer driving range and quicker fueling times. These are increasingly attractive features when addressing the more challenging on-road mobility use cases such as long-haul trucking.

In support of electrically-powered vehicles and reduced GHG emissions, Oregon established a series of zero-emission vehicle adoption goals in Senate Bill 1044 as shown in **Figure 1**. These goals culminate with 90 percent of light-duty vehicle (LDV) sales within the state being ZEVs by 2035.

**Figure 1.** Light-Duty Zero Emission Vehicle goals established in Senate Bill 1044 (Oregon Department of Transportation, 2021)



In July 2021, the Oregon Department of Transportation (ODOT) released the Transportation Electrification Infrastructure Needs Analysis (TEINA), which quantified the charging infrastructure needed to achieve the goals set forth in Senate Bill 1044. The TEINA estimates were based on the assumption that the ZEV targets shown in **Figure 1** would be met entirely by battery electric technology. This Study considers an additional scenario in which a percentage of Oregon's ZEV sales are met by hydrogen fuel cell electric vehicles, and then assesses the fueling infrastructure needs to support this potential fleet of hydrogen cars, trucks and buses.

As in the earlier TEINA study, this focused look at hydrogen fueling needs assumes only a top-down state requirement. It does not reflect a bottom-up fleet needs assessment, nor an estimate of what is possible or likely to happen relative to transitioning to a hydrogen-based on-road mobility system. Thus, the implementation timeline presented in this Study could be quite different from what occurs, including a significant acceleration due to external factors. For example, more concerted hydrogen-related efforts of federal, state, or local governments could accelerate the projected timeline, as could a more rapid development of the zero-emission interests and needs of industry and fleets.

The goal of this Study is to inform future efforts in Oregon by providing an overview of current hydrogen activities in the light-duty, medium-duty, and heavy-duty transportation sectors today; the requirements and estimated capital costs of building out a hydrogen fueling station network to meet state goals; and recommendations that Oregon might consider to support an evolving hydrogen market going forward. As in the earlier TEINA study, upstream hydrogen production and delivery, though a critical consideration in developing an overall hydrogen strategy, is not addressed in this study. The Oregon Department of Energy (ODOE) is currently conducting a parallel study, due to the state legislature by September 2022, of the benefits and barriers to the production and consumption of renewable hydrogen in Oregon.

This Study found a supportive policy landscape in Oregon, where hydrogen and fuel cell vehicles are recognized in state goals, clean vehicle rebates and clean fuels credit programs. There is broad stakeholder interest in locally and renewably produced hydrogen. There is also growing fleet and utility interest in opportunities and potential solutions offered by both hydrogen and fuel cell electric vehicles. Among other activities in Oregon, this Study describes the hydrogen-related efforts of the Portland area transit system (TriMet), Eugene Water & Electric Board (EWEB), and Daimler Trucks North America. Fleet operators seem to be coalescing around a common interest in finding zero-emission solutions to the more challenging on-road mobility use cases, including longer transit bus routes, fleets with continuous 24/7 operations, and long-haul trucking. Where battery technology today can quite easily solve most mobility needs, these challenging scenarios are causing fleets to investigate potential hydrogen fuel cell solutions.

As in the original TEINA study, the targets for light-duty vehicles (LDV) are based on the state's SB 1044 goals - adjusted to assume that FCEVs make up 5% of urban LDV ZEVs in 2035. Since SB 1044 does not, however, provide state targets for transit buses, medium-duty or heavy-duty vehicles, this Study has adopted the same methodology used in the original TEINA study for projecting ZEVs for these additional use cases to ensure a consistent approach. This Study assumes 10% of the ZEV buses in TEINA are fuel cell buses, and it assumes 10% of all medium-duty truck electric vehicle miles traveled (e-VMT) and 25% of all heavy-duty truck e-VMT is met by hydrogen fuel cell electric trucks. The 2035 targets assumed by use case are summarized in **Table 1**.

**Table 1.** 2035 FCEV Target Assumptions by Use Case

Use Case	Target Assumptions
Light-Duty Vehicles	5% of urban light-duty ZEVs are FCEVs
Transit Buses	10% of TEINA e-buses are FCEVs
Medium-Duty Vehicles	10% of medium-duty TEINA e-VMT are FCEVs
Heavy-Duty Vehicles	25% of heavy-duty TEINA e-VMT are FCEVs

Note: The LDV Highway Corridor use case is a function of the daily traffic of the LDV use case.

This target-driven analysis determined that 47 public hydrogen fueling stations would be required in 2035 to serve hydrogen vehicles in the light-duty vehicle sector. An additional 19 fueling stations would be required to serve medium-duty and heavy-duty vehicles, including both transit buses and the additional demand from Washington and California's Class 8<sup>1</sup> hydrogen trucks that travel across Oregon's highway system. The capital cost of establishing this network is estimated at \$232.5 million.

**Table 2.** H<sub>2</sub> Fueling Station Infrastructure Costs (Cumulative)

Use Case	Assumed Capital Cost/ Station	2025		2030		2035		Assumed Capacity
		# Stations	Total Capital Cost	# Stations	Total Capital Cost	# Stations	Total Capital Cost	
<b>Light-Duty Vehicles: Urban</b>	\$1.9M	0	0	1	\$2M	33	\$63M	1,500kg
<b>Light-Duty Vehicles: Corridor</b>	\$1.9M	6	\$11M	7	\$13M	14	\$27M	1,500kg
<i>Total Light-Duty Vehicles</i>		6	\$11M	8	\$15M	47	\$90M	
<b>Medium-Duty Vehicles</b>	\$7.5M	0	0	1	\$7.5M	8	\$60M	5,000kg
<b>Heavy-Duty Vehicles</b>	\$7.5M	0	0	1	\$7.5M	6	\$45M	5,000kg
<b>Transit Buses</b>	\$7.5M	0	0	1	\$7.5M	5	\$37.5M	5,000kg
<i>Total Medium-and Heavy-Duty Vehicles</i>		0	0	3	\$22.5M	19	\$142.5M	
<i>Capital Costs Total</i>			<b>\$11M</b>		<b>\$37.5M</b>		<b>\$232.5M</b>	

1 A "Class 8" truck is a Heavy-Duty truck with a Gross Vehicle Weight Rating (GVWR) of 33,001 pounds or more.



The modeling performed for this Study has assumed a relatively slow startup to FCEV deployments in Oregon in the pre-2025 timeframe due to several factors: the lack of current FCEV product availability across sectors; the constrained hydrogen vehicle production capacity of automakers; and the limited geographic areas of FCEV deployment (e.g. automakers are currently focused on California). Beyond 2025, FCEV ramp-up curve an exponential growth curve to meet 2035 targets. Although these targets may appear conservative, the lead time necessary to install five public hydrogen fueling stations by 2025 would require preparatory activities to begin very soon. Furthermore, the availability of hydrogen fueling infrastructure is an important prerequisite to developing the fuel cell vehicle market in the first place. These factors, combined with others discussed in this Study, can significantly influence the pace of FCEV adoption and the broader use of hydrogen across the state and region.

This Study recommends a phased approach to actions that can be taken in the near-term (2022-2023), mid-term (2024-2027), and the longer-term (2028-2035). These actions will establish a collaborative relationship between Oregon’s state agencies and other leading public and private stakeholders that is key to understanding the evolving market needs. Given the rapidly growing need to transition to a zero-emission economy, this Study also suggests the leading market indicators to watch for critical signs that the fuel cell vehicle market is evolving sooner or more rapidly than is projected in this analysis. This awareness will allow Oregon to more effectively plan for a future hydrogen fuel cell vehicle market.

**Table 3.** Study Recommendations

	<b>Near-term (2022-2023)</b>	<b>Mid-term (2024-2027)</b>	<b>Longer-term (2028-2035)</b>		
<b>KEY ACTIONS</b>	<ul style="list-style-type: none"> <li>Assess hydrogen market regularly and coordinate interests</li> <li>Engage with regional stakeholders</li> <li>Support industry-led technology demonstrations and pilot projects</li> <li>Support policies enabling FCEVs and local, low or zero-carbon hydrogen production</li> <li>Ensure statewide regulations and processes enable FCEVs and hydrogen fueling infrastructure siting</li> </ul>	<ul style="list-style-type: none"> <li>Establish a statewide hydrogen planning effort</li> <li>Coordinate fleet interests in hydrogen</li> <li>Coordinate a regional corridor</li> <li>Develop and invest in pilot projects</li> <li>Consider establishing targets</li> <li>Pursue federal funding opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Continue to leverage the statewide hydrogen planning effort</li> <li>Continue to support regional coordination</li> <li>Transition from pilot projects to scale</li> <li>Establish a consumer and fleet awareness program</li> </ul>		
<b>WATCH FOR (Leading Indicators)</b>					
<b>Commercial fleet activity</b> – interest in pilots, FCEV purchase announcements	<b>OEM activity</b> – expanding FCEV production and geographical footprint	<b>California activity</b> – heavy-duty highway corridor investments encouraging interstate travel	<b>Fueling provider activity</b> – station network announcements, investments, fueling/fleet/OEM partnerships	<b>H<sub>2</sub> production activity</b> – utility engagement, ramp-up in local hydrogen production, improving H <sub>2</sub> economics	<b>Federal policy</b> – major funding commitments, stricter heavy-duty emission standards

# Introduction

In Oregon, much like nationally, the transportation sector is the largest source of greenhouse gas (GHG) emissions, comprising 40% of emissions. To avoid the worst impacts of climate change and meet the state climate goal of an 80% reduction of GHG emissions by 2050, the rapid electrification of Oregon’s transportation sector is vital.<sup>2</sup> In March 2020, Governor Brown signed Executive Order 20-04, directing 19 state agencies to implement sweeping actions to combat climate change. Transportation electrification features prominently in the order, including long-term planning for electric vehicle charging infrastructure through ODOT’s Transportation Electrification Infrastructure Needs Analysis (TEINA), released in July 2021. This report assessed the charging infrastructure required to meet the state’s zero emission vehicle (ZEV) adoption goals established in Senate Bill 1044 – namely, that light-duty ZEVs represent 90% of new car sales by 2035. TEINA assumed that Oregon’s ZEV targets would be met by battery electric vehicle technology. This study considers an additional scenario whereby a percentage of ZEV sales across the light-, medium- and heavy-duty sectors are met by hydrogen fuel cell electric vehicles (FCEVs) and assesses the fueling infrastructure needs to support this potential fleet of hydrogen cars, trucks and buses in Oregon.

As in the original TEINA study, this focused look at hydrogen fueling needs assumes a top-down requirement that hydrogen fuel cell vehicles meet a portion of the state’s ZEV goals by 2035. It does not reflect a bottom-up fleet needs assessment, nor an estimate of what is likely to happen relative to transitioning to a hydrogen-based on-road mobility system. The goal of this paper is to inform hydrogen infrastructure development efforts in Oregon by providing an overview of hydrogen activities in the light-, medium-, and heavy-duty transportation sector today, the requirements and estimated costs of building out a hydrogen fueling station network to support the modeled FCEV scenarios, and recommendations in the short, medium and long term that Oregon might consider to support an evolving hydrogen market going forward. As in the earlier TEINA study, upstream hydrogen production and delivery, though a critical consideration in developing an overall hydrogen strategy, is not specifically addressed here.

This paper reflects analysis and scenario modeling performed by RMI. The hydrogen and fuel cell vehicle landscape analysis, fueling considerations and costs, and recommendations have been informed through academic and government literature research, industry-provided literature and interviews with hydrogen stakeholders across the government, industry and non-profit sectors.

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This Study is composed of six sections:

**1** Hydrogen Activity Landscape

**2** Current FCEV Product Inventory

**3** FCEV Modeling and Analysis

**4** FCEV Fueling Needs and Costs

**5** Special Considerations

**6** Recommendations

---

<sup>2</sup> Oregon’s climate goals, originally established in 2007 by House Bill 3543, were updated by Governor Brown through Executive Order 20-04 and include: GHG emissions reduction of 45% below 1990 levels by 2035 and GHG emissions reductions of 80% below 1990 levels by 2050.

# Section 1: Hydrogen Activity Landscape

This section provides an overview of the major ongoing and planned hydrogen-related activities of interest to Oregon across the light-, medium-, and heavy-duty vehicle sectors. Following a brief overview of the global trends, there is a more comprehensive look at efforts in North America. In the U.S., California has developed the broadest portfolio of policies and hydrogen initiatives and offers the largest hydrogen fueling station network. Beyond California’s leading efforts, there is growing interest in hydrogen in North America, most notably in Washington, Oregon, British Columbia, and the Northeast United States. This section aims to focus on the policies and activities most responsible for driving progress towards a robust hydrogen fuel cell vehicle market.

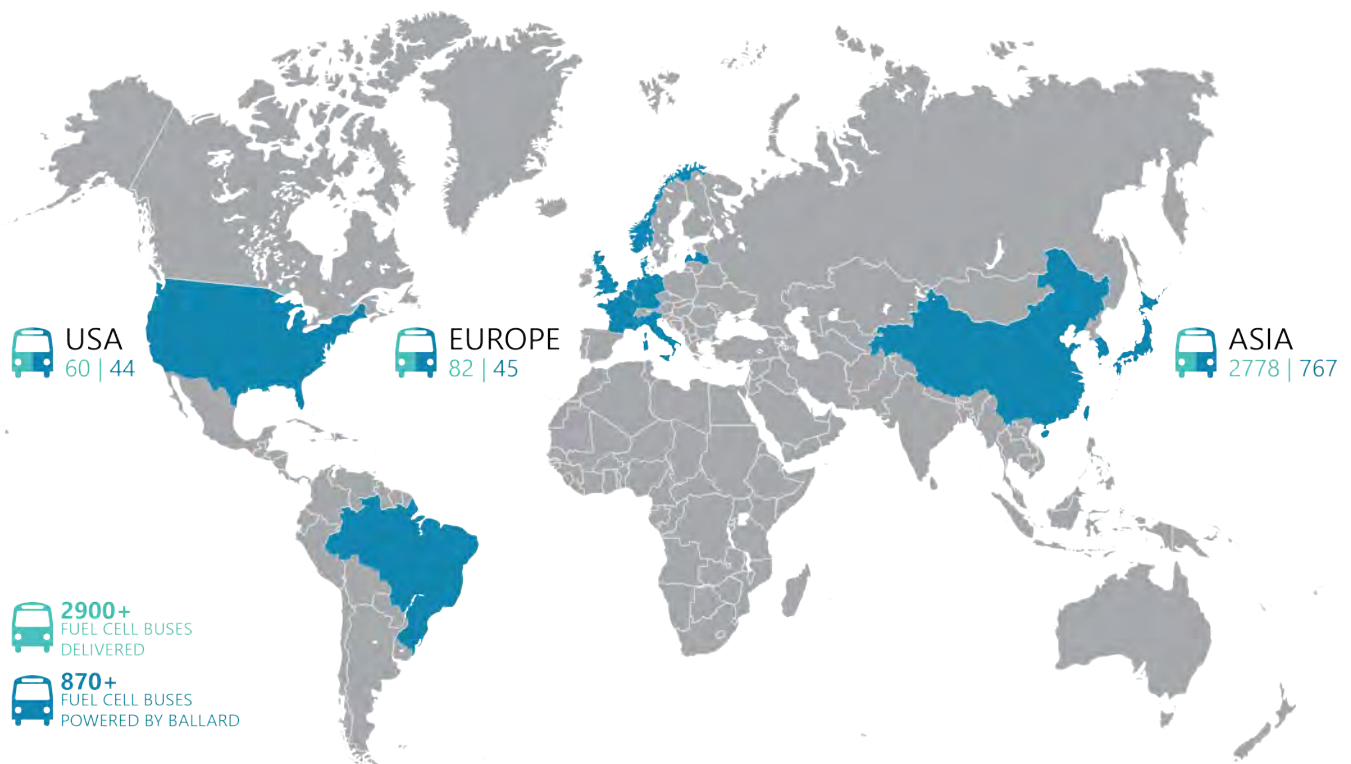
## GLOBAL LANDSCAPE

Globally, there is increasing hydrogen fuel cell vehicle activity in Europe, Japan, South Korea, and China, particularly in the area of commercial trucks and buses. According to a white paper from EVTank, (Zang, 2021), at the end of 2020 there were 578 public and private hydrogen refueling stations operating globally: 200 refueling stations in Europe (100 in Germany), 142 in Japan, 60 in South Korea, 101 in China (primarily serving buses and trucks), and 75 in North America. EVTank projects that the number of hydrogen fueling stations in China will exceed 1,000 by 2025 and 5,000 by 2035. Shanghai alone plans to have 100 hydrogen refueling stations by 2023 and Beijing plans to have 74 stations by 2025. The European Green Deal captures Europe’s commitment

to investments in a hydrogen economy, targeting 6 GW of electrolyzer capacity by 2024 (producing up to 1 million tons/yr of renewable hydrogen) and 40 GW of capacity by 2030. Further evidence of the growing global attention on hydrogen is provided by the Hydrogen Council (a global hydrogen industry coalition), which finds that 18 governments (70 per cent of global GDP), “have developed detailed strategies for deploying hydrogen energy solutions” (Hydrogen Council, 2020).

Hydrogen activity across public transit fleets is particularly robust and growing. As displayed in **Figure 2** below, there are currently close to 6,000 hydrogen fuel cell buses in operation around the world (California Fuel Cell Partnership, Undated).

**Figure 2.** Fuel Cell Buses Worldwide



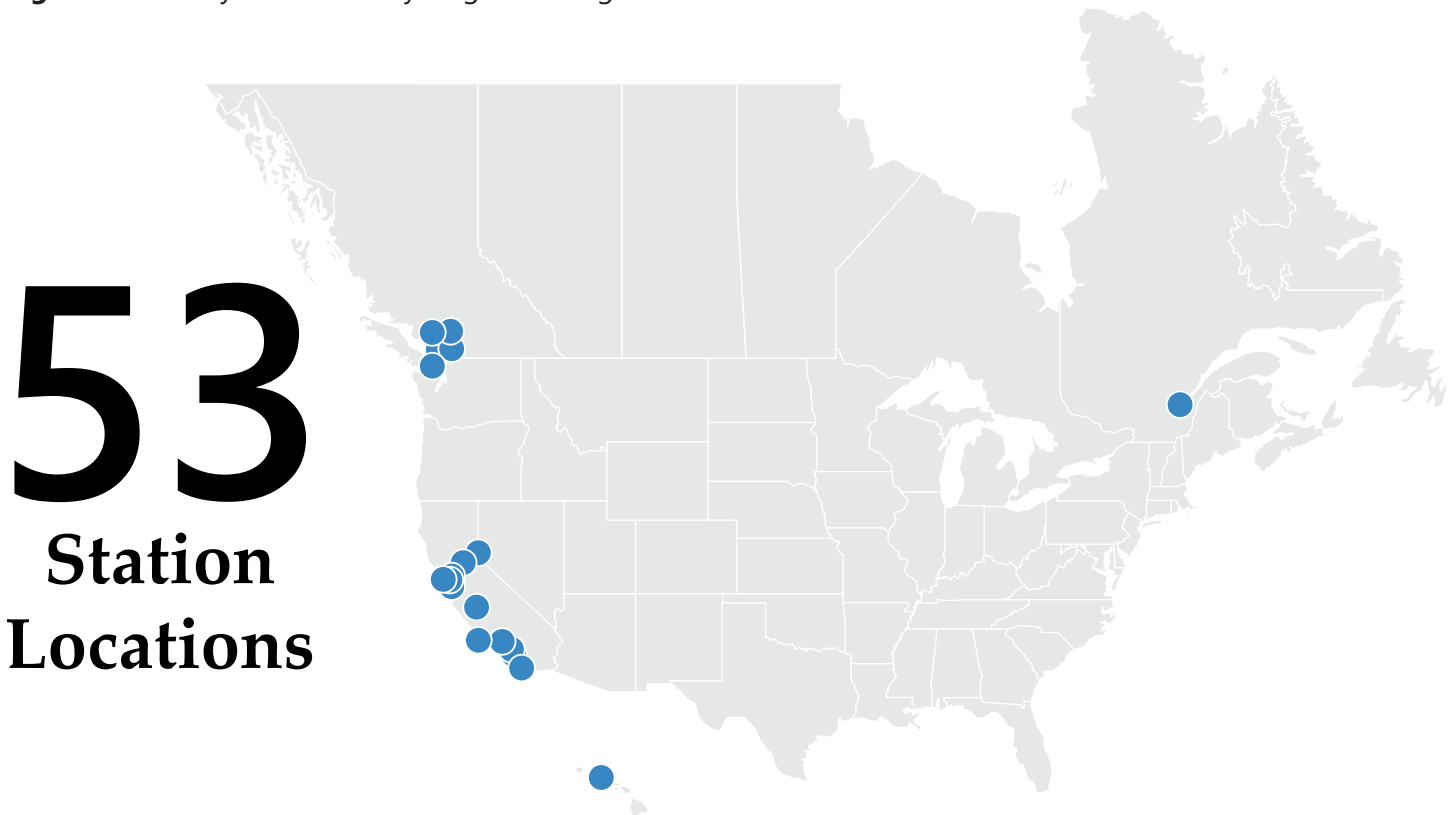
## NORTH AMERICAN LANDSCAPE

Fuel cell electric vehicles (FCEVs) have been commercially available in California since 2015. This commercial deployment of FCEVs from Toyota, Honda, and Hyundai followed more than a decade of intensive FCEV technology development by the world's leading automakers that included a large number of demonstration and pilot projects, including a sustained effort by the U.S. Department of Energy. Fuel cell technology in transit buses evolved simultaneously through numerous pilot projects. Meanwhile, battery vehicle technology was quickly advancing and costs rapidly declining. To many stakeholders, this presented a clearer, near-term path to zero-emission vehicles – as evidenced by the quickly expanding U.S. battery electric vehicle market. Battery technology is well-suited to the performance requirements of most vehicles – particularly lighter vehicles and vehicles with shorter driving range needs. However, hydrogen FCEVs provide another pathway to zero-emission vehicles and fuel cell technology offers several key performance advantages, including longer driving range, less sensitivity to cold temperatures, and quicker fueling times. These are important considerations, particularly when addressing the

most challenging on-road mobility use cases such as long-haul trucking and longer transit routes. This potential to serve as a zero-emission solution across the transportation sector, including for the most challenging use cases, has resulted in a sustained interest in hydrogen fuel cell vehicle technology. As such, FCEV pilots are increasingly common, especially in regions that are pursuing climate commitments.

Across the U.S., an examination of existing publicly-accessible hydrogen stations demonstrates California's leadership in deploying an increasingly robust hydrogen fueling network. According to the Department of Energy's Alternative Fuel Data Center's Station Locator (United States Department of Energy, 2021), there are currently 53 publicly operating hydrogen fueling stations in North America (**Figure 3**) - 47 are located in California, one in Hawaii, and five in Canada (four in Vancouver/Victoria; one in Quebec). All stations support light-duty hydrogen fuel cell electric vehicles. There are additional behind-the-fence stations supporting private light-duty vehicle fleets, buses, trucks, and forklifts – and some of these key efforts will be discussed later in this section.

**Figure 3.** Publicly-accessible Hydrogen Fueling Station Network in North America



# CALIFORNIA

As of October 2021, there were 11,674 fuel cell vehicles sold or leased in the U.S. (California Fuel Cell Partnership, 2021). Of these, the California Air Resources Board (CARB) estimates approximately 8,000 are active on California’s roads. According to the EV Sales Dashboard provided by the Alliance for Automotive Innovation (Alliance for Automotive Innovation, 2021), following several years of cautious, yet steady, FCEV sales in California, there was an increase in year-over-year sales in the first three quarters of 2021 (Figure 4). This can be perhaps partly explained by pent-up demand for FCEVs (and EVs in general) following sales decreases during COVID-19, but there is certainly a growing interest across consumers and fleet operators in zero-emission vehicle choices.

There are also 48 fuel cell buses operating in California and another 58 buses in development.

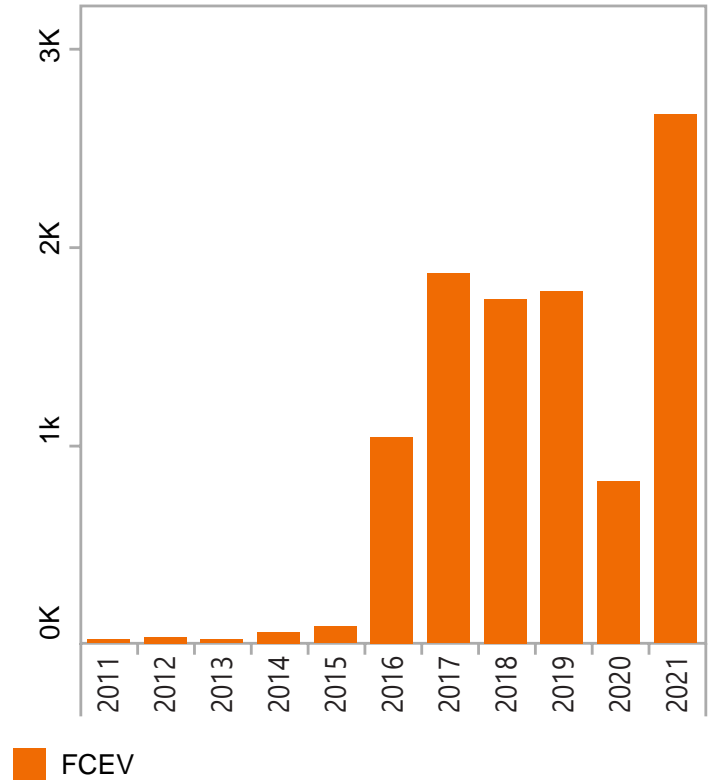
Supporting all these vehicles are:

- 52 hydrogen fueling stations, 47 of which are available to the public, with another 127 retail hydrogen fueling stations in some stage of development
- Four retail truck fueling stations in construction and five additional stations funded, but not yet in development
- At least three behind-the-fence fueling stations for transit bus fleets

California is expected to have more than 176 open-retail hydrogen fueling stations by 2026 (California Air Resources Board, 2021). Figure 5 shows California’s current open-retail hydrogen fueling station network (United States Department of Energy, 2021).

*California’s efforts to drive towards a zero-emission transportation system are notable not only because of the sizable funding committed to advancing public-private efforts, but also due to the sheer magnitude of legislative, regulatory, incentive, procedural and structural efforts to advance the transition.*

**Figure 4.** Annual FCEV Sales in California through September 2021



**Figure 5.** Open-retail Hydrogen Fueling Stations Currently Operating in California



## Hydrogen-supportive legislation and policies in California

California has established a wide portfolio of legislation and programs designed to promote and fund the transition of on-road vehicles to battery and fuel cell electric. The primary policies encouraging hydrogen fuel cell vehicle and fueling station growth are highlighted below.<sup>3</sup>

- **Assembly Bill 8 (AB 8)/CARB's Annual AB 8 Report** – AB 8 is the State's longest-running program to support hydrogen fueling station network development, enabling the deployment of light-duty FCEVs. As part of this provision, CARB must complete an annual analysis of the current progress and projected future development of California's hydrogen fueling station network required to encourage the growth of the fuel cell vehicle market. CARB issues an annual report to the California Energy Commission (CEC) that includes the number of stations, geographic areas where stations are needed, and minimum operating standards, such as number of dispensers and filling pressures. Based on the number of hydrogen fueling stations deemed necessary in CARB's AB 8 report, the CEC is then authorized, through its Clean Transportation Program, to spend \$20 million per year to fund up to 100 retail hydrogen fueling stations. The program is authorized through January 1, 2024.
- **Hydrogen Refueling Infrastructure (HRI) provision** – in 2019, in addition to increasing the state target to 200 hydrogen stations by 2025, the HRI crediting provision was established in the Low Carbon Fuel Standard (LCFS) program to support early hydrogen fueling network development. An important aspect of this LCFS provision is that it provides credits based on the capacity of the station rather than on the amount of hydrogen dispensed. This is especially important in the early years of the network when there are fewer fuel cell vehicles to take up station capacity.
- **Zero-Emission Transit Bus Requirement** – By 2040, all public transit agencies must transition to 100% zero-emission bus fleets, including battery electric or fuel cell electric technologies.
- **Renewable Hydrogen Requirement** – California Senate Bill 1505 first established a renewable content requirement of 33.3 percent for all hydrogen fueling stations receiving State funding. The LCFS program's HRI provision, passed later, increased the requirement to a minimum 40 percent renewable requirement for stations participating in the program. The CEC's latest grant funding solicitation (GFO-19-602), which provides the necessary funding to complete the 100-station commitment under AB 8, also adopted the 40 percent minimum requirement.
- **EnergIIZE Commercial Vehicles (Energy Infrastructure Incentives for Zero-Emission Commercial Vehicles)** – the California Energy Commission has established a \$50 million multi-year project (referenced as the CEC EnergIIZE Project) to develop a concierge-like model to provide public and private truck and bus fleet operators with technical and financial assistance as they plan their charging and hydrogen refueling infrastructure needs.
- **California Fuel Cell Partnership (CaFCP)** – This is a government/industry collaboration founded in 1999 and aimed at expanding the market for hydrogen fuel cell electric vehicles. Staff from member organizations (including automakers, hydrogen fuel and infrastructure providers) participate on standing committees and project teams to help ensure that vehicles, stations, regulations and people are in step with each other as the market grows.

<sup>3</sup> The Alternative Fuel Data Center (AFDC) is one of the primary sources for the state policies listed in this and the following state sections, and readers are encouraged to refer to the more comprehensive list (United States Department of Energy, 2021).

## Current and announced hydrogen projects in California

In addition to the buildout of California's hydrogen station network to support its growing light-duty vehicle market, California is also accelerating efforts to develop the hydrogen fuel cell electric truck and bus markets. Highlights of key truck and bus projects in California include the following:

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### **California Truck Programs**

- **NorCAL ZERO project** – a consortium of partners, including First Element and Hyundai, have been awarded grants from CARB, CEC, the Alameda County Transportation Commission and the Bay Area Air Quality Management District to deploy 30 heavy-duty Hyundai XCIENT fuel cell electric trucks and deploy a high-capacity hydrogen fueling station adjacent to the Port of Oakland (The Center for Transportation and the Environment, 2021). Glovis America, a logistics service provider, will be the fleet operator of these trucks that will service the entire northern California region. The station will be capable of supporting up to 50 Class 8 trucks and back-to-back fueling.
- **Shore to Store (S2S) project** – Five Class 8 fuel cell electric drayage trucks and two hydrogen fueling stations are now operating at the Ports of Los Angeles and Long Beach under the \$41 million Zero and Near Zero Emissions Freight Forwarding (ZANZEFF) project sponsored by the state of California. The project will be expanded over time to include another five hydrogen-fueled trucks. The Kenworth T680 Class 8 trucks are powered by a Toyota fuel cell electric drivetrain. Fleet operators participating in this project include Toyota Logistics Services, Southern Counties Express, UPS and Total Transportation Services. Shell is building two heavy-duty hydrogen fueling stations in Wilmington and Ontario to support the ZANZEFF Shore to Store project (The Port of Los Angeles, 2018), (The Port of Los Angeles, Undated Fact Sheet).
- **Southern California Pilot** – Hyundai Motor was awarded a \$500,000 grant from the South Coast Air Quality Management District (with additional funding provided by the U.S. Environmental Protection Agency) to demonstrate two Class 8 Xcient Fuel Cell heavy-duty trucks, used for long-haul freight operations between warehouses in Southern California, for a 12-month period.
- **Nikola and TravelCenters of America** – This partnership announced tentative plans to co-develop heavy-duty hydrogen fueling stations at two existing Southern California sites by Q1 2023. Stations are intended to be available to any truck customer and will use a common industry standard for heavy-duty truck fueling (Nikola, 2021).

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### **California Bus Programs**

There are currently 48 hydrogen fuel cell electric buses operating across four bus fleets in California:

- **AC Transit (Alameda Contra Costa Transit District)** – AC Transit in the San Francisco Bay Area currently operates 21 hydrogen fuel cell-electric buses. They also operate two hydrogen stations in Emeryville and Oakland, which are capable of fueling 65 buses and 13 buses back-to-back, respectively. AC Transit continues to expand its hydrogen fleet, recently ordering an additional 20 Xcelsior CHARGE H<sub>2</sub> fuel cell electric buses from NFI's New Flyer (AC Transit, 2021).
- **Orange County Transportation Authority (OCTA)** – OCTA operates 10 hydrogen fuel-cell electric buses and the “largest transit-operated hydrogen fueling station in the United States”, with the ability to fuel 40-50 buses (scalable to 100). This \$22.9 million program follows an earlier fuel cell bus pilot program at OCTA (Orange County Transportation Authority, 2021).
- **SunLine Transit Agency** – the Palm Springs area transit agency currently operates 16 hydrogen fuel cell 40' electric buses – 11 El Dorado National Axess buses and five New Flyer Xcelsior XHE40 buses. SunLine aims to build its fleet entirely of hydrogen fuel cell buses (SunLine Transit Agency, Undated).
- **UC Irvine** – operates one hydrogen fuel cell electric bus on campus.

### **California/West-Coast Renewable Hydrogen Production Developments**

- **Western States Hydrogen Alliance (WSHA)** – formed in 2020, WSHA is an industry alliance focused on advocating for policies supporting hydrogen fuel cell vehicles in medium- and heavy-duty applications.
- **Plug Power** – Plug Power is planning to build a liquid hydrogen facility in Fresno County, California, capable of producing 30 metric tons of liquid green hydrogen daily and serving West Coast customers. The facility will use a new 300 megawatt solar farm to power a 120 megawatt electrolyzer, and plans to begin operations in early 2024. (Plug Power, 2021)
- **Air Liquide** – is investing \$200 million to build a renewable liquid hydrogen plant in North Las Vegas, capable of producing 30 tons of liquid hydrogen per day – the equivalent of fueling 42,000 Fuel Cell Electric Vehicles (FCEVs) on the West Coast. The plant is expected to serve the complete range of zero emission vehicles (ZEVs). (Air Liquide, 2020)



# WASHINGTON

## Hydrogen-supportive legislation in Washington

In general, the ZEV policies and incentives in the Washington are technology-neutral and apply equally to battery electric and fuel cell electric vehicles.

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- **Green Transportation Grant Program**  
– The Washington State Department of Transportation (WSDOT) offers grants for projects that reduce the carbon intensity of the Washington transportation system, including the transition to a hydrogen fuel cell vehicle fleet, modification or replacement of facilities for hydrogen fueling, and the construction of hydrogen fueling infrastructure.
- **Alternative Fueling Infrastructure Grant Program** – WSDOT offers competitive grants to strengthen and expand the West Coast Electric Highway network, including hydrogen fueling infrastructure along highway corridors.
- **Fuel Cell Electric Vehicle and Infrastructure Tax Credit** – the state sales and use taxes do not apply to FCEV batteries, fuel cells and related infrastructure investments.
- **Senate Bill 5588 (2019)** – authorized the production, distribution and sale of renewable hydrogen by public utility districts (PUDs)
- **Senate Bill 5000 (2021)** – establishes an eight-year statewide pilot project for the reduction of sales tax on purchases of FCEVs (extending a similar exemption on vehicle sales tax that purchasers of battery EVs receive). Beginning July 1, 2022, 50% of the retail sales and state use tax of 6.5% does not apply to the sale or lease of the first 650 new FCEV passenger vehicles, light-duty trucks, and medium-duty passenger vehicles powered by fuel cells. Additionally, all used FCEV sales and leases are exempt from the tax.
- **Tacoma Power Electrofuel Tariff** – the nation’s first pilot rate of a lower cost tariff to support the production of electrofuels, such as the production of hydrogen from carbon-free electricity, which can be used to store electricity for later use.
- **Climate bills** – Washington recently passed two separate climate bills that may influence hydrogen activities: the “Climate Commitment Act” (SB 5126), a Cap/Trade & Invest bill that places a price on carbon; and the “Clean Fuels Bill” (HB 1091) that progressively reduces the carbon content of fuels and rewards carbon reductions with tradable credits. Both programs are expected to generate revenue to fund enhancements to the existing transportation system and will become effective in January 2023 following a rule-making process.

## Current and announced hydrogen projects in Washington

While there are no existing retail fuel stations and no commitments from automakers to deploy FCEVs in Washington, there is growing interest in hydrogen production and hydrogen fuel cell vehicles. Several of the potentially more impactful hydrogen activities currently being planned, include:

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- **Douglas County PUD** – a pilot project to build a 5MW electrolyzer that will leverage the Wells Hydroelectric Project and support renewable hydrogen production near Baker Flats, East Wenatchee. Douglas County PUD will be the first county-owned public utility in the state to produce its own hydrogen as a result of SB 5588. Production of renewable hydrogen was expected in late 2021.
- **Chehalis Hydrogen Fueling Station** – the first hydrogen fueling station in Washington state will be built with a combined \$4.45 million in grants from the Centralia Coal Transition Board and the state Legislature’s supplemental capital budget. Project partners include the Bonneville Environmental Foundation (BEF), the Douglas County PUD, the Renewable Hydrogen Alliance and Toyota Motor North America. Additionally, in a memorandum of understanding between the Port of Chehalis and Twin Transit, the hydrogen fueling station may be located on port property, potentially at a site located just off I-5. The station is expected to be completed within the next year and will support personal and heavy-duty vehicles, including a small fleet of Twin Transit hydrogen fuel cell buses expected in 2023.
- **Washington Maritime Blue** – is leading a Greater Pacific Northwest regional consortium of public and private stakeholders to leverage the region’s green energy resources to transform the region into a global hub for green hydrogen technology, including the production and use of hydrogen in heavy-duty applications such as maritime shipping, in drayage fleets at ports, in long-haul trucking fleets, and in public transit fleets, as well as for aerospace and stationary uses.
- **Puget Sound Energy and Mitsubishi Power** – a joint development agreement to collaborate on the implementation of large-scale, carbon-free renewable generation and storage, including green hydrogen production, storage assets, and transportation facilities (building on Mitsubishi Power and Magnum Development’s grid-scale green hydrogen storage project introduced in May 2019 in Delta, Utah)
- **PACCAR of Bellevue, WA** is a recent recipient of the U.S. DOE’s Supertruck 3 program. This \$33 million award will fund the development of 18 Class-8 heavy-duty battery electric and fuel cell vehicles (United States Department of Energy, 2021).

## BRITISH COLUMBIA, CANADA

British Columbia is the “first province in Canada to release a comprehensive hydrogen strategy” and as such rounds out the Pacific Northwest as a region of important hydrogen activity. Of special note:

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- **B.C. Hydrogen Strategy** – The Government of British Columbia released its B.C. Hydrogen Strategy, “A sustainable pathway for B.C.’s energy transition” in July 2021 (Government of British Columbia, 2021). The plan provides “a blueprint for how renewable and low-carbon hydrogen will support its climate goals and create new jobs in B.C.’s growing clean-tech sector.”
- **B.C. Hydrogen Strategy Actions** – Part of CleanBC, the B.C. Hydrogen Strategy “includes 63 actions for government, industry and innovators to undertake during the short term (2020-25), medium term (2025-30) and long term (2030 and beyond). The strategy’s immediate priorities include scaling up production of renewable hydrogen, establishing regional hydrogen hubs and deploying medium- and heavy-duty fuel-cell vehicles.”
- **Hydrogen BC** – is the regional branch of the Canadian Hydrogen and Fuel Cell Association (CHFCA) in British Columbia. “Established with the support of the BC Government, Hydrogen BC is comprised of a public-private partnership with the mandate to promote the rollout of fuel cell electric vehicles (FCEVs) and hydrogen fueling stations (HFS) in the province.”

## NORTHEAST STATES

The Northeast is another region of hydrogen interest and activity. Though there are no large deployments of fuel cell vehicles in this region, there has been progress on establishing a hydrogen fueling station network to support this anticipated vehicle market. Furthermore, there have been efforts to ensure a renewable source of hydrogen for the region; for example, all the hydrogen at Air Liquide retail-facing stations is 100% renewable (hydroelectric). As in other regions, many utilities in the Northeast are engaged in hydrogen in some capacity. As for policies, state EV rebates and incentives are generally neutral and apply equally to battery electric and fuel cell electric vehicles. A few additional noteworthy policies and activities are noted below.

### Hydrogen-supportive legislation in the Northeast States

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- **CT Zero Emission Bus Implementation Plan** – The Connecticut Department of Transportation (CTDOT), in consultation with the Connecticut Center for Advanced Technology, developed the Connecticut Hydrogen and Fuel Cell Deployment Transportation Strategy: 2011-2050 to identify strategies to expand the availability and use of hydrogen fuel and renewable energy sources. The strategy includes a plan to implement zero emission buses on a statewide basis, including the identification of specific locations for hydrogen fueling stations along state highways and other locations.

### Current and announced hydrogen projects in the Northeast States

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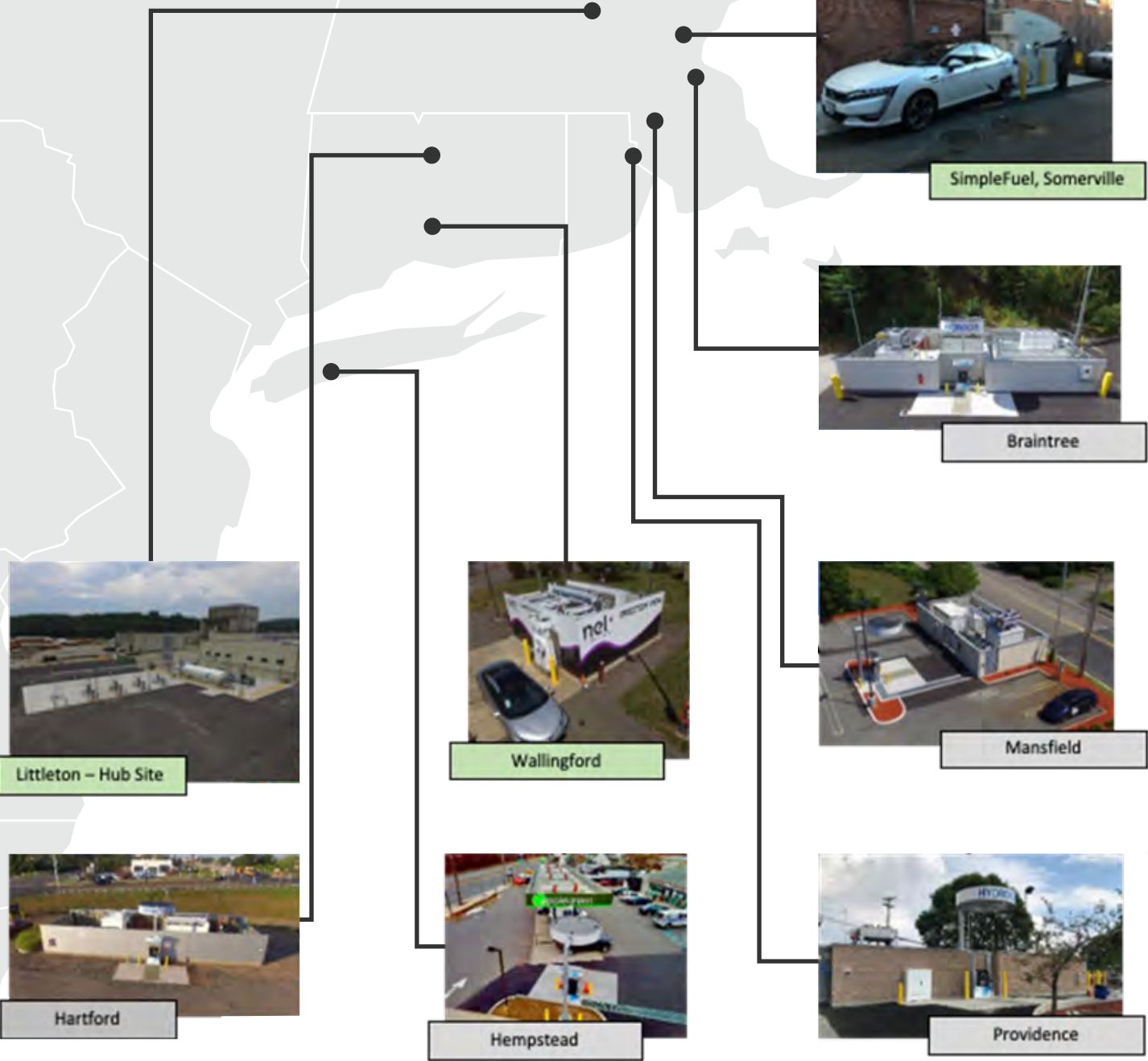
- **CT/MA/NY/RI Hydrogen Fueling Stations** – as shown **Figure 6** below, there are eight hydrogen sites capable of supporting vehicle fueling in this region - three are currently call-ahead-and-reserve stations and five are idled (but operationally ready) while waiting for auto and truck makers to begin deploying fuel cell vehicles into the Northeast market. Several additional sites are being actively surveyed. The region has been working with automakers to begin retail deployment of vehicles, which some believe hinges on a long-awaited regulation change from the Massachusetts Department of Transportation to allow hydrogen fuel cell vehicles to travel through Boston's tunnel system. This change is expected to occur in early 2022.
- **Air Liquide Electrolyzer** – is completing the installation of a 20MW Proton Exchange Membrane (PEM) electrolyzer at its existing hydrogen production facility in Becancour, Quebec, which will be the world's largest PEM electrolyzer in operation. The facility uses hydro-electricity – a renewable power – and is expected to provide green hydrogen to support the Northeast mobility and industry markets.
- **Hydrogen Forklifts** – There is a growing deployment of hydrogen fuel cell forklifts for use at distribution centers throughout the U.S. This includes numerous sites in NY, MA, CT and NH, all of which have onsite liquid hydrogen storage tanks and employ indoor dispensers at 350 bar pressure.<sup>4</sup> Major users in this region include Walmart, Amazon and Sysco.

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<sup>4</sup> The bar is a metric unit of pressure, with 1 bar being equivalent to normal atmospheric pressure. Because hydrogen is a very lightweight gas under normal conditions, it takes up a large volume unless stored under pressure. Common pressures used in FCEV dispensing are 350bar and 700 bar.

**Figure 6.** Northeast Hydrogen Fueling Infrastructure

**Key**  
Green – Call Ahead/Ready Now  
Grey – Idled & Ready For Use



Source: Massachusetts Hydrogen Coalition

# OREGON

## Hydrogen-supportive legislation in Oregon

The policy landscape in Oregon is inclusive and supportive of hydrogen and fuel cell vehicles. For example, the state's ZEV targets allow for both battery and fuel cell electric vehicles, as do the state fleet procurement requirements, and the Clean Fuels Program offers credits to the producers of low-carbon transportation fuels, including hydrogen. The following highlight policies in Oregon that support the hydrogen industry:

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- **Senate Bill 333 (2021)** – Directs the Oregon Department of Energy (ODOE) to conduct a study of the benefits and barriers to the production and consumption of renewable hydrogen in Oregon. The study is due to the legislature by September 2022.
- **Clean Vehicle Rebate Program** – provides rebates to Oregon residents, businesses, non-profit organizations and government agencies for the purchase or lease of plug-in hybrid electric vehicles (PHEVs) and zero emission vehicles (ZEVs), including FCEVs. HB 2165, which passed in the 2021 Legislative session, includes an increase from \$50k to \$60k of the maximum allowable retail price of FCEVs to qualify for Oregon's standard and Charge Ahead vehicle rebates.
- **Clean Fuels Program (CFP)** – launched by the Oregon Department of Environmental Quality (DEQ) in 2016, the CFP aims to reduce the average amount of carbon intensity of transportation fuels used in Oregon by replacing high carbon fuels such as gasoline and diesel with low or zero carbon substitutes such as electricity or low-carbon hydrogen. Producers of low-carbon fuels earn credits through the Program which can then be sold, reducing operating costs.
- **Advanced Clean Trucks (ACT) Rule** – passed in November 2021, the ACT rule requires medium- and heavy-duty vehicle manufacturers to sell zero-emission vehicles as a certain percentage of sales, beginning with the 2025 model year, with percentage increases each year through 2035, reaching 55% for Classes 2b-3; 75% for Classes 4-8; and 40% for Class 7-8 Tractors. Note: As a result of this new rule, the trucking sector is likely to be increasingly interested in policies and initiatives that ensure the availability of the charging and hydrogen fueling infrastructure necessary for compliance.
- **The Heavy-duty Low-NOx Rule** – also passed in November 2021, this rule imposes new air pollution standards on new heavy-duty diesel and non-diesel engines sold in the state, requiring a 75% reduction in nitrogen oxide (NOx) emissions in new trucks beginning with the 2024 engine model year, and a 90% reduction beginning with the 2027 engine model year. The rule also requires lower particulate matter 2.5 (PM2.5) standards for these engines, resulting in a 50% reduction in 2024.
- **House Bill 3055 (2021)** – Allows natural gas utilities to recover hydrogen-related infrastructure investments.

## Current and announced hydrogen projects in Oregon

While there are no existing retail fuel stations and no commitments from automakers to deploy FCEVs in Oregon, there is growing interest in hydrogen production and hydrogen fuel cell vehicles. Several of the potentially more impactful hydrogen activities currently being planned, include:

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- **FHWA Alternative Fuels Corridor Program Designation** – Oregon’s portion of I-5 was successfully designated as “corridor pending” for hydrogen through the U.S. Department of Transportation’s Federal Highway Administration’s (FHWA) fifth round of the Alternative Fuels Corridor Program.
- **Eugene Water & Electric Board (EWEB)** – is partnering with NW Natural and the Bonneville Environmental Foundation to explore the development of a large 2-10 MW renewable hydrogen production facility. The hydrogen production facility will demonstrate how renewable and low-carbon electricity can be transformed into “green” hydrogen, through a process called “power-to-gas” and used to decarbonize the region’s space heating and transportation sectors (Eugene Water & Electric Board, 2020).
- **Portland TriMet** – has completed a “Hydrogen Fuel Cell Bus Feasibility Study” and is now seeking funding for a hydrogen fuel cell bus pilot project (TriMet, 2021).
- **Lane Transit District (LTD)** – having invested in 30 BEVs for their 100 bus fleet, Lane Transit has also expressed interest in hydrogen fuel cell technology as a potential solution to extend range capability (Columbia Willamette Clean Cities Coalition, 2021), (Eugene Register-Guard, 2021)
- **Avangrid** – has proposed a concept to leverage the Klamath Cogeneration Plant for green hydrogen production, including an approximately 20 MW electrolyzer to enable a two percent blend of green hydrogen into the plant’s fuel supply. The goal would be to generate 3,000 metric tons of green hydrogen annually.
- **Coastal Hydrogen Offshore Wind Study Proposal** – A project team including POET (lead), the Port of Coos Bay, and NW Natural is in the early stages of developing planning scenarios that would use 3 GW of offshore wind (OSW) with a large-scale 500 MW electrolyzer to produce renewable hydrogen. The project is seeking funding and there is no set date for electrolysis construction, but in order for the project to qualify for the federal Investment Tax Credit of 30% by 2030, 5% of the capital expenditures must be spent by 2025. This project is likely to capitalize on the recently-passed House Bill 3375, which authorized a 3 GW OSW development project.
- **Daimler Trucks North America (DTNA)**, based in Portland, Oregon, is a recent recipient of the U.S. Department of Energy (DOE) SuperTruck 3 awards. This \$26 million award will fund the development and demonstration of two Class 8 hydrogen fuel cell electric trucks with a targeted range of 600 miles and 25,000-hour durability (United States Department of Energy, 2021).
- **Distribution Centers** – Hydrogen fuel cells are also being used in material handling equipment (including forklifts) at Amazon locations in Salem, OR and at other distribution centers across the Pacific Northwest.

## Section 2: Current FCEV Product Inventory

Readily available and accessible FCEV products are a critical prerequisite to the development of a vibrant and sustainable fuel cell electric vehicle industry. This section of the Study presents an inventory of the FCEV products currently being produced or planned for production by vehicle manufacturers around the world. Although this inventory is among the most comprehensive listings of FCEV products currently available, it is likely to be incomplete and quickly outdated because of the rapidity with which the industry is evolving. Even so, it serves an important purpose in this Study by helping to characterize the current maturity level of the hydrogen fuel cell electric vehicle market across light-duty, medium-duty, and heavy-duty vehicle sectors, including buses.

Tables 4 through 7 present the product inventory developed under this effort and identify, to the extent available, important key features associated with each vehicle.<sup>5</sup> The tables include a column identifying the availability of each vehicle. It is important to note that “availability” is different than “accessibility”, which reflects the ability of customers to acquire the product in their geographic location. Vehicle manufacturers today are generally limiting FCEV production (this is certainly the case in the light-duty vehicle segment) and are focusing that distribution on specific geographies where a critical mass of supporting infrastructure, financial incentives, and market goals can be achieved before scaling up production levels and expanding the distribution landscape. As a result, it can be very difficult to acquire specific FCEV products in locations such as Oregon. This situation will improve over time, but for now it is an important contributing factor to the slow ramp-up of FCEV activity in Oregon that is projected in Section 3 (Modeling & Analysis).

**Table 4.** Inventory of Current and Planned FCEV Product Offerings for Light-Duty Vehicles



Make	Model	Market	Available	Range (mi)	H <sub>2</sub> Capacity	Fuel Economy- MPGe (city/hwy/comb)	Class/ Type	More Information
<b>LDV</b>								
<b>Honda</b>	<b>Clarity</b>	US	Discontinued in 2021	360 mi	5.46 kg	77/67/72	Light-Duty Vehicle	
<b>Hyundai</b>	<b>Nexo Bue</b>	US	Yes	380 mi	6.33 kg	65/58/61	Light-Duty Vehicle	
<b>Hyundai</b>	<b>Nexo Limited</b>	US	Yes	354 mi	6.33 kg	59/54/57	Light-Duty Vehicle	
<b>Toyota</b>	<b>Mirai XLE</b>	US	Yes	402 mi	5.6 kg	76/71/74	Light-Duty Vehicle	
<b>Toyota</b>	<b>Mirai Limited</b>	US	Yes	357 mi	5.6 kg	67/64/65	Light-Duty Vehicle	
<b>BMW</b>	<b>i Hydrogen Next “X5”</b>	EU	2022				Light-Duty Vehicle	

<sup>5</sup> Data sources used to construct the table include the following: (California HVIP, 2021), (Drive to Zero, 2021), (United States Department of Energy, 2021), (GoElectricDrive, 2021), and (United States Department of Energy, 2021).







**Table 5.** Inventory of Current and Planned FCEV Product Offerings for Buses

Make	Model	Market	Available	Range (mi)	H <sub>2</sub> Capacity	Fuel Economy- MPGe (city/hwy/comb)	Class/ Type	More Information
<b>Buses</b>								
<b>Caetano</b>	<b>H2. City gold</b>	EU		250 mi		From 6 kg/100 km	Transit Bus	
<b>Eldorado</b>	<b>Axess (35ft)</b>	US	Yes	260 mi			Transit Bus	
<b>Eldorado</b>	<b>Axess (40Ft)</b>	US	Yes	260 mi			Transit Bus	
<b>Hyundai</b>	<b>Elec City</b>	Korea		300 mi	845 liter		Transit Bus	
<b>Hyzon</b>	<b>Coach Bus</b>	US/EU		<500 mi			Transit Bus	
<b>New Flyer</b>	<b>Xcelsior XHE60 (60ft)</b>	N/A	Yes	300 mi	60 kg		Transit Bus	
<b>New Flyer</b>	<b>Xcelsior XHE40 (40ft)</b>	N/A	Yes	300 mi	37.5 kg		Transit Bus	
<b>Rampini</b>	<b>H80</b>	EU	In development	125 mi			Transit Bus	
<b>Solaris</b>	<b>Urbino 12</b>	EU	2021	220 mi			Transit Bus	
<b>US Hybrid</b>	<b>H2 Ride 30</b>	US		125 mi			Bus/Van	

Make	Model	Market	Available	Range (mi)	H <sub>2</sub> Capacity	Fuel Economy- MPGe (city/hwy/comb)	Class/ Type	More Information
<b>Buses</b>								
<b>US Hybrid</b>	<b>H2 Ride 32</b>	US		200mi			Bus/van	
<b>Van Hool</b>	<b>A330 Fuel Cell</b>	EU	2021	220-250 mi			Transit bus	

**Table 6.** Inventory of Current and Planned FCEV Product Offerings for Additional Buses (US Import Less Likely)

Make	Model	Market	Available	Range (mi)	H <sub>2</sub> Capacity	Fuel Economy- MPGe (city/hwy/comb)	Class/ Type	More Information
<b>Additional Bus Makers (US import less likely)</b>								
<b>Changsha Sunda</b>	<b>Hydrogen Fuel bus</b>	China		310 mi			Transit Bus	
<b>Tata Motors</b>	<b>Starbus Fuel Cell</b>	India	2024		14.5 kg		Transit Bus	
<b>Yinlong</b>	<b>Bus 8.5m FCEV</b>	China	Yes	62 mi			Bus	
<b>Yinlong</b>	<b>Bus 10.5m FCEV</b>	China	Yes	336 mi			Transit Bus	
<b>Yinlong</b>	<b>Bus 12m FCEV</b>	China	Yes	280 mi			Bus	
<b>Zhong Tong</b>		China	Yes	218 mi			Transit Bus	

**Table 7.** Inventory of Current and Planned FCEV Product Offerings for Medium- and Heavy-Duty Vehicles

Make	Model	Market	Available	Range (mi)	H <sub>2</sub> Capacity	Fuel Economy- MPGe (city/hwy/comb)	Class/ Type	More Information
<b>MD and HD Trucks</b>								
<b>Cummins &amp; Navistar JV</b>		US	In Development	300 mi			Heavy-Duty Vehicles – Class 8	
<b>Daimler (w/Volvo JV)</b>	<b>GenH2</b>	EU/NA	2027	600 mi			Heavy-Duty Vehicles – Class 8	
<b>E-Trucks Europe</b>	<b>H2</b>	EU		75 mi			Medium-Duty Vehicle – Garbage Truck	
<b>Esoro</b>	<b>BZ-LKW</b>	EU	In Development	250 mi	31 kg		Heavy-Duty Vehicles – Class 8	
<b>Hino (with Toyota FC)</b>	<b>HINO FC Truck</b>	US	In Development (2021)					
<b>Hyundai</b>	<b>HDC-6 Neptune (concept)</b>		Concept	250 mi				
<b>Hyundai</b>	<b>XCient</b>	US/EU	Eu-Avail US - 2023	EU-250 mi US-500 mi	EU - 31kg US - TBD			
<b>Hyundai</b>	<b>Mid-Size FCEV</b>	Korea		373 mi	25 kg		Medium-Duty Vehicle – Garbage Truck	
<b>Hyzon</b>	<b>Heavy-duty</b>	US/EU	Yes	250-380 mi	30 kg		Heavy-Duty Vehicles – Class 8	
<b>Hyzon</b>	<b>Medium-duty</b>	US/EU	Yes	250-380 mi			Medium-Duty Vehicle	

Make	Model	Market	Available	Range (mi)	H <sub>2</sub> Capacity	Fuel Economy- MPGe (city/hwy/comb)	Class/ Type	More Information
<b>MD and HD Trucks</b>								
<b>Kenworth (w/ Toyota)</b>	<b>T680</b>	US	Demo	150- 350 mi	30 kg		Heavy- Duty Vehicles – Class 8	
<b>Mitsubishi Fuso</b>	<b>Vision F-cell</b>	Japan	Late 2020s	186 mi			Medium- Duty Vehicle	
<b>Nikola tre</b>	<b>Day Cab</b>	US	2023	500 mi	70 kg		Heavy- Duty Vehicles – Class 8	
<b>Nikola Two</b>	<b>Sleeper Cab</b>	US	2025	900 mi	110 kg		Heavy- Duty Vehicles – Class 8	
<b>US Hybrid</b>	<b>H2 Cargo</b>	US	Yes	125 mi			Medium- Duty Vehicle – Cargo Van	
<b>Workhorse (w/ Plug Power)</b>	<b>EGEN</b>	US	Pilot	160 mi			Medium- Duty Vehicle – Class 5-6	

## Section 3: Modeling & Analysis

The analysis and results presented in this section describe the modeled “what if” scenario assuming a 5% penetration of hydrogen fuel cell vehicles in the state’s 2035 zero-emission vehicle goals, which applies to light-duty vehicles. Further assumptions regarding the targets for the additional use cases studied are described below. Five transportation use cases from TEINA were modeled in the hydrogen analysis, including LDV Urban, LDV Highway Corridor (I-5, I-84, I-82, US 20, US 26, US 97, US 101), MD trucking (Local Commercial), HD trucking (long-haul transport), and transit buses. This analysis did not investigate the school bus, e-micro mobility, Rural or Disadvantaged Communities use cases as defined in TEINA.

### Target Assumptions

As in the original TEINA study, the targets for light-duty vehicles (LDV) are based on the state’s SB 1044 goals - adjusted to assume that FCEVs make up 5% of LDV ZEVs in 2035. For the purpose of determining hydrogen fueling station needs, it was further assumed that FCEV adoption in the LDV sector would begin in urban areas, as is the case in California. This is largely a function of where automakers have focused their marketing and outreach efforts and where hydrogen fueling stations have been concentrated. Thus, in this study, 5% of 2 million urban LDVs, or 100,000 LDVs, are assumed to be FCEVs in 2035. The LDV Highway Corridor use case is a function of the LDV use case

and assumes that 5% of the average daily traffic of LDVs is made up of FCEVs (using Annual Average Daily Traffic - or AADT - on the major interstate highway corridors in Oregon as an input). Since SB 1044 does not provide state targets for transit buses, medium-duty or heavy-duty vehicles, this Study has adopted the same methodology used in the original TEINA study for projecting ZEVs for these additional use cases to ensure a consistent approach. This Study assumes 10% of the ZEV buses in TEINA are fuel cell buses, and it assumes 10% of all medium-duty truck vehicle miles traveled (VMT) and 25% of all heavy-duty truck VMT is met by hydrogen fuel cell electric trucks. The 2035 targets assumed by use case are summarized as follows:

**Table 8.** Target Assumptions by Use Case

Use Case	Target Assumptions
Light-Duty Vehicles	5% of urban light-duty ZEVs are FCEVs
Transit Buses	10% of TEINA e-buses are FCEVs
Medium-Duty Vehicles	10% of medium-duty TEINA e-VMT are FCEVs
Heavy-Duty Vehicles	25% of heavy-duty TEINA e-VMT are FCEVs

*Note: The LDV Highway Corridor use case is a function of the daily traffic of the LDV use case.*

These analytical targets were determined as a result of interviews and discussions with the Advisory Group, industry stakeholders, and others. The estimated targets shown above reflect a general consensus that FCEVs are likely to play a larger role in electrifying the more challenging transportation sectors of transit buses and trucking. Therefore, the analysis assumed a more aggressive set of FCEV penetration levels for these use cases. In the case of the heavy-duty trucking analysis, the North American Council for Freight Efficiency (NACFE) was also consulted, resulting in the higher assumption of 25% of total HDV ZEV miles – as fuel cell trucks are likely to be used to take on the longest and most challenge trucking routes.

## FCEV Ramp-up

For modeling purposes, it was necessary to estimate both the 2035 endpoints described in the previous section and assumptions about when FCEVs begin to ramp-up. The analysis assumes a relatively slow startup to FCEV deployments in Oregon due to several factors: the lack of current FCEV product availability across sectors; the constrained hydrogen vehicle production capacity of automakers (only 12,000 cars and 48 buses have been deployed to date, according to the CaFCP); and the limited geographic areas of FCEV deployment (automakers are currently focused on California). Beyond 2025, the ramp-up curve follows an exponential growth curve to meet 2035 targets. This analysis has assumed similar ramp-up timelines for LDVs, MDVs, and HDVs. As is discussed later in Section 6 (Recommendations), it will be critical to watch for a number of key market leading indicators that could cause these adoption curves to accelerate in Oregon much more rapidly than is projected in this analysis.

## Methodology and Modeling Results

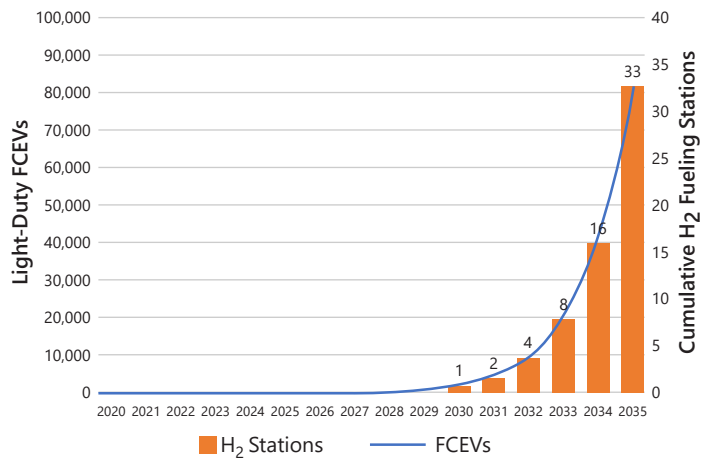
The following paragraphs describe the methodology used to model and project the growth of hydrogen fuel cell vehicles and the supporting fueling station infrastructure required in Oregon over the next 14 years. TEINA projections regarding ZEVs and electric vehicle miles traveled (e-VMT) were used to set FCEV fleet and VMT targets in this analysis as well, based on the assumptions outlined in the previous paragraphs. An exponential growth model was employed to calculate the annual adoption of FCEVs in each vehicle class in Oregon counties to meet the targets defined for 2035. These vehicle fleet and e-VMT numbers were then used to estimate annual hydrogen demand and the resultant number of fueling stations required to support that demand.

This analysis has treated the demand for each use case independently. In other words, it has not optimized fuel demand in a way that contemplates fueling stations being used to serve vehicles from more than one use case. Therefore, the paragraphs that follow present the results of this modeling analysis separately for Urban LDVs, Highway Corridors, medium- and heavy-duty trucks, and transit buses.

## Urban Light-Duty Vehicles

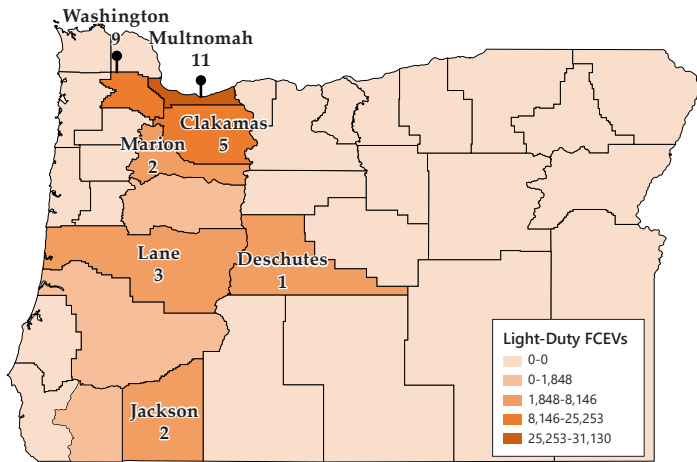
The light-duty FCEV target in this study is assumed to be 5% of urban electric LDVs in 2035 as in the TEINA study - i.e., 80,000 light-duty FCEVs. **Figure 7** shows that both FCEVs and the corresponding fueling stations grow exponentially beginning in 2030. Based on typical commercial hydrogen fueling station sizes today, a 1,500 kg daily hydrogen capacity station is assumed to support urban LDV fueling in the early years. A minimum demand threshold of 325 light-duty FCEVs per county (corresponding to a minimum daily hydrogen demand of 200 kg) was used in the model to trigger the need for a fueling station within the county. This results in a requirement of **33 1,500 kg capacity stations** to support the estimated 80,000 light-duty FCEVs in Oregon's urban and most populous counties by 2035.

**Figure 7.** Light-Duty FCEVs & H<sub>2</sub> Fueling Stations in OR: 2020 - 2035



**Figure 8** shows estimated FCEV and fueling station numbers for 2035. As also observed in TEINA, the number of FCEVs is typically proportional to the population of the county (and the number of vehicle registrations).

**Figure 8.** H<sub>2</sub> Fueling Stations Serving Urban Light-duty Fuel Cell Vehicles in Oregon by 2035

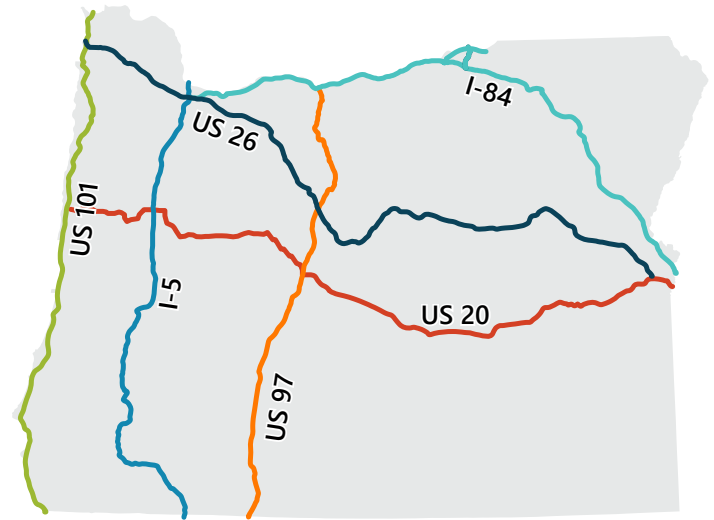


### Highway Corridors

The LDV Highway Corridor analysis assumed that 5% of average LDV ZEV daily traffic was made up of FCEVs. This analysis used Annual Average Daily Traffic (AADT) data on major interstate highway corridors in Oregon as an input and estimated the hydrogen demand resulting from the projected traffic volume on each highway segment.

Proportional to current trends, the I-5, I-84 and US-26 Alternative Fuel Corridors are expected to experience the heaviest FCEV demand in 2035. A Highway Corridor station was triggered in this analysis when at least 100 FCEVs were estimated to be traveling on the Highway Corridor segment, corresponding to a minimum daily demand of 500 kg over the length of the corridor. All light duty vehicles traveling on corridors in Oregon, whether starting their trips within or out of state, are assumed to refuel with 30% more energy than is required to complete their trips. A 30% positive adjustment was applied to hydrogen fueling demand on highway corridors to account for this additional demand. This is consistent with the calculation of highway corridor electricity demand in the TEINA study. Using this threshold, 14 1,500 kg capacity stations are estimated to be required to support all light-duty FCEVs on the 2,200 miles of highway corridors in Oregon by 2035 (**Figure 9** and **Table 9**).

**Figure 9.** Highway Corridors in Oregon Analyzed for Light-Duty H<sub>2</sub> Fueling Stations



**Table 9.** H<sub>2</sub> Fueling Stations by Highway Corridor to Support Light-Duty FCEVs in Oregon by 2035

Highway	2035	Daily Traffic (1000s)	Length (miles)
US 97	1	40	291
US 101	1	70	350
US-20	1	42	449
I-5	5	176	308
I-84 & I-82	4	72	387
US 26	2	82	453
<b>Total</b>	<b>14</b>	<b>482</b>	<b>2,238</b>

## Medium- and Heavy-Duty Trucks

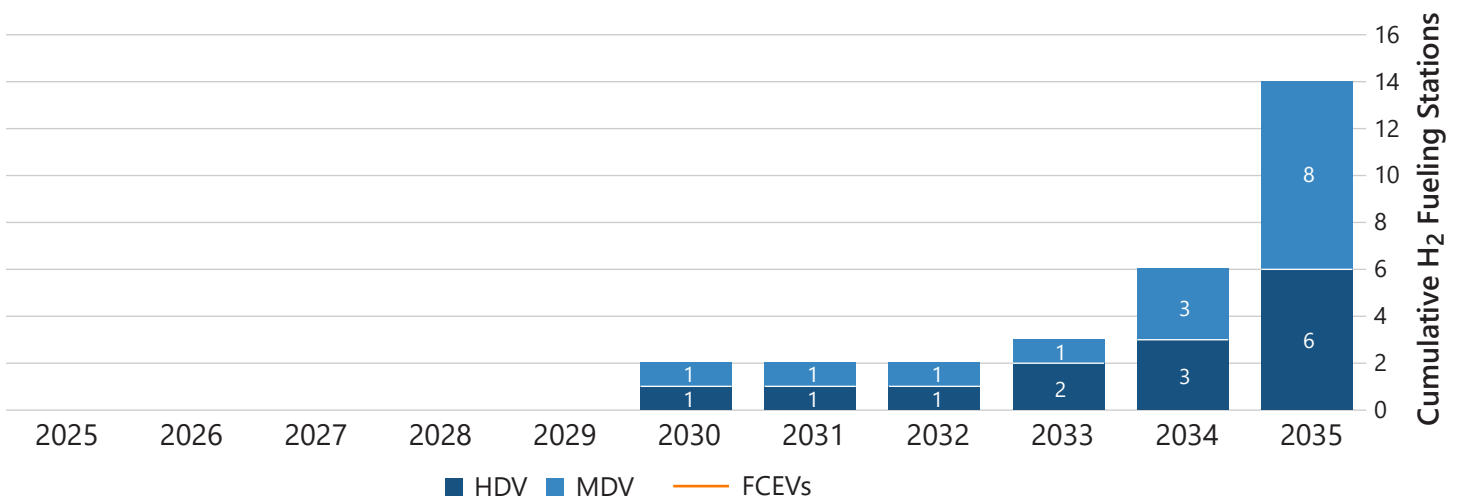
For medium-duty and heavy-duty trucks, the analysis was based on daily VMT per county as this is believed to lead to a better estimate of demand than vehicle registrations. The 2035 targets are set to 10% of the TIENA electric VMT share for medium-duty trucks and 25% for heavy-duty trucks. These numbers also align with estimates from the North American Council for Freight Efficiency (NACFE) for the highest mileage trucks per weight class that would be the most suitable candidates for replacement by FCEVs.

Based on TEINA’s target-driven approach, FCEV demand by trucks is projected to increase after 2030 and to grow exponentially after 2032, as shown in **Figure 10**. Larger 5,000 kg daily hydrogen capacity stations will meet the early market needs of these truck classes balanced with some important geographical distribution of stations. Station need in each county was estimated based on a minimum daily hydrogen fueling demand of 1,500 kg, equivalent to a minimum threshold of 25 trucks in each class passing through the county. Using these inputs, **14 5,000 kg capacity stations** would be required to support fuel cell freight activity in Oregon by 2035.

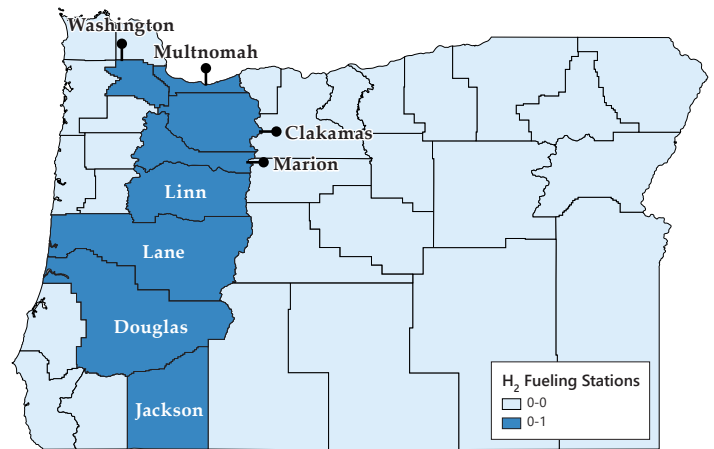
**Figure 11** maps the counties with sufficient medium-duty trucking demand in 2035 to result in the installation of fueling stations. Local truck activity in each marked county can be supported by a single 5,000 kg capacity station – an indicator of the expected size of the market.

**Figure 12** maps the counties with a sufficiently high level of interstate heavy-duty truck activity to warrant the installation of a fueling station.

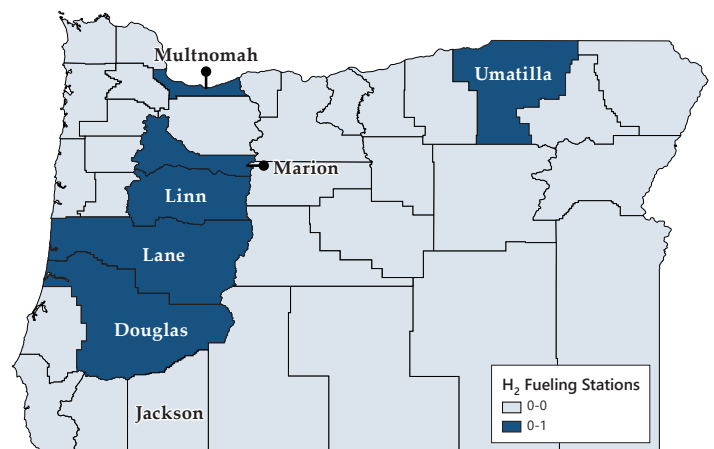
**Figure 10.** Medium- & Heavy-Duty FCEV H<sub>2</sub> Fueling Stations in OR: 2025 - 2035



**Figure 11.** H<sub>2</sub> Fueling Stations by County Serving Medium-Duty Fuel Cell Trucks in Oregon by 2035



**Figure 12.** H<sub>2</sub> Fueling Stations by County Serving Heavy-Duty Fuel Cell Trucks in Oregon by 2035





## Transit Buses

The FCEV transit bus target for 2035 is defined to be 10% of the ZEV transit buses projected in TEINA, which is not sufficient to drive large-scale fueling stations until 2030. The modeling results indicated that five 5,000 kg daily hydrogen capacity stations would be sufficient to support an estimated 200 fuel cell buses in Oregon by 2035 (Figure 13).

**Figure 13.** FCEV Buses & Fueling Stations in OR: 2025-2035

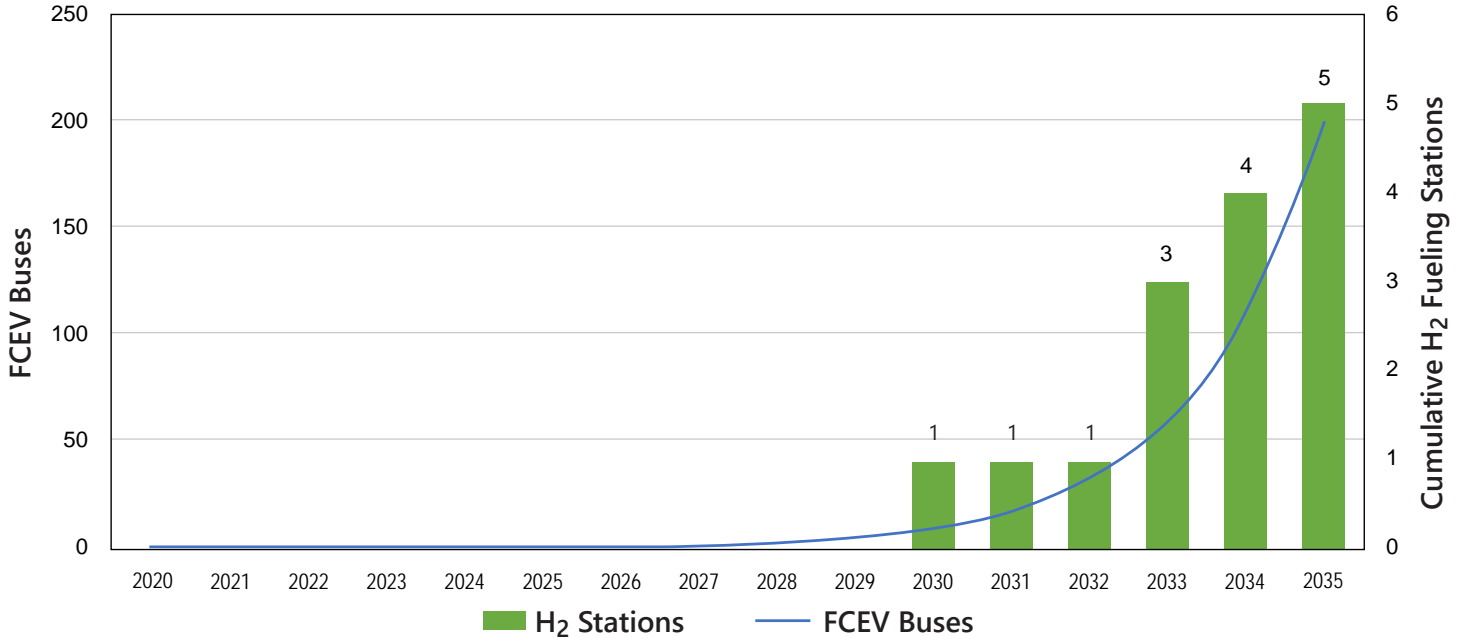
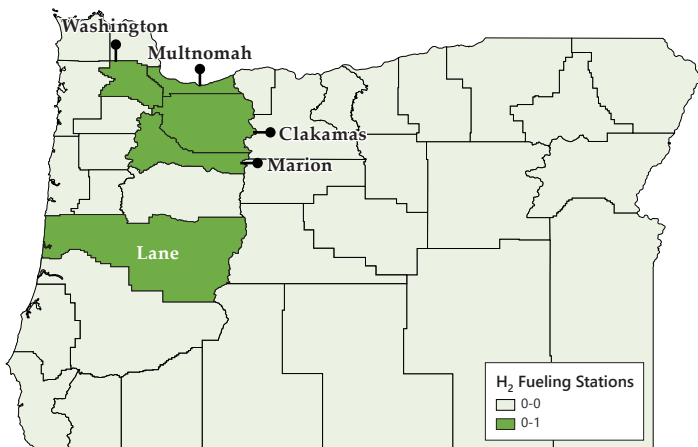


Figure 14 maps the counties where bus demand is expected to be sufficient to warrant hydrogen fueling stations. As is shown in the map, fuel cell buses are projected to be deployed in the most populous counties, which is also proportional to the current size of transit fleets operating in these counties.

**Figure 14.** H<sub>2</sub> Fueling Stations by County Serving Fuel Cell Transit Buses in Oregon by 2035



It is important to note that the modeling assumed a uniform distribution, on a percentage basis, of the FCEV buses across all transit agencies in the state. This assumption resulted in a wide distribution of the FCEV buses across many fleets, so that many of these fleets did not possess a large enough number of FCEV buses to support even a single hydrogen fueling station by 2035. It is more likely, however, that hydrogen bus fleets will evolve at different rates across the different transit agencies. More specifically, a few large transit agencies, such as TriMet or Lane Transit District (LTD), could pursue a more aggressive hydrogen strategy on a quicker timetable than many of the smaller transit agencies. To the extent this happens, station fueling needs will evolve in a more concentrated and localized manner than has been projected by this analysis.

## Modeling Summary

The resultant total hydrogen fueling station demand, inclusive of all modeled use cases, is presented in **Table 10**. Station results were derived analytically and are based on input assumptions regarding the 2035 targets and the ramp-up rate to these targets. In reality, many factors can influence hydrogen fuel cell electric vehicle adoption by consumers, public fleet operators, trucking fleet operators, and transit agencies in Oregon. Section 6 (Recommendations) provides a more robust discussion of the recommendations and leading indicators influencing the growth of the hydrogen vehicle market.

**Table 10.** Summary of Modeled Results – Hydrogen Fueling Stations Required by Use Case (Cumulative)

	<b>2025</b>	<b>2030</b>	<b>2035</b>
Use Case	# Stations	# Stations	# Stations
<b>Light-Duty Vehicles: Urban</b>	0	1	33
<b>Light-Duty Vehicles: Corridor</b>	6	7	14
<b>Medium-Duty Vehicles</b>	0	1	8
<b>Heavy-Duty Vehicles</b>	0	1	6
<b>Transit Buses</b>	0	1	5
<i>Total</i>	<b>6</b>	<b>11</b>	<b>66</b>

*Note: The hydrogen fueling needs presented in this study are the result of a capacity analysis that estimated the number of stations required to serve an assumed number of FCEVs. It is not a projection of what is likely to happen or a recommendation of what should happen. As such, the timeline presented in this Study could be quite different than what occurs.*

## Section 4: Hydrogen Fueling Needs Assessment & Costs

This section describes the needed characteristics of hydrogen fueling stations and the estimated capital investment required to support the modeled scenarios described in the previous section.

Hydrogen at a fueling station can either be produced onsite or delivered in gaseous or liquid form. A hydrogen fueling station typically requires a hydrogen storage tank at its facility as well as a compressor and dispensing equipment to further pressurize the stored hydrogen and dispense it into vehicles. Some hydrogen fueling stations may choose to store hydrogen in liquid form, as a liquid storage tank holds nearly nine times more hydrogen than a gaseous tank. In this case, the hydrogen fueling station must also have equipment to convert the liquid hydrogen back into a gaseous form for fueling purposes. Onsite hydrogen production can be performed by small steam methane reformation (SMR) systems or electrolysis. Both can be as small as the footprint of one to two 40-foot shipping containers and each site must determine the right size for its needs. Regardless of the production method that is used, the hydrogen will follow the same storage, compression and dispensing process to move into a vehicle as fuel (Gladstein, Neandross & Associates, 2021).

### Hydrogen Fueling Infrastructure Characteristics and Needs – Light-Duty Vehicles

As mentioned above, light-duty hydrogen fueling stations may be supported by a combination of liquid or gaseous on-site hydrogen storage.<sup>6</sup> Liquid storage is typically associated with larger-capacity stations capable of dispensing more than 1,000kg per day. Today, these larger-capacity liquid stations commonly have four fueling nozzles, whereas gaseous stations often offer two fueling nozzles. All hydrogen FCEVs in the U.S. light-duty vehicle sector today are capable of being fueled at 700bar pressure (vs. 350bar pressure), delivering faster fueling to vehicles.

Regarding station lead times, based on California's relatively substantial experience, it takes roughly 12-24 months to build a station once funding has been secured. Station permitting can account for much of this lead time; stations today typically move from shovel contact to open within 4-6 months after the permit has been issued by the local Authority Having Jurisdiction (AHJ).

For the past 20 years, California has worked closely with the hydrogen industry (car manufacturers, hydrogen producers, station providers) through organizations such as the CA Fuel Cell Partnership, to plan and design a hydrogen fueling station network for light-duty vehicles. This coordinated effort has resulted in a market-driven cluster approach, siting hydrogen fueling stations in key urban areas with additional highway connector stations to support intercity travel. **Figure 15** (United States Department of Energy, 2021), illustrates this urban clustering approach, with a dense network of stations in the Los Angeles and San Francisco metropolitan areas and a highway connector station located at Harris Ranch in Coalinga, CA – roughly 200 miles from both Los Angeles and San Francisco. Due to the typical driving range of 350-400 miles for light-duty FCEVs and given the quick refueling capability of dispensed hydrogen, highway stations placed at 200-mile intervals along corridors are sufficient to support a nascent but growing hydrogen FCEV market.

For modeling purposes, a 1,500 kg/day station capacity was assumed for urban and highway hydrogen fueling stations alike, matching California's Harris Ranch station with a single dispenser (dual nozzles at 350bar and 700bar). In the future, however, it is likely that highway corridor stations will be sized for larger hydrogen capacity and more fueling nozzles – similar to the gasoline station network today.

<sup>6</sup> In DOE's 2020 analysis of 111 funded proposals for newly planned hydrogen stations in California, 63 stations are planning liquid hydrogen storage and 48 are planning gaseous hydrogen storage (United States Department of Energy, 2020)

**Figure 15.** California’s Urban, Market-centric Approach to a Hydrogen Fueling Network



Given the station characteristics above and the assumptions outlined in Section 3 (Modeling & Analysis), this modeling finds that by 2035, 47 hydrogen stations (33 for urban vehicles and 14 for Highway Corridors) will be required to support a 5% hydrogen FCEV penetration across light-duty zero emission vehicles. This modeling and analysis effort reflects a hydrogen demand-driven approach based on Oregon’s state ZEV targets, whereas California has worked with industry stakeholders to apply a market-driven approach as described above to leverage hydrogen fueling stations to drive FCEV awareness and consumer-adoption (as well as meeting overall demand) in urban areas. As Oregon considers investments, it is worth noting that different levels of investment may be appropriate under a market-oriented approach. As further described in Section 6 (Recommendations), Oregon stakeholders can gain a deeper understanding of how to develop an FCEV market by joining public/private organizations such as the California Fuel Cell Partnership (CaFCP).

## Hydrogen Fueling Infrastructure Characteristics and Needs – Medium- and Heavy-Duty Vehicles

Unlike the light-duty vehicle market for hydrogen FCEVs, the medium- and heavy-duty vehicle market is not homogeneous. There are notable differences between the fueling requirements for return-to-base vehicles versus the fueling needs of long-distance vehicles that do not regularly return to base. As hydrogen is more likely to be a preferred technology solution for battery-challenged use cases, such as long-haul heavy-duty freight movement, 24/7 point-to-point goods movement, and longer-distance transit bus routes, the private depot and public fueling solutions must be tailored to address different transportation use cases. The critical consideration is to design a fueling system that does not compromise vehicle operations in these segments and to leverage hydrogen’s quick fueling advantage to ensure fueling is convenient. In addition, as with all fueling infrastructure, it is important to design redundancy into the system from the beginning. Stations should have multiple fueling positions (i.e., nozzles) to anticipate vehicle demand and ensure queuing does not become an issue. As there are so few hydrogen stations today serving the MDV and HDV sectors, station lead times are less understood than for the LDV sector. Some factors, such as the larger expected footprints and less urban, less congested locations, could drive shorter lead times, but the additional complexity and scale of these stations, the additional construction required, and the higher electrical infrastructure demands could also drive longer lead times. Regardless, streamlined station permitting and industry experience at scale will be critical to driving shorter lead times in this sector.

Whereas return-to-base fleets, such as those found across transit bus fleets and local commercial goods movement, may rely on 350bar depot fueling, longer-haul trucks are likely to rely on a public fueling infrastructure system that delivers faster fueling rates at 700bar and that aims to ensure 10-15min fills and enough fuel for at least 600-700 miles of range – more than double the amount of fuel needed for transit buses. Interviews with manufacturers and fleets revealed that, over the long term, onboard liquid hydrogen might deliver a higher-performing solution for long-haul trucking and it remains an open question and area of research in the industry.

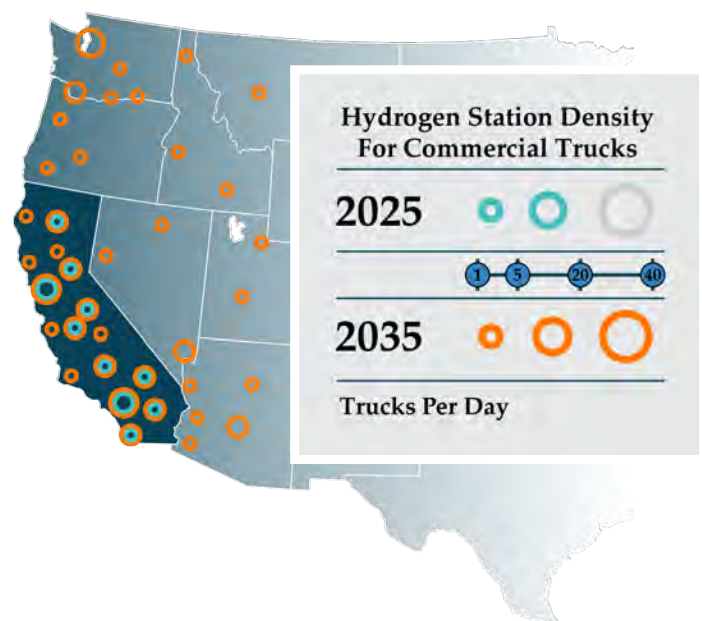
## Case Study: TriMet

Portland’s transit bus agency, TriMet, recently completed a hydrogen modeling and feasibility study to better understand how to achieve a zero-emission bus fleet given the large variability in the distances their buses travel in a given day. Approximately 15% of TriMet’s vehicles travel more than 200 miles per weekday and 40% of their fleet travels more than 150 miles. Given that 200 miles is an ambitious range for a battery electric bus today and given TriMet’s route topography, anticipated passenger loads, and weather conditions (particularly the cold-weather impacts on battery vehicle range), TriMet believes it can serve about half of its fleet with currently available battery electric bus technology. Transitioning the remainder of its fleet to battery electric vehicles would require both faster chargers and more than a 1:1 replacement of its buses – that is, they would need to increase their bus fleet to meet all route needs with battery electric buses. As an alternative, TriMet is investigating using hydrogen fuel cell buses for that portion of the fleet that travels more than 150 miles per day. In the modeling study, TriMet assumed one aggressive scenario that would convert up to 50% of its transit bus fleet to hydrogen and determined that four hydrogen fueling stations would be required (one at each of its depots) to serve this fleet.

A public hydrogen fueling network for long-haul heavy-duty freight movement does not yet exist, even in California. However, it is instructive to consider California’s plans and strategic thinking in this area. A recent CaFCP report outlines a fueling station strategy for heavy-duty trucking that includes a network of 200 fueling stations supporting 70,000 heavy-duty Class 8 trucks by 2035, as illustrated in **Figure 16** (California Fuel Cell Partnership, 2021). These highway corridor stations are spaced approximately 100-150 miles apart. The CaFCP envisions this network of public hydrogen stations will be built along California’s major highway transportation corridors and will extend into neighboring states (including Oregon) post-2025. This highway corridor strategy is unlike the strategy for LDVs described above, which is focused on building and encouraging the growth of FCEV markets, beginning in urban centers. For heavy-duty trucking, the focus is on replicating today’s gas station (or truck stop) experience to deliver fueling that is similarly quick, convenient, affordable and seemingly ubiquitous.

Given these station characteristics and the assumptions outlined in Section 3 (Modeling & Analysis), RMI’s modeling finds that 19 stations will be required to support the modeling assumptions outlined in **Table 8** for medium-duty vehicle, heavy-duty vehicle and transit buses. This includes five stations serving transit, eight stations serving medium-duty vehicles and six stations serving heavy-duty vehicles.

**Figure 16.** CaFCP’s Envisioned Station Network to Support 70,000 Hydrogen Fuel Cell Electric Trucks



# Hydrogen Fueling Infrastructure Cost Estimates

## - LDV and MDV/HDV

In this study, we are considering only the initial capital investment required to establish a hydrogen fueling network. These early capital costs will likely be met by a combination of private and public investors, including the federal government. Large federal investment opportunities, such as the proposed Build Back Better plan (in a state of uncertainty as of this writing), could significantly accelerate investments in hydrogen fueling infrastructure. Among other things, an early version of this plan included a \$3/kg tax credit for hydrogen. And while the cost of hydrogen, and operating costs in general, are critical factors for consumers and fleet operators and can represent much more significant costs over time than the initial station investment, the focus of this study is to provide a rough estimate of the upfront cost of establishing a hydrogen fueling station network for Oregon's planning purposes. It should also be noted that the cost estimates used here are expected to decline over time with advancements in technology and as economies of scale are reached.

As the use of hydrogen in the transportation sector is still a niche and early market, the relatively few stations that have been built have varied widely in cost and those costs have been significantly changing over time (as discussed later in this section). For the purposes of estimating the upfront fueling station investment, we have used the following cost figures as estimates:

### **LDV public fueling station: \$1.9 million for a station dispensing 1,500 kg/day**

- A recent DOE analysis of the 111 new hydrogen stations to be funded in California shows plans for stations storing hydrogen in gaseous form and dispensing 700-1,000 kg/day cost \$1.4 million and larger stations storing hydrogen in liquid form dispensing up to 1,620 kg/day cost between \$1.9-\$4.2 million. For estimating purposes in this study, we have assumed the median capacity and cost of these 111 California stations in various stages of development (United States Department of Energy, 2020).

### **MDV and HDV public fueling station: \$7.5 million for a station dispensing 5,000 kg/day**

- There is much less available data on the cost of hydrogen stations serving larger vehicles and, as virtually all stations are one-offs, economies of scale are not yet evident in the market. As a result, there is a wide range of specifications and costs associated with medium- and heavy-duty station projects. Three available data points were utilized to arrive at this cost estimate:
  - Shell Hydrogen's planned heavy-duty vehicle and rail multi-modal station will cost an estimated \$6.8 million. This station consists of 3x350bar and 3x700bar fueling positions as well as a 250bar dispenser for a rail car and will be capable of delivering 5,000 kg/day (gaseous fuel delivery).
  - Orange County Transportation Authority's (OCTA) station with 4,536 kg of liquid hydrogen storage cost roughly \$6 million and delivers hydrogen at 350bar pressure (fueling time 6-10 minutes). Note: there are additional costs to fill trucks at 700bar (e.g. additional compression hardware needed).
  - First Energy's NorCal Zero station will have a hydrogen capacity of 1,610 kg/day at 700 bar pressure and will support up to 50 trucks with an average fill of 30 kg (a 60kg fill will take less than 15 minutes). Air Liquide will truck in liquid hydrogen from their production facility in Nevada, and the station will vaporize and dispense gaseous hydrogen at 700 bar pressure. The cost of the station is \$8.2 million.

**Table 11** summarizes the key station specifications and capital cost assumptions for all modeled use cases.

**Table 11.** Hydrogen Fueling Station Specifications and Capital Cost Assumptions

<b>Light-duty – Industry Median*</b>	
Station Capacity (daily)	1,500 kg
# Fueling Positions (typical)	2-4
Station Capital Cost	\$1.9M
<b>Medium- and Heavy-duty – Truck and Bus**</b>	
Station Capacity (daily)	5,000 kg
# Fueling Positions (typical)	8
Station Capital Cost	\$7.5M

\* DOE Analysis of California LDV Stations

\*\* Shell H<sub>2</sub>, OCTA, NorCal Zero datapoints

## Estimated Fueling Infrastructure Investment Requirements

Based on these assumptions, the needed upfront investment in hydrogen fueling station infrastructure required to meet the modeled FCEV penetration rates is estimated to be, cumulatively, \$11 million by 2025, \$37.5 million by 2030 and \$232.5 million by 2035, as shown in **Table 12**. That is, by 2025, six hydrogen stations at a cost of \$11 million will serve the LDV market. By 2030, a total of eight LDV stations are required, or two additional stations serving LDVs, and three stations serving medium- and heavy-duty vehicles, at an additional investment cost of \$26.5 million. By 2035, an additional 39 LDV stations and 16 stations serving medium- and heavy-duty vehicles are needed. The cumulative capital cost of a hydrogen fueling station network serving light-, medium- and heavy-duty vehicles as modeled in Oregon in 2035 is an estimated \$232.5M.

**Table 12.** Cumulative Hydrogen Fueling Station Capital Costs by Use Case

Use Case	Assumed Capital Cost/ Station	2025		2030		2035		Assumed Capacity
		# Stations	Total Capital Cost	# Stations	Total Capital Cost	# Stations	Total Capital Cost	
<b>Light-Duty Vehicles: Urban</b>	\$1.9M	0	0	1	\$2M	33	\$63M	1,500kg
<b>Light-Duty Vehicles: Corridor</b>	\$1.9M	6	\$11M	7	\$13M	14	\$27M	1,500kg
<i>Total Light-Duty Vehicles</i>		6	\$11M	8	\$15M	47	\$90M	
<b>Medium-Duty Vehicles</b>	\$7.5M	0	0	1	\$7.5M	8	\$60M	5,000kg
<b>Heavy-Duty Vehicles</b>	\$7.5M	0	0	1	\$7.5M	6	\$45M	5,000kg
<b>Transit Buses</b>	\$7.5M	0	0	1	\$7.5M	5	\$37.5M	5,000kg
<i>Total Medium-and Heavy-Duty Vehicles</i>		0	0	3	\$22.5M	19	\$142.5M	
<i>Capital Costs Total</i>			<b>\$11M</b>		<b>\$37.5M</b>		<b>\$232.5M</b>	

Note: The hydrogen fueling needs presented in this study are the result of a capacity analysis that estimated the number of stations required to serve an assumed number of FCEVs. It is not a projection of what is likely to happen or a recommendation of what should happen. As such, the timeline presented in this Study could be quite different than what occurs.

## Hydrogen Fueling Station Cost Reductions

Hydrogen station costs – specifically those supporting light-duty vehicles – have been decreasing relatively quickly over the past decade. This is attributed to the increasing size and fueling capacity of individual stations as well as the reduced cost of fueling components (storage, compression, dispensing), all of which drive down the cost to build and operate hydrogen stations. In other words, hydrogen fueling stations are benefiting from improved economies of scale. According to a DOE study (United States Department of Energy, 2020), the normalized cost of stations per dispenser has decreased between 77%–88% since 2012. Similarly, a recent CARB report on the economic self-sufficiency of public LDV hydrogen stations ran 840 individual cost, capacity and revenue scenarios and found that, in most cases, the hydrogen fueling network could be built in California without further public financial support beyond planned AB 8 funding, reaching self-sufficiency within the decade (California Air Resources Board, 2020). Industry stakeholders expect that fueling stations for MDVs and HDVs will follow a similar cost-reduction path: stations will move from one-off pilot projects to projects involving several stations and, from these learnings, will be able to benefit from the economies of scale that LDV stations are currently experiencing.



## Section 5: Special Considerations for Oregon

Five key themes arose in this study that were particularly important to stakeholders in Oregon:

- Fuel Cell Electric Vehicle Market  
Growth: LDV vs MDV/HDV
- Transit Bus Fuel Cell Electric Vehicles
- West Coast Hydrogen Corridor
- Hydrogen and the Grid
- Low or Net-Zero Carbon Hydrogen Production

### Fuel Cell Electric Vehicle Market Growth: Light-Duty vs. Medium- and Heavy-Duty

While FCEV technology in the U.S. has rolled out first in the light-duty vehicle sector – Honda, Hyundai, and Toyota have all offered commercial fuel cell vehicles in California – hydrogen fuel cell electric vehicles could ultimately play an even greater role in the medium- and heavy-duty truck and transit bus sectors, as these use cases may be harder to fully electrify with current battery technology. In these more challenging use cases, fuel cells may be cost-competitive sooner than batteries due to the larger batteries otherwise required to deliver the range necessary for these heavier, longer-distance vehicle segments. The increased scale of hydrogen production and large capacity refueling stations required for these larger vehicles will also work to drive down the cost of producing and supplying hydrogen regionally to all vehicles. In particular, captive medium- and heavy-duty fleets with return-to-base vehicles are in a unique position to directly evaluate the opportunity to meet their objectives with fuel cells or batteries, where a single hydrogen fueling station located at (or near) the depot may be sufficient to meet all fueling needs. A few captive fleets moving forward with hydrogen fuel cell vehicles could alter the economics of hydrogen in the region and accelerate the market for other medium- and heavy-duty vehicles, as well as the light-duty sector.

### Transit Bus Fuel Cell Electric Vehicles

Transit agency greenhouse gas targets could speed adoption of FCEVs. TriMet, Portland’s transit bus agency and the largest transit agency in Oregon, is committed to having a 100 percent zero emission fleet by 2040. Currently, given route distance, route topography and cold weather in Oregon, TriMet believes it can serve only about half of its bus fleet with battery electric technology and is considering alternative technologies for the other half. In particular, TriMet recently completed a hydrogen bus feasibility study, as described in Section 4 (Hydrogen Fueling Needs Assessment & Costs), to study the potential for FCEVs to serve the roughly 40% of its bus fleet that travels more than 150 miles per weekday. Other transit agencies across the state, as well as other major medium- and heavy-duty fleets operating within Oregon, might be encouraged in the near-term to assess their fleets for hydrogen FCEV suitability, feasibility, and affordability. This is particularly pressing for fleets like TriMet that have strong internal zero emission vehicle or greenhouse gas (GHG) reduction targets, or those operating within cities or counties with such targets.

## West Coast Hydrogen Corridor

Similar to the West Coast Electric Highway (a battery electric vehicle fast charging network from California to British Columbia), a network of hydrogen stations along I-5 and other major trucking corridors could serve not only Class 8 long-haul hydrogen FCEV trucks but local commercial and private LDVs as well. There are no active plans in place today to build such a hydrogen corridor network, although CaFCP lays out a vision as described in Section 4 (Hydrogen Fueling Needs Assessment & Costs). However, 30% of long-haul trucking VMT in Oregon comes from out-of-state. Thus, if interest in the use of hydrogen for long-haul trucking continues to grow in California, a coordinated multi-state approach to develop such a hydrogen fueling corridor might be pursued. Such an approach would create a backbone of large-capacity commercial stations that would mitigate concerns by fleets about whether there will be places to refuel if they are to adopt fuel cell electric trucks. These larger-capacity heavy-duty stations also create predictable demand for hydrogen production, which can be leveraged and ramped up to also supply second-generation light-duty vehicle stations.

## Hydrogen and the Grid

If full decarbonization of the economy is required, hydrogen will almost certainly play an important role given its broad availability, transportability, long-duration energy storage capability, and its various production pathways, many of which result in low or zero emissions. This is especially true as calls increase for a net-zero grid, driving the use of intermittent renewables (e.g., wind and solar) that will require multi-day and seasonal storage to ensure a reliable supply of power and a resilient grid. Any large-scale production of hydrogen serving the grid will drive economies of scale that will benefit the economics of operating hydrogen FCEVs. In Oregon, as discussed in Section 1 (Hydrogen Activity Landscape), the Eugene Water & Electric Board is partnering with Northwest Natural and the Bonneville Environmental Foundation to explore the development of a large, 2-10 MW renewable hydrogen production facility that will support the decarbonization of the region's space heating. Projects such as these are likely to also benefit the transportation sector.

## Low or Net-Zero Carbon Hydrogen Production

Low carbon intensity hydrogen production is critical. As electrolyzer costs continue to decline, zero-carbon hydrogen production costs could fall below the critical \$2 per kilogram target before 2030, according to a recent RMI analysis (RMI, 2021). The U.S. DOE is targeting even more aggressive cost reductions in its *Hydrogen Energy Earthshot* program (United States Department of Energy, 2021), which aims to reduce the cost of clean hydrogen (using net-zero carbon production pathways) to achieve \$1 per 1 kilogram in 1 decade ("1 1 1"). With the passage of HB 2021 in Oregon in June 2021, retail electricity providers (Portland General Electric, Pacific Power) are required to reduce greenhouse gas emissions associated with electricity sold to consumers to 80 percent below baseline emissions levels by 2030, 90 percent below baseline emissions levels by 2035 and 100 percent below baseline emissions levels by 2040. The bill also bans expansion or new construction of power plants that burn natural gas or other fossil fuels. Oregon may find value in reviewing these targets with stakeholders across the state and considering the adoption of equivalent low-carbon targets for hydrogen production, especially considering that any new hydrogen production assets built today will likely be operating for decades. Importantly, there is broad stakeholder support in Oregon for the use of renewables to produce hydrogen. As noted in Section 1 (Hydrogen Activity Landscape), there are multiple ongoing efforts to study, pursue and develop renewable hydrogen in Oregon (ODOE, EWEB/NW Natural/Bonneville Environmental Foundation, Avangrid, and Poet/NW Natural). As of this writing, the authors are not aware of any efforts in Oregon to develop or expand hydrogen production using conventional fossil fuel pathways, with or without carbon sequestration.<sup>7</sup>

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<sup>7</sup> For more information about the carbon emissions associated with the production of hydrogen, refer to the ongoing work of the International Partnership for Hydrogen and Fuel Cells in the Economy (IPHE), which aims to "facilitate the market valuation and international trade in 'clean' hydrogen by outlining a common approach established through collaborative work by several countries" (International Partnership for Hydrogen and Fuel Cells in the Economy, 2021).

## Section 6: Recommendations

Existing battery electric vehicle technology can tackle the operational needs of most on-road transportation, enabling significant progress toward zero-emission climate goals. But to achieve 100% zero-emissions across all vehicle sectors, particularly in the most challenging on-road use cases, hydrogen and fuel cells offer key operational advantages, including a longer driving range, shorter refueling times (on par with gasoline), several low and no-carbon production pathways and extended storage capabilities. (Fuel Cell & Hydrogen Energy Associates, Undated). These attributes may also result in hydrogen addressing electricity sector challenges, which can be a catalyst for the use of hydrogen in transportation.

It is currently unclear how quickly a hydrogen market for transportation will develop in Oregon. However, recognizing the critical role hydrogen may play in fully decarbonizing the transportation sector, there are many steps Oregon can take to develop the market for hydrogen and FCEVs. Of critical importance is engagement in the broader hydrogen community, not only to stay abreast of developments but also to ensure a thriving, cost-competitive hydrogen market. These efforts will enable Oregon to better prepare for FCEVs and more accurately anticipate the support the industry will need.

A phased approach of strategic actions over the near-, mid- and long-term is recommended to prepare for the arrival of hydrogen-fueled electric vehicles in Oregon. The phased recommendations can be accelerated to better serve the state's interests or to address market needs. To keep pace with progress in the market, it is critical to watch for leading indicators that help inform decision-makers about whether the market is developing more or less quickly than anticipated. The following section describes both the recommended next steps and the leading indicators that warrant regular monitoring.

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*Click on any of the text below to go to that section or simply scroll through the following pages.*

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### **Near-Term (2022-2023)**

**Near-Term Recommendations**

**Near-Term Leading Indicators**

### **Mid-Term (2024-2027)**

**Mid-Term Recommendations**

**Mid-Term Leading Indicators**

### **Long-Term (2028-2035)**

**Long-Term Recommendations**

**Long-Term Leading Indicators**

## Near-Term (2022-2023)

### Near-Term Recommendations

**1 Assess hydrogen market regularly and coordinate hydrogen interests** – As hydrogen interests and deployments grow both globally and in California, assess the state of the market in Oregon and evaluate the leading indicators at no more than 2-year intervals. A periodic analysis of the progress and projected future development of hydrogen use across the light-duty, trucking, and transit sectors will ensure Oregon keeps pace with the potentially fast-evolving fuel cell vehicle market. In addition, track public and private fleets and use cases in Oregon that may increasingly seek hydrogen fuel cell solutions (e.g., 24/7 out-and-back trucking delivery services, long-haul trucking, and transit fleets with longer-range bus routes). To better understand and coordinate hydrogen interests, the Oregon Department of Transportation may consider soliciting industry inputs through a Request for Information (RFI) and/or through convening industry stakeholders to identify potential hydrogen market participants and needs. This includes an increased understanding of projected FCEV volumes, timelines, targeted sectors, fleet commitments, public vs. private fueling needs, station network plans, and regional hydrogen production capacity development efforts.

**2 Engage with regional stakeholders** – participate in hydrogen discussions with regional stakeholders, such as those in California, Washington, and British Columbia, to better plan and anticipate how regional activities may impact Oregon. Important groups include the California Air Resources Board, the California Energy Commission, the Washington Department of Transportation, the California Fuel Cell Partnership, Hydrogen BC, the Western States Hydrogen Alliance, and the Renewable Hydrogen Alliance, among others.

**3 Support industry-led technology demonstrations and pilot projects** – Some examples include:

- **FCEV and hydrogen fueling demonstrations** – support and encourage in-state actors developing demonstration projects. This might include the ongoing interests and efforts of TriMet. Look for demonstrations that reflect the entirety of the hydrogen ecosystem, from hydrogen production to delivery, storage and

dispensing at public or private hydrogen stations and fleet utilization ranging from ports to commercial trucks, buses and private vehicles.

- **Hydrogen production** – support and encourage pilot projects that demonstrate low and zero-emission hydrogen production pathways, particularly those focused on improving the economics. This includes the efforts of EWEB, Northwest Natural, POET, Avangrid, and others who have formed collaborative teams to pursue renewable hydrogen production projects.

**4 Support policies enabling FCEVs and local, low or zero-carbon hydrogen production** – continue to ensure that hydrogen fuel cell vehicles are eligible in all zero-emission technology related legislation (e.g., goals and fleet acquisition requirements). Policies might also target low or zero-carbon hydrogen locally produced, as long-distance transport adds inefficiencies and cost.

**5 Ensure statewide regulations and processes enable FCEVs and hydrogen fueling infrastructure siting** – Some examples might include:

- Confirmation that hydrogen can be used as a transportation fuel in Oregon, without any restrictions relative to transport through tunnels, bridges, or ferries
- Verification that there is a transparent and streamlined permitting process for hydrogen fueling stations as well as for fuel cell vehicle maintenance bay conversions
- Confirmation that existing MDV/HDV length or weight restrictions do not preclude or hamper hydrogen FCEV adoption



## Near-Term Leading Indicators

Oregon should regularly evaluate market indicators to determine if the FCEV industry is evolving more quickly or slowly than anticipated.

- **Commercial fleet activity** – look for increasing hydrogen interest, particularly across fleet operators in the transit bus and the medium- and heavy-duty sectors, including captive fleets with return-to-depot logistics and long-haul trucking fleets. TriMet has signaled interest by completing a hydrogen feasibility study for its fleet. In addition, watch major national fleets operating long-haul trucks such as Amazon, FedEx and Pepsico.
- **Original Equipment Manufacturer (OEM) activity** – look for auto and truck makers to signal interest in expanding FCEV production capacity, combined with an interest in offering these vehicles to markets outside California. Pay special attention to OEM manufacturers Cummins, Daimler, Hyundai, Hyzon, Kenworth, Nikola, and Toyota.
- **Federal policy** – look for major DOE or DOT funding commitments or opportunities targeting hydrogen fueling station investments outside California, including funding to build out the designated FHWA Alternative Fuels Corridors in Oregon. It is noteworthy that the U.S. DOE awarded \$110 million through the Supertruck 3 program to four truck manufacturers for the development of Class 4-8 FCEV trucks. Also look for any indication of strict net-zero or heavy-duty emission standards.
- **California** – watch for investment commitments for highway corridor fueling stations, including investments for the heavy-duty long-haul trucking sector that would enable cross-state travel and might encourage interstate travel. As mentioned in Section 5 (Special Considerations for Oregon), 30% of Oregon’s long-haul trucking highway vehicle miles traveled (VMT) originates out of state.

## Mid-Term (2024-2027)

### Mid-Term Recommendations

- 1 Establish a statewide hydrogen planning effort** – Based on the statewide market assessment and regional stakeholder engagement during the previous phase, consider establishing a more formal hydrogen planning group that includes stakeholders across the state. The CaFCP has organized such an organization that includes key public and private actors across the hydrogen landscape. A meaningful first step might be to align Oregon’s interests with this large and existing stakeholder group.
- 2 Fleet coordination** – coordinate with Oregon’s public and private fleets to understand battery vehicle technology and fuel cell vehicle technology needs and challenges to achieve a 100% zero-emission fleet. Regional corridor coordination - discuss opportunities with California, Washington, and British Columbia stakeholders to collaborate on one or more regional hydrogen fueling corridors to support light-, medium- and heavy-duty vehicle interstate travel and fueling.
- 3 Develop and invest in pilot projects** – encourage low and zero-emission hydrogen production projects, fueling station deployments, and fleet demonstrations. Ensure the investment in fueling infrastructure is tightly connected to FCEV demand. Focus on projects that encourage large-scale hydrogen production and high station utilization to drive economies of scale. Consider the following vehicle and fueling pilot examples:
  - **Light-duty Vehicles** – provided OEMs have signaled the availability of FCEVs, develop a market-centric pilot project with stations concentrated in a few urban areas and a large-capacity highway corridor station enabling intercity travel between several urban markets. (Note: this market-oriented approach, as deployed in California and discussed earlier, results in a different investment strategy than the state target-driven modeling conducted in this study where highway corridor stations precede urban stations.)

- **Medium and heavy-duty Trucking** – a project could be developed combining OEMs, fleet operators, and station providers in an ecosystem that enables goods movement throughout a select region, leveraging the fleets as anchor tenants for the fueling station(s). For example, one such project might involve the Port of Portland (PDX) and manufacturing or warehousing centers.
- **Heavy-duty Long-haul Trucking** – Consider a highway corridor project that introduces fueling stations and select fleets delivering goods along a major highway corridor, ideally coordinated with California.
- **Transit** – Consider a project to demonstrate the feasibility of transitioning transit buses with longer travel routes to hydrogen FCEVs and build the supporting depot fueling station(s).



## Mid-Term Leading Indicators

Oregon should regularly evaluate market indicators to determine if the FCEV industry is evolving more quickly or slowly than anticipated.

- 4 Target-setting** – coordinate with stakeholders across the state and consider establishing targets that would drive confidence in both the supply and demand for low and zero-emission hydrogen production, vehicle availability, and vehicle fleet acquisition.
- 5 Electrofuel tariff** – review Tacoma Power’s unique electrofuel tariff pilot and consider implementing a similar pilot of this rate design across select Oregon utilities where it is determined to be feasible (Tacoma Public Utilities, 2021). Recognizing that some of the rationale for regulator approval of this rate may be due to unique characteristics of Tacoma Power (generation sources, economic development justification), it is worth understanding this rate design for applicability elsewhere.
- 6 Pursue federal funding opportunities for hydrogen infrastructure** – building on the work completed in previous years, consider submitting a funding proposal to the U.S. DOE or DOT (e.g. under the IIJA’s competitive grant program) for hydrogen fueling infrastructure. Consider developing a project concept, building support (including regional support) and identifying partners for a project that might propose the buildout of one to five hydrogen fueling stations on I-5 in Oregon, which is a designated hydrogen corridor under the FHWA’s Alternative Fuel Program.

- **Commercial fleet activity** – look for either hydrogen FCEV purchase announcements or commitments across major fleet operators or partnering announcements with fueling providers (e.g., FirstElement Fuel). These signals can communicate a growing confidence in hydrogen FCEV technology (and demand certainty for OEMs) and the associated need to secure fueling solutions.
- **OEM activity** – continue to look for automakers and truck makers to signal their intent to expand FCEV production and to offer these vehicles to markets outside California.
- **Federal policy** – continue to look for any major DOE or DOT funding commitments or opportunities targeting hydrogen fueling station investments outside California. Also look for any indication of strict net-zero or heavy-duty emission standards.
- **California** – look for the development of a hydrogen highway fueling corridor for long-haul trucking that could relatively quickly result in increased demand for hydrogen fueling across Oregon’s connecting highway corridors (e.g., I-5).
- **Hydrogen production** – look for signs that hydrogen production is ramping up, particularly low and zero-emission hydrogen. Look also for utility engagement and any indication that utilities are planning to use hydrogen as a grid storage solution. As a significant portion of the economics of operating hydrogen FCEVs depends on the cost of hydrogen production, track any achievements or announcements relative to these evolving economics.

## Long-Term (2028-2035)

### Long-Term Recommendations

**1 Statewide hydrogen planning effort** – continue to leverage this coalition to track hydrogen plans and needs across fleets, vehicle manufacturers, station providers and hydrogen producers.

**2 Regional coordination** – continue to work with California, Washington, and British Columbia stakeholders to build the requisite West Coast hydrogen fueling corridors that support the needs of the statewide hydrogen planning effort and allow regional interstate travel.

**3 Transition from pilot projects to scale** – based on the mid-term outcomes and those mobility sectors moving most quickly to hydrogen FCEV solutions, establish phased plans to invest public/private funds in large-scale solutions that deliver low and zero-emission hydrogen production, high-capacity fueling station deployments and large FCEV fleet deployments. Ensure the investment in fueling infrastructure is tightly connected to FCEV demand. Use a whole-system approach that considers multi-modal fueling (public LDV, local/commercial MDV goods movement, long-haul HDV) and high station utilization to help drive economies of scale and future-proofing to ensure reliability.

**4 Consumer and fleet awareness** – depending on the leading light-, medium- and heavy-duty vehicle indicators observed in the previous phase, consider establishing an education and outreach program to increase consumer and fleet operator awareness of hydrogen as a transportation fuel.



### Long-Term Leading Indicators

Oregon should regularly evaluate market indicators to determine if the FCEV industry is evolving more quickly or slowly than anticipated.

- **Commercial fleet activity** – look for scale in fleet announcements. Determine if a pattern is developing for the use of hydrogen FCEVs across different sectors (e.g. LDVs, ports, food & beverage, long-haul trucking, transit). Discern whether these transitions are occurring only in California or whether fleets plan to adopt FCEVs in all geographies. Look for patterns in the use of private depot vs. public fueling stations.
- **Fueling providers** – look for major fueling station network announcements and investments. Determine whether these investments are growing outside California. Determine if major fueling/fleet/OEM partnerships are evolving.
- **OEM activity** – continue to look for automakers across the LDV sector and truck makers across the MDV and HDV sectors to signal their intent to expand FCEV production and to offer these vehicles to markets outside California.
- **Federal policy** – Look for signs that the federal government is showing increasing leadership in supporting the development of a hydrogen economy, including investments beyond research, a national hydrogen fueling station network, support for FCEVs in transit, renewable hydrogen production and grid storage, or FCEV procurements by the GSA, including the military.

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**Oregon  
Department  
of Transportation**

**From:** [Mike Bryan](#)  
**To:** [2022 Levzhev \\* DEQ](#)  
**Subject:** Please stop making us California  
**Date:** Tuesday, September 6, 2022 6:42:52 PM

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Please stop making oregon like the sesspoll California, lighten up on the no gas cars. It's unreasonable and our grid can't support it, any reasonable person knows this, pull your head out of your ass now.

**From:** [mike meredith](#)  
**To:** [2022 Levzev \\* DEQ](#)  
**Subject:** DEQ considering EV mandate 2035  
**Date:** Saturday, September 3, 2022 4:44:45 PM

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I am opposed to any of this. It does not make economic sense, interferes with the free market, is impractical for many Oregonians (forestry work, farming). Let the market dictate when these major shifts occur. Mike Meredith, Medford

**From:** [Milt Moran](#)  
**To:** [2022 Levzhev \\* DEQ](#)  
**Subject:** Electric Vehicles by 2035  
**Date:** Tuesday, September 6, 2022 7:38:48 AM

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I strongly oppose that only Hybrid or all All Electric Vehicles and No Gas or Diesel Powered vehicles be sold in Oregon starting in 2035.

The power grid will be overwhelmed and unable to service that many vehicles, while maintaining power for homes and industries. Our newer gas and diesel powered vehicles are much more efficient and are engineered to be much less pollutant.

Oregon is a carbon neutral state. Our forests absorb Carbon and store it. Our forests flourish due to these atmospheric carbons. Our wood buildings store that carbon for many years.

Just because California decides to make the irrational decisions to eliminate gas and diesel powered vehicles, Oregon should not be following these poor ideas and poorly thought out mandates.

Thank You

Milton I. Moran Jr.

***Milt Moran***

President  
Cascade Timber Consulting, Inc.  
Sweet Home, Oregon

**From:** [My Do-Kruse](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Opposition to Advanced Clean Cars Rule II  
**Date:** Monday, September 5, 2022 9:42:38 AM

---

Hello,

As a resident of Oregon, I am writing to voice my opposition to the Advanced Clean Cars Rule II. This bad legislation. It is clear that the country will not have the infrastructure by 2035 to support such a rule as California officials have asked electric vehicle owners not to charge their cars during certain hours during the current California heat wave. We should have the option to purchase gas-powered or electric or hybrid vehicles. Electric vehicles are very expensive and are out of reach for purchase by many. This rule will impact the low income disproportionately. This is economic injustice! Also, the manufacture of the components of electric vehicles is far from environmentally friendly so the rule does not even satisfy any green goals.

Sincerely,

My Do-Kruse

**From:** [Nathan Guthrie](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Electric vehicle mandate comments  
**Date:** Saturday, September 3, 2022 5:47:31 PM

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Hi,

I've recently learned that Oregon is considering a similar electric vehicle mandate to California (100% ev by 2035). As an Oregon resident, I have a few concerns about this.

1. Can our electrical generation capacity keep up with the massive increase in grid demand? What are the secondary and tertiary effects on energy usage? Will we also follow California into rolling blackouts?
2. EVs are expensive to purchase and maintain, and this will unduly burden those families with more modest incomes. Any rebates and incentives will largely go to higher income residents.
3. Most EV owners charge their cars overnight, at home. The additional charging infrastructure is expensive (see comment number 2). Can our electrical grid handle this peak load? Is this going to lead to energy rationing?
4. How will this effect people's ability to easily move around the state and beyond? Even fast charge stations take much longer to fill up versus a gasoline or diesel car, and the range is very limited.
5. Please take into account the environmental destruction caused by lithium and cobalt mining. With these kinds of mandates, we could be making things much worse.
6. Why cede even part of our state's sovereignty to a bureaucracy in California? Oregon's needs are very different from California, and we should make our decisions independently.

Respectfully,

Nathan Guthrie  
Albany, OR



**From:** [NICK DOYLE](#)  
**To:** [2022 Levzev \\* DEQ](#)  
**Subject:** Internal combustion engines  
**Date:** Tuesday, September 6, 2022 10:25:54 PM

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Stop trying to mandate the entire state to your whims. Buying a new car is way less environmentally friendly Than continuing to keep your old car running. People can't afford to buy these new cars either. PISS OFF!

**From:** [Oscar Hult](#)  
**To:** [2022 Levzhev \\* DEQ](#)  
**Subject:** Internal combustion engine ban  
**Date:** Tuesday, September 6, 2022 7:45:19 PM

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I am wholeheartedly against the idea of any ban on gas powered cars and trucks. The technology is not available to make vehicles that will perform the tasks need to keep our economy robust.

The environmental hazards of battery powered vehicles is another aspect of this idea that has not been taken into account. The lithium mining and problem of disposal of spent batteries is a greater environmental risk than continued use of gas and diesel powered vehicles. I look forward to seeing that this nonsensical idea is put to rest.

Oscar B. Hult

Albany, OR 97321

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Oscar B. Hult  
Haberdasher  
The Natty Dresser

Albany, OR 97321

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**From:** [Pam W](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Advanced Clean Cars II  
**Date:** Saturday, September 3, 2022 12:32:30 PM

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This is unacceptable. By the time you get a few more thousand cars on the road our electrical grid will not hold up and many people will be without electricity for days. We see how your windmills and solar are taking a toll on our environment. OUR environment that you seem to be so concerned with but do nothing to prove otherwise. This is only a disaster waiting to happen. We have an endless supply of oil on our lands and it is NOT what is damaging our air quality or planet. Losing many forests is NOT helping because trees absorb Co2. And the fact that the batteries in electric cars destroy much of the land. They are destructive to our environment when you have to dig for the lithium and when they are put back into the environment when they are no good anymore. I will never buy an electric car. They are worthless for long distance driving having to stop to charge them for hours at a time. It is not worth it. It is actually insane.

This just proves to many of us of the intelligence behind all this is not there. We can send people to the moon and ships to mars but we can not figure out a better way to have a safe, practical way for our own transportation here on earth. I know for a fact there are others that have proved other responsible ways for us. But for some reason, you want to make it harder on all of us. Because it will. Please do not pass this absurd bill without the people's choice of it.

I appreciate your time.  
Thank you.

Pam Wadsworth.

**From:** [Pam Fields](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Statement against proposed rule to ban combustion engines  
**Date:** Wednesday, September 7, 2022 9:08:08 AM

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*I am writing to provide public comment against the proposed rule to ban internal combustion engine powered vehicles in Oregon. I strongly disagree with a mandated transition of all new light-duty vehicle sales in Oregon to zero-emission by 2035, including any updates to the LEV program rules proposed that would duplicate California's current light duty vehicle emission standards (which we have already seen to be doomed to failure in recent days) .*

*There are a number of issues that exist with the transition to electric vehicles (EV's), including the lifespan of the batteries, the lack of a reliable replacement electrical generation source as coal plants continue be taken off-line, and the environmental impact that wind turbines and solar panels have long term that are yet to be realized. Other obvious drawbacks include the time, cost, range, and overall performance of EV's.*

*EV's require batteries that come at extreme costs, deteriorate to the point of uselessness (after less than 10 yrs.), take hours to recharge, and are by all rights, an environmental nightmare in every aspect. The ability to find parking for charging is already a problem within the cities; imagine looking for a charging station every night, particularly in the countryside!*

*Our current combustion type engines allow the driver to move from point A to B fairly effortlessly, without planning, unsupervised, and at any time they wish by simply filling up their tank every 300+ miles. Whereas, EV's require meticulous trip planning in terms of charging station availability and the need to wait for a "go" from the operators of those stations. The driver is grounded forever while the energy "drips" slowly into the battery pack. EV's also allow corporations and authorities to easily monitor your movements and potentially interfere with your travels, illegally (under the 4th Amendment) and without due process! This alone is of great concern during this time of an extremely politically infused environment surrounding all Americans.*

*The number one reason I, and many Oregonians, stand against any mandates on use of EV's is that they are expensive. Expensive to buy, expensive to maintain, and expensive to replace. If mandated, EV's will be completely out of reach for most people!*

*Sincerely,*

*Pamela Fields*

*Albany, OR 97322*

**From:** [pat siress](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Proposed Electric Vehicle Mandate  
**Date:** Saturday, September 3, 2022 5:46:14 PM

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I strongly OPPOSE any state law that interferes with the free market.

Capitalism is a wondrous form of enterprise that allows citizens to choose what is best for them as individuals, families, and businesses. Once the electric vehicle becomes affordable for poor to middle class citizens folks will freely choose to invest in an electric vehicle. Government maintains never work.

What will be the cost to install charging stations?

How does this affect Oregon's rural community?

What will be the penalty for keeping a gas fueled vehicle?

Will diesel still be sold for motorhomes?

How many gas stations will be put out of work?

The batteries for these cars are very expensive, and dangerous to dispose of. How will they be disposed?

Will visitors from other states be "allowed" to drive on Oregon roads?

How will truckers deliver between California, Oregon, and Washington without fuel stops? It will certainly not be efficient to have electric semis.

Sincerely,  
Pat Siress

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Sent from Pat's Gmail account.

**From:** [Patti Wroblewski](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** EV CARS  
**Date:** Monday, September 5, 2022 8:23:02 AM

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I am totally, 100% against banning gasoline cars.

Today in Ca the citizens have been ordered to use no electricity. Could the burden of a majority of private passenger vehicles, buses & other commuter transportations cause a power emergency here. It totally could in my opinion.

Never say never.

Let's look at Portland's other great idea, following other cities examples - defund the police. And how did that turn out?

We need a balance of energy & transportation choices. Oregon needs to keep all our options open, we never know what the future may bring. Besides, we all know many Oregonians will always jump on the latest thing voluntarily. That's what we do.

Patti

Forgive mistakes and autocorrects. Sent from my phone.

**From:** [Paul Heberling](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Cc:** [Bill Hoyt](#)  
**Subject:** Advanced Clean Cars Rule some knee jerk thoughts  
**Date:** Wednesday, September 7, 2022 7:42:44 AM

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Folks,

During a local agricultural group monthly meeting last night we heard a little bit about some proposal to develop a bill here in Oregon to require all electric cars/trucks/ vehicles by the year 2035.

And that today was the deadline for public response on the concept....seems I must have missed how this thought shadowing a California initiative was made public to folks and how the timeline itself fits the public notice criteria etc.

I have not reviewed who all is sitting at the committee level , providing comment and how they may be notifying constituents about the potential bill. Here is just some of my knee jerk thoughts to try and wedge in a little before public comment timeline sunsets.

With increased demand on the current electric grid it looks like California is going to have to have some increase in infrastructure to even meet todays demand let alone have billions of vehicles sucking electrons in the future.

What are the limitations of the proposed rule? What vehicles are you talking about? Many agricultural operations like trucks to haul heavy trailers require a lot of horsepower and may have to travel some distance with loads and having to stop and recharge, etc. will certainly cut into expenses etc. Some folks, like myself have purchased a fossil fuel truck and anticipate using it for many years that may exceed the 2035 deadline I heard about last night.

Imagine there was some thought about equipment that plants, harvests, etc. the food folks eat....not sure if stuff like combines and tractors would be regulated under this proposed bill? Again some of these large implements are purchased as a long term investment in operations.

As populations grow and place more demand on resources, someone needs to put the pencil to work on just how we get there and IMO the concept of going all electric has not been thought out regarding infrastructure needed.

Okay...enough knee jerking for this morning, somehow we need to have less demand on all our resources and IMO slowing the increase in the world population is the answer. From what little I have heard about this plan to convert to electric for our road vehicles and (possible planting and harvesting implements?) seems Ill advised.

Paul Heberling

**From:** [Penne Carter](#)  
**To:** [2022 Levzhev \\* DEQ](#)  
**Subject:** Banning gas cars by 2035  
**Date:** Tuesday, September 6, 2022 8:44:13 AM

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While I believe innovation and moving forward with technology to help our environment, I also believe that the use of electric vehicles is not the answer. In fact the facts have shown that it would be disastrous to our environment because the materials needed for batteries are in limited supply and would require much of the changing the face of our land. I believe while in its first look at electric cars seemed like an amazing solution but when dissected of costs to environment (including the disposal of batteries) and financial stability. It will cost us much more and the impact could actually reverse our goals of taking proper care of our land. It has shown that it will still require fossil fuels in the manufacturing and distributing of this product. Like many things, it will require a infrastructure to be in place to support this radical timeline. Mass transit, charging stations, the electrical grid, disposal land sites, environmental hazards, has not need able to support how the populations needs to commute, product or people. The technology has not progress enough to sustain itself and ensure safety, productivity and measureable advancement.

I would like to share a example

My daughter traveling with a newborn baby in the suburbs of a Midwest town, in the summer in an electric car needing to charge the car. Finding a charging station was a challenge in itself but also finding one where it was safe and not in areas where the city has left unattended with homelessness and drug use. When finding a station it required her to stand outside for over 30 minutes while charging because you can not run air conditioning while charging. And the use of air conditioning wore down the battery much to quickly. Now I remind you, she has a newborn baby and she is in an unprotected area waiting with the temps in the 90's with humidity, over 30 minutes. It shows so many examples of the infrastructure of this plan not thought through and solved.

The forcing of people to comply to unrealistic strategies without having done the work to solve some of the basic problems shows and sounds like a different goal is trying to be met. It is looking much like a race to an agenda that must have some financial incentive and has no backbone for real stability or reality. Oregon needs to be in the forefront of innovation that has real structure to support that innovation. We have a tendency to spend tax dollars on the enforcing and are years and years behind in the structure. (Words before action) Following in the footsteps of California should not be a goal when they are showing us the evidence that the very plan is already buckling from the load. We should learn what doesn't work and go back to the planning boards and try again on something different. Learn from mistakes and cut our losses on things that don't work.

If you want the trust of the people and want to be the forefront runners and continue to win in elections, be the people, who are for the people, and by the people who have put you there. Send out challenges to the people, to innovate these complex solutions with strategies that have real impact to environments (for we have amazing innovators) and stop being puppets to a unchallenged goal.

Thank you for giving this platform to raise a voice of concern.

Penne Carter

A concern Citizen

Sent from my iPhone



**From:** [Penny Miltenberger](#)  
**To:** [2022 Levzvez \\* DEQ](#)  
**Subject:** electric vehicles  
**Date:** Tuesday, September 6, 2022 4:27:32 PM

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I think it not wise to make the move towards more electric vehicles when we as a state are already facing some brown outs due to a lack in the power grid. We must maintain the fossil fuels if we are to keep the economy and the state operating. Fossil fuels are needed to manufacture the electric cars and by the time you figure the needs for that you are not saving the enviroment. What do you do with all the out moded windmills that no longer function and the batterries that are spent and the solar systems that no longer work? We are creating a big trash mess and how do you get rid of it?Fossil fuels are how we feed this country so efficiently--let's not return to the pioneer days.

Climate changes but humans have always adapted and my God is big enough to have known what He was doing. Try not to outsmart Him. Thanks for your time and consideration in the mater.

**From:** [Peter Wiese](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Electric vehicle mandates  
**Date:** Friday, September 2, 2022 9:18:02 PM

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This proposed regulation far exceeds the availability of infrastructure needed to implement it. The state of Oregon needs to get serious about developing the required infrastructure before going off half cocked mandating pie in the sky requirements that exceed their infrastructure necessities. Monumental disconnection from the real world. No!!!  
Sent from my iPhone

**From:** [Sweeneypreserves](#)  
**To:** [2022 Levzvez \\* DEQ](#)  
**Subject:** proposed ban on sale of new gas powered vehicles  
**Date:** Wednesday, September 7, 2022 3:56:47 PM

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Oregon Legislative Decision Makers,

This proposed ban is extremely alarming. As a small family farm operation, we oppose this potential rule. Electric vehicles have a very controversial battery manufacturing process. It is NOT a green solution if you take the time to look at how these batteries are manufactured, who is doing the labor (many of them children) and once spent these batteries DO NOT have a green process in which they can be discarded.

In addition to this, regular working people cannot afford these vehicles. It is a farce to claim these vehicles will be helping the earth. Stop this lunacy! We are NOT California, nor do we aspire to be. We are Oregonians who should use common sense, research and public debate to make decisions. We don't want laws that have the disastrous true costs both to the earth and to children that this kind rule will have.

Thank You,

Pieper Sweeney  
Yamhill County

**From:** [R Younger](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Electric cars  
**Date:** Tuesday, September 6, 2022 6:26:09 PM

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Hello,

Ive been told this is the email to submit comments to about oregon going all electric for cars. I think this is a terrible idea. If you look at California, they haven't even begun to have the majority of people switch to electric vehicles and they're already having massive blackouts for power. Currently oregon has been few charging stations. And if gas were eliminated all of the gas stations would become useless abandoned property as they would always be considered dirty. If you research electric vehicles, it takes 100,000 miles for an electric car to break even with a standard emotions engine. Bumping up the demand for lithium ion would cause more harm on the environment trying to keep up with demand. It would also have major impacts on the economy as gas industry try's to change while new companies come in causing loss of thousands of jobs and bankrupting companies that have tried to service their communities for generations.

thank you,

**From:** [Rachel Lytle](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Advanced Clean Cars II  
**Date:** Tuesday, September 6, 2022 10:45:51 AM

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I'm emailing to speak out against this policy you're trying to implement. This is something that should be sent to ballot, not decided in a rule making process. This is tyranny. You do not get to decide what's best for me and my family. Seems the only people who'll be able to drive after 2035 are rich people. How is everyone else going to afford to by EVs?? Especially after you destroy our economy with your ignorant policys?

Sincerely,

Rachel Lytle  
Concerned citizen

**From:** [Ralph M](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** All Electric Vehicles  
**Date:** Tuesday, September 6, 2022 4:03:32 PM

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It is obvious that all politicians and environmentalists and idiots are jumping on the bandwagon to go all electric.

It is also obvious that the switch has NOT been technically thought out as the battery power has to be built and generated by, guess what, NOT ELECTRICITY !!! There are fossil fuels and natural gas and coal plants that have to create the electricity in the first place. Electricity does NOT make itself, does it ? Solar alone cannot provide ALL this needed power. We do not have the capability to do that.

It is also an environmental disaster with all the mining that has to be done to obtain the minerals needed to build the batteries. I KNOW you have seen this data, and YOU are purposely shrouding it from the public who really doesn't understand all of this. There are, however, enough concerned citizens to make this sham come to light and if you manage to get this moronic bill passed, there are enough "real Americans" out here to repeal this mess...

You should all be ashamed to think you know it all, and are following in the footsteps of the idiots in California who are also going to have a rude surprise soon !

**Ralph Menweg**  
**KJ7FCA**



**VIKKI BREESE-IVERSON**  
**HOUSE REPUBLICAN LEADER**  
DISTRICT 55

September 6, 2022

Richard Whitman  
Director  
Department of Environmental Quality  
4026 Fairview Industrial Dr SE  
Salem, OR 97302

Director Whitman,

I am writing to request that you extend the public comment period for the Advanced Clean Cars II proposed rule by 90 days. This extension will give Oregonians more time to provide valuable and important comments on a proposed rule that potentially has sweeping impacts across the state.

During this interim session, my caucus colleagues and I have met with constituents and industry leaders and many are not aware of this significant proposed rule or the comment deadline. I believe it is critical that Oregonians and communities across the state be heard. Granting this requested comment period extension would provide them that opportunity.

Modeled after a regulation recently adopted by the state of California, Oregonians are already receiving media reports on the challenges the rule will have in our neighbor state. I strongly believe Oregon should move forward in a cautious, deliberative and transparent way to ensure our state and economy are not negatively impacted by advancing a rushed proposed rule.

Thank you for your time and attention to this matter. I look forward to a quick response to this time sensitive request.

Sincerely,

Vikki Breese-Iverson  
Republican Leader  
House District 55 State Representative

CC: Governor Kate Brown

**From:** [Rich Forrest](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Advanced Clean Cars II Rulemaking  
**Date:** Tuesday, August 30, 2022 1:50:06 PM

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I would advise you to think about more than just the point of use emissions when considering this rulemaking. While ICE vehicles do emit CO2, EVs aren't without their downsides.

A typical EV battery requires the processing of approximately 500,000 pounds of earth to obtain the minerals used in its construction. These minerals are often mined by slave labor including, disturbingly, many child slaves. For instance, 60% of the cobalt supply is mined in the Democratic Republic of Congo which uses at least 40,000 child laborers who are exposed to toxic chemicals. Many of the mines used for the minerals required to manufacture EV batteries are in disadvantaged countries where the locals are destroying their environment, all for the benefit of rich Americans who wouldn't tolerate such practices in our country.

The mandating of EVs will require an expansion of our already at-risk electricity supply. Photovoltaic panels not only occupy valuable parts of the environment, they also require the use of large amounts of minerals and toxic chemicals in their production. Wind turbines have recently been shown to have their own hazards in Oregon with PGEs falling apart towers at the Biglow Canyon farm and are also proven killers of large numbers of birds.

In summary, the increase of the number of EVs in Oregon will have a significant negative environmental impact that needs to be considered. The environmental repercussions will be offshored to disadvantaged populations in other countries. Please don't think that mandating EVs will be a decision without negative consequence.

Regards,  
Richard Forrest  
Shedd, Oregon



**From:** [Rick Roberts](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** elimination of gas vehicles  
**Date:** Tuesday, September 6, 2022 1:27:52 PM

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To Richard Whitman and the DEQ authorities responsible for considering a ban on vehicles that use gasoline by 2035,

I have recently become aware that you and Kate Brown would like to rid Oregon of gas powered vehicles even if that means disaster to businesses and especially farmers in Oregon. We (the people that pay taxes) should have a choice (vote) to oppose or support this policy change. Kate and her socialist appointees should not be making decisions on something as huge as this as it affects every Oregonian.

-Oregon is already a "green" state and the decrease in gas vehicles will make only a miniscule effect on anything to do with climate. (Certainly not enough to ruin our livelihoods)

-This ruling will cause increased electric grid usage that is unsustainable. This will cause brownouts and complete outages as well as increased electric utility bills. (Especially with Browns wanting to shut down more and more dams in Oregon that provide clean and safe electrical power)

-The cost of installation of charging stations and home charging stations, will be astronomical as well as the cost of buying an EV and God forbid you have to replace that Lithium battery that causes more pollution (and child labor) in the mining of those rare earth minerals than can be saved by the use of said vehicle.

-How much money will it take to require all new parking structures to be pre plumbed with conduit that can support re-charging at all parking spaces.

-How do you expect long haul truck drivers to deliver goods in a timely manner if they have to stop every 200 miles or so to recharge their battery for several hours.

-How do you expect farmers to run their tractors and trucks (necessary for production of their crop) Just the price of diesel and fertilizer, right now, is causing price increases, can you imagine when they can't get the crop in at all due to the high cost of EVs and not having charging stations on the large fields that they plow, fertilize and harvest. If they run out of "charge" during the short window that they have for harvest, instead of working through the night to get it done they would have to take long breaks while recharging their extremely expensive equipment, and then hope that they haven't missed that window.....

-So, the cost of the EV and the cost and time of charging (and pollution in producing the batteries) are much greater than a gas vehicle. the distance an EV can go on one charge is significantly less than a gas-powered vehicle can go on a fill up.

I see nothing positive by forcing people out of gas-powered vehicles and into electric powered vehicles. How will you maintain the roads once your gas tax has disappeared?

We have a right to decide our fate. Let us VOTE! We are still a republic (OF, FOR AND BY

THE PEOPLE) We are not a socialist state or country, at least not yet. Thank you for taking the time to read my opinion and I trust that you will see reason and common sense and not pass this legislation.  
Sincerely,

Richard G. Roberts

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“The problem with socialism is that you eventually run out of other people’s money.”  
Margaret Thatcher

"We fought, we dreamed, and the dream is still with us." Ronald Reagan (after losing the GOP nomination to Gerald Ford in 1976)

It cannot be emphasized too clearly and too often that this nation was founded, not by "religionists", but by *Christians*—not on religion, but on the *Gospel of Jesus Christ*. For this very reason, peoples of other faiths have been afforded asylum, prosperity, and freedom of worship here. Patrick Henry

“What country can preserve its liberties if their rulers are not warned from time to time that their people preserve their spirit of resistance?” Thomas Jefferson

**My favorite quote of Jefferson's is: "God who gave us life, gave us liberty. Can the liberties of a nation be thought secure when we have removed their only firm basis, a conviction in the minds of the people that these liberties are of the gift of God? That they are not to be violated but with his wrath? Indeed, I tremble for my country when I reflect that God is just: that his justice cannot sleep forever."**

**From:** [richard imrie](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Stupid ideas  
**Date:** Monday, September 5, 2022 3:40:48 PM

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Going electric in vehicles before there is infrastructure in place could only thought up by an empty mind. Maybe when a different group gets to be in power they might make laws to prevent people not to travel, set boundaries, tell you how many calories you can eat or just make Oregon join China as a new territory. YOU WILL LIVE BY THEIR RULES. People in power change. Free enterprise Works!

[Sent from Yahoo Mail on Android](#)

**From:** [richard.macy](mailto:richard.macy)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Cc:**  
**Subject:** Electric Vehicle Mandate  
**Date:** Monday, September 5, 2022 11:05:31 AM

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State of Oregon,

To follow California and Washington's EV mandate and schedule is a BIG Mistake for lots of reasons. The cost of the EVs is prohibitive, no infrastructure to support in rural areas as well as adequate power capacities. The false reasoning for moving away from fossil fuels, the use of natural resources and mining of lithium, ect for producing these vehicles, as well as disposing of potential waste are all reasons this idea needs further studies.

We are moving away from common sense and the well being of society by ignoring the reality of how this plan could play out.

**LET'S BE RESPONSIBLE AS WE MOVE AHEAD AND NOT REACT FROM OUR NEIGHBORS MAKING DECISIONS THAT WE WILL REGRET WITH TIME.**

Richard Macy  
Central Oregon farmer and resident for 69 years.

Sent from my T-Mobile 5G Device

**From:** [rick Moffitt](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Zero emission vehicle ruling  
**Date:** Tuesday, September 6, 2022 3:51:27 PM

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I oppose any ruling limiting my freedom of choice in vehicles, life, liberty and the pursuit of happiness.

**From:** [Rivers Marshall](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Gas car ban  
**Date:** Tuesday, September 6, 2022 3:36:35 PM

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To whom it may concern:

I am writing to you today to voice my opposition to any regulation that would ban the sale of gas and diesel powered vehicles.

It would be extremely irresponsible to pass a law restricting the sale of petroleum powered vehicles for the following reasons:

1. The electric utility infrastructure does not currently exist to meet the increased demand that would be created by all Oregonians driving electric vehicles.
2. In the event of major natural disasters such as fires and earthquakes, electric vehicles are completely useless.
3. This would unfairly impact rural communities. The technology of battery capacity does not exist to meet the needs of those who live in remote areas for either distance or load capacity.
4. The vast majority of Oregonians care deeply for our environment and can be trusted to make their own decisions about what vehicles they need.

Thanks for taking the time to review this comment.

Rivers Marshall  
Albany Oregon

**From:** [Rob Freres](#)  
**To:** [2022 Levzhev \\* DEQ](#)  
**Subject:** public comment  
**Date:** Wednesday, September 7, 2022 3:14:42 PM

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Freres companies oppose the DEQ adoption of California rules banning the sale of nonelectric cars. Look at the blackouts coming to Cal this weekend and beyond. Its premature to pass rules which can't be met. Our infrastructure can't handle the increased load. Live in the environment we have not the one that is aspirational and nonsensical. Rob Freres, President

Sent from [Mail](#) for Windows

**From:** [Rob Levy](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Banning ICE vehicles  
**Date:** Sunday, September 4, 2022 8:21:50 AM

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Hi, I'll like to submit my comments in favor, and here is why.

I was an early adopter of electric cars with a Chevy Volt in 2012, and moved up to a Tesla Model 3 long range in early 2018. The change in technology and "normalization" in just those few years is amazing, and I am still driving the model 3 as a daily driver as I type this comment and plan to for a long time. I can drive from my home in Portland to Eugene and back without charging, or if I prefer stop at any of 4 Tesla super chargers (soon to be open to the public) on the way there or back, not counting all the other charging outlets also available. The maintenance on the car has been, well zero because unlike an ICE (internal combustion engine) vehicle there is only one moving part, vs about 900. Also one pedal driving allows you to rarely need to apply the brakes, so there has been a massive savings on service. In fact as I write this my other vehicle is in for a two year old service and it will be \$800. I also have a time of use power plan from Portland General Electric and my car charges itself nightly between 9pm and 7am at about 7 cents per kilowatt hour, so it's extremely inexpensive to drive as a daily driver. Of note, I have been a realtor for 33+ years and drive all over metro Portland, every day. The cost of electric vehicles is rapidly coming down too, in fact even without available state and Federal tax incentives the new Chevy Bolt is extremely affordable and capable vehicle, and there will be many more.

What I am trying to say is electric vehicles have come so far in just the last 10 years I can't imagine where they will be 2035, and I see no reason most everyone can't drive one starting in 2035, with one caveat. And that is we need to largely increase the available charging stations, especially in rural Oregon for people to be able to reliably make long distance drives. It's also important to remember most of us drive locally, and charging at home is what I do 99+ percent of the time.

Thanks for considering my comments. Rob Levy

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Sent from my iPad so excuse the mistakes & brevity please!



**From:** [Rob Taylor](#)  
**To:** [2022 Levvzev \\* DEQ](#); [SAKATA Rachel \\* DEQ](#)  
**Subject:** Advanced Clean Cars II  
**Date:** Wednesday, September 7, 2022 3:21:06 PM

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## Advanced Clean Cars II

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No to th Advance Clean Cars II rule by the DEQ.

America is about choice and people should be able to choose what type of vehicle they want to drive. It should not be up to the heavy hand of government to make that decision.

The Advance Clean Cars II rule is too extreme and too expensive. It will put Oregonians at risk due to the lack of available electricity caused by the use of EVs.

[Department of Environmental Quality : Advanced Clean Cars II : Rulemaking at DEQ : State of Oregon](#)

### [Advanced Clean Cars II : Rulemaking at DEQ - Oregon](#)

This rulemaking is central to DEQ's efforts to reduce air pollution and transportation-related greenhouse gas emissions. Oregon currently implements a Low Emission Vehicle/Zero Emission Vehicle program that requires manufacturers to deliver to Oregon a certain percentage of zero emission vehicles through the 2025 model year.

[www.oregon.gov](http://www.oregon.gov)

***Sincerely, Rob Taylor***  
***Bandon, OR 97411***

**From:** [Robert Dodge](#)  
**To:** [2022 Levzhev \\* DEQ](#)  
**Date:** Monday, September 5, 2022 8:59:17 AM

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You can't be serious about this! The power grid already struggles to keep up as it is. And how do you expect everyone to be able to afford these new cars, when we can barely make ends meet already. I and many other do not want this forced on us. I will definitely not be buying an electric car. The mining of lithium for batteries is far worse than oil fields. You can't even recycle a lithium battery.

**From:** [robyn wheatley](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Advanced Clean Cars II  
**Date:** Monday, September 5, 2022 8:51:48 AM

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Hello,

I am against this new rule. It will hurt Oregonians in the pocketbook, while not helping the environment in Oregon. Rules should have noticeable benefit to all. This rule has none and will cause harm to Oregonians.

Thank you,

Robyn Wheatley

Sent from my iPhone

**From:** [Roger Pearce](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** vehicle ban  
**Date:** Tuesday, September 6, 2022 3:12:36 PM

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I am firmly opposed to Oregon blindly following California in allowing only the sales of electric (or hydrogen) vehicles to the citizens of this state. Oregon is not California and setting such an arbitrary deadline without guaranteeing the necessary infrastructure to service those vehicles is beyond absurd. Where will we get the electricity? How much is that going to raise our electric rates? What will it do to fuel prices for those gas and diesel vehicles that remain? Will there be more regulations that punish those owners? Many people cannot afford a new vehicle of any kind, and punishing them for keeping their old ones is simply not right. We cannot be making rules that favor the wealthy over those less fortunate. Pushing laws and regulations down our throats is not the way to combat global warming. Having sensible conversations between the public and government is a start, but only if the public believes it can trust government. With all the stories of corrupt public officials, and knowing those are only the tip of the iceberg, that trust seems a long way off.

Roger Pearce  
Maupin, OR

**From:** [Bernice Hjort](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Proposed rules for Electric Vehicles  
**Date:** Saturday, September 3, 2022 4:48:56 PM

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While electric or hybrid vehicles may have their place using them in a farming or ranching operation is not practical. In many cases the infrastructure is not in place and may not be for sometime to come. In my opinion we are getting the cart before the horse. We should have the infrastructure in place first and then and only then move toward electric vehicle requirements. Also it will more expensive to purchase electric vehicles and maintain them (which is not talked about) and all this should be considered before moving to the California model.

Sincerely,

Ron Hjort  
Oakland, Oregon

**From:** [Ron Peterson](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Advance rules II  
**Date:** Saturday, September 3, 2022 12:53:31 PM

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Radical agendas like this turn livible spaces into desperation. As the Texas 2021 power crisis demonstrated. Oregon is NOT California and doesn't have the capacity to achieve the infrastructure necessary, with POSSIBLY the densely populated areas in the Willamette valley. Adoption is rejection of responsibility and engagement of fantasies and mental disorder.

**From:** [Ron Peterson](#)  
**To:** [2022 Levzhev \\* DEQ](#)  
**Subject:** Advance clean cars II  
**Date:** Sunday, September 4, 2022 5:55:23 PM

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As laudable as the target is, Oregon simply cannot afford it. California can, with 6x the population density and 20% higher PPP per capita. If you adopt the rules, the electorate will revoke the adoption by initiative, there will be political and personal repercussions. Ramming the adoption through over a major holiday weekend stinks and calls the integrity, honesty, and veracity of the system and its officials into abject repudiation.

**From:** [RON LEISA ZEGERS](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Cc:**  
**Subject:** Advanced Clean Cars II Proposal  
**Date:** Tuesday, September 6, 2022 4:26:38 PM

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To whom it concerns,

I would like to express my opinion regarding the Advanced Clean Car Act II, specifically the adoption of the timeline used in the California proposal in regards to the ban on fossil fuel vehicle sales by 2035. While I feel moving away from fossil fueled vehicles is a positive step we must take, I also feel the timeline is too aggressive and we would be better served by waiting until the infrastructure is farther along than its current state. I also feel the technology at this point isn't nearly advanced enough and once again feel patience is warranted to be sure that electric vehicles and other non-fossil fuel vehicles will be an asset and not a liability both for the environment and those whose financial position might be strained.

Please reconsider adopting this plan.

Thank you for your time and attention,

Ron Zegers

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**From:** [Rose Kaler](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Cc:** [Scott Davis](#)  
**Subject:** ban internal combustion engine powered vehicles in Oregon  
**Date:** Wednesday, September 7, 2022 7:03:56 AM

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Dear Whom it may concern,

I'm a fourth generation Oregonian and love my State.

I respectfully ask that you consider all the effects of the battery waste and the possible lack of reliable electrical generation sources. Will we be able to sustain all the power needed for these vehicles?? where will the used batteries go?

I'm concerned this will raise even more problems for Oregon like it is in California.

Thank you for your time,

Rose Kaler

**From:** [Ryan Hukill](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Advanced clean cars II proposed rule  
**Date:** Tuesday, September 6, 2022 10:17:06 AM

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Forcing these type of standards on the public will drive Oregon's economy into the ground. Oregon needs to stick with the free market. If something is truly going to work and work efficiently it will sell itself. Forcing this down the throats of Oregonians will only bankrupt Oregonians and Oregon. One of the worst pollutants for Oregon is the forest fires. If you want to take a look at controlling something quit managing the forest fires and put the fires out!

Ryan Hukill  
Hukill's Inc.  
Plumbing / Restoration/Drain Cleaning / Leak Detection  
Fort Worth TX. / Medford OR. / Bend OR.

**From:** [Ryan Young](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** rulemaking advisory committee  
**Date:** Tuesday, September 6, 2022 4:10:48 PM

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To whom this concerns,

I am very concerned that Oregon would even consider this as idea, I understand there are a lot of important decisions to be made to make this state better but this is not one of them. The electrical grid in California is having rolling black outs often. Instead of forcing this idea down our throat how about we get the electrical grid up to speed first. Plus let people choose to buy electric cars verse telling us what we can buy or not buy. I have a hybrid vehicle and a gas vehicle myself. We have a lot of resources for fossil fuel, let's keep using them. Plus we as a country have can not even manufacture new vehicles now due to chip manufacturers. It's just a bad idea

Please do not make this a new law.

Thank you

**From:** [Sarah Pierzchala](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Advanced Clean Cars II Proposal  
**Date:** Monday, September 5, 2022 9:40:17 AM

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Hello,

It has come to my attention that DEQ is attempting to follow California's lead and impose a ban on gas-powered light-duty vehicles in the state by 2035.

I will spare you the links to the numerous stats and studies, economic and scientific, clearly explaining why this is a very bad idea. I will only state in my own words that I believe such a move is unnecessary for Oregon.

One: It will cause great hardship for many people who cannot afford an EV.

Two: Gov. Newsom's recent request that California citizens **not** recharge their vehicles during the heat wave proves the grids on the West Coast cannot handle the numbers of vehicles in use now.

Three: Our citizens shouldn't be punished with the even higher electricity costs this proposal will inevitably lead to.

Four: The stated reason for this proposal, to protect the climate, is spurious at best, as there is no scientific evidence any benefit will be more than negligible.

This proposal is the first step on a very dangerous path, one that will make life here so onerous and impractical, that it will lead to many people leaving the state.

I strongly urge you, for the sake of average Oregonians, who are already struggling to meet their basic needs and pay their electric bills, to abandon this draconian proposal.

Sincerely,

Sarah Pierzchala

Milwaukie, OR 97222

<https://www.skirkpierzchala.com>

**From:** [Scott and Jenny Radmer](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Opposed to this  
**Date:** Wednesday, September 7, 2022 10:14:08 AM

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Where is our common sense? Look at California. They are asking people not to charge their cars or use power or expect black outs. You Can't want Oregon to be like California! We have been following them for way too long. Our state was a beautiful state and now look at the city's and more. Stop thinking California has the answers, they don't!

Our infrastructure is not prepared for this. People will die. You might think this is extreme but if you can't charge your car and have to get somewhere or get stuck somewhere or if we have black outs and people can't use their oxygen concentrated or air conditioning or heat in the winter, it could happen. You can't draw a line in the sand to make you feel good without fixing foreseen problems. Fix the Infrastructure first before even thinking about this.

Lastly, how are people supposed to afford these cars on fixed incomes? What are farmers supposed to do? What are rural Oregonians to do? Please remember to represent the whole state, not just those that live in a big city and don't drive very far. Stop thinking you're doing something good without looking out for the problems. Also, just because you don't see the damage to the earth from the mining of lithium and other battery components doesn't mean it's not there.

Please Stop this now! Fix the problems first before even thinking about this. Don't follow California down the rabbit hole of failure.

Thank you for your time, Scott Radmer. Lifetime Oregonian.

Get [Outlook for Android](#)

**From:** [Scott Thorsgard](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Electric Vehicle Mandate  
**Date:** Tuesday, September 6, 2022 10:35:08 AM

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Please stop this, as the list of negative impacts are endless. Such as ev cost, grid not substantial, rural people it don't work and not enough charging stations. But the biggest impact is people don't want government dictating to them!

Scott

**From:** [Scottie Barnes](#)  
**To:** [2022 Levzhev \\* DEQ](#)  
**Subject:** DEQ Rulemaking  
**Date:** Tuesday, September 6, 2022 11:14:05 AM

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Please do not advance the advanced clean car 2 initiative.

We're watching California's power grid implode. It can't support more ZEVs. Oregon's grid is not much better. We cannot supply enough electricity to charge electric vehicles.

This is an overreach even for Oregon government.

Say no. We're not ready.

Scottie Hendrickson

Sent from my iPhone

**From:** [Knopp Reagan](#)  
**To:** [2022 Levzhev \\* DEQ](#)  
**Subject:** DEQ considering California ban on Gas powered Vehicles by 2035  
**Date:** Tuesday, September 6, 2022 12:43:36 PM

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*Please see the comment from Senator Tim Knopp below.*

To DEQ;

My understanding is under Oregon's proposed rules, the state would follow California, instead of the federal clean air act, in requiring that by year 2035, any new light or medium duty vehicles would need to be 100% electric (either fully electric or hybrid.)

The state, but more specifically the executive branch, is also proposing to fund community-based organizations to purchase vehicles for ride sharing and car sharing programs.

DEQ should suspend all discussions and or action regarding rules to ban gas powered vehicles.

First, these proposed rules will substantially discriminate against middle and low income Oregonians and disproportionately discriminate against people of color.

I own a hybrid and for the privilege of purchasing my hybrid I paid at least 25% more than if I had purchased the equivalent gas only model. Most Oregonians aren't able to do that.

Just after adopting this additional rule the State of California asked Californians not to charge their electric vehicles because it would cause blackouts. Does Oregon really want to follow the "keystone cops" show in California?

This creates a perfect transition to my second concern. It's the grid! Their aren't even close to enough places to charge electric cars and I know of no plan short or long term to resolve this issue. I know because many times I can't find a place to plug in, much less a convenient place to do so.

The replacement power for fossil fuels cannot be accomplished with the current portfolio of renewables if even they are expanded. Wind and solar cannot bring Oregonians enough power to sustain adoption of the rules you are considering.

This decision should not be made by an executive branch agency. This is a decision that should be decided by the people or the peoples house and go through the public process and scrutiny it deserves.

Hard working Oregonians are already experiencing a recession and the rest of Oregon is going to join them shortly due to short sighted policy decisions on energy and economics made by Brown and Biden. Don't make this recession worse, for to do so would show callous disregard to Oregonians who are struggling to put food on the table, gas in their car and a roof over their heads.

If you choose to move forward please make sure you provide Oregonians with the due diligence



study's that show the cost of battery production and disposal for electric vehicles. Also please provide the public with the plan for electric charging stations statewide that will serve the number of vehicles necessary under adoption of this rule. Please identify the approved funding source to buy vehicles for ride share or car sharing programs.

While it's always important to discuss how we can make our community and state better, likewise it's critical to provide an actual, factual energy plan and grid that is economically feasible.

Thank you for your attention to these matters and I look forward to your answers to the questions and concerns identified in this letter. You may provide your responses to my office before moving this discussion and rules forward. Thank you.

Sincerely,

Senator Tim Knopp  
Senate District 27  
Senate Minority Leader

**From:** [\(null\) watermanranch](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Comments on Oregon's Proposed Electric Vehicle Mandate  
**Date:** Friday, September 2, 2022 5:22:11 PM

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Electric Vehicle Rulemaking Advisory Committee:

I would first like to express my deep concern that I just received the notice on this comment period for EV proposed rulemaking an hour ago and comments are due on Tuesday. I encourage you to extend the comment period until October 1.

I would like to share a story that I heard at the beauty shop the other day. One of the husbands worked for the Bandon State Park. The story goes that a tourist in his EV was throwing a fit because there was no place to charge his EV. The charging station in town is supposedly only for Tesla's or at least that was what was said. How will all these EV operators be able to travel when the infra-structure for charging EV's is unavailable in so many parts in rural areas of Oregon and there are very few to service such a mandate. How much time will be wasted sitting at a charging station when one is traveling or just going to town?

As a lifetime rural Oregonian, I can't help but wonder how my family is going to survive such a mandate. First of all the cost is huge. I'm sorry but we are not part of the Portland elite who can afford such vehicles. I go to Salem regularly for meetings, business, and to visit family. How can I get there in an EV when my charge starts to run out half way there, there are no charging stations until I get to the I-5 corridor? As ranchers and timber owners, we cannot change our equipment over to electric without a tremendous cost let alone, how will our loggers be able to get to and from work in the back country in their electric vehicle?

For the majority of the public who lives in town, the electric vehicle might be a good choice. Will our electric grid be able to handle millions of EV's in use every day. The joke I heard this summer is Californians will need to decide between their cars and air conditions and what will people do when the electric grid is down. How are we going to get out of our coastal area if there is a tsunami warning? Have you ever been without electricity for up to a week due to storm damage? How do you think we can go to town to get supplies when the EV you are mandating has no charge and there is no electricity to charge it?

It is obvious people who live in "glass houses" and are among the elite urban think up of these ideas. For those of us middle class families who live in rural Oregon, this EV mandate is utterly ridiculous.

Oregon seems to be pushing mandates on short timelines to reduce public input and the government is taking over our lives, mandating what we can and cannot buy or do. I encourage you to put a stop to this "California" idea and let the citizens of California work out the quirks and suffer the consequences of this bazaar mandate. Five years from now, California will be able to guide you on what works and does not work if you live outside the city. They will know if this is actually a feasible idea or not.

Thank you for the opportunity to comment.

Sharon Waterman, Lifetime Rural Oregon landowner  
Bandon, Oregon

Sent from my iPad

**From:** [Shaun Tavernia](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Gas car ban  
**Date:** Sunday, September 4, 2022 9:21:46 AM

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No ban

**From:** [Shawn Andrew](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Clean Air Acts  
**Date:** Saturday, September 3, 2022 7:30:41 AM

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To Whomever Is Making Decisions,

While we as humans are worried about our lands, air, water, and all our resources, it is my opinion and many others, that following California (or anyone else) in their goal to make everyone have electric vehicles is not only misguided and not feasible, it will cause more damage to Oregon than you all think.

1) The majority of the population cannot afford an electric vehicle, this, many will not comply due to hardship. How much money is the state willing to spend to go after everyone? Creating more spending than necessary.

2) Most of our electricity comes from powerplants that use coal to create power. Yes we have wind power and hydro power but those alone cannot keep us running now. Do you truly think adding more power using machines (big ones!) Is going to make that easier? California already has power issues and rolling blackouts every year. But hey, let's add more power sucking cars to the pile!

Not to mention: Do you know how many birds, including the Bald eagle, the wind turbines kill each month? Do you know they are not reusable? Once they break, they get buried in the ground!

3) Do you all like to eat? Like your coffee? How do you expect to get food to the table when you are trying to cripple the farmers and ranchers, the store employees, the factory workers...the people that help keep this state going on a daily basis. We cannot afford the ever increasing costs of daily items let alone a \$50,000+ electric vehicle. Some of us travel hours to get to and from work a day!

4) The homeless population is already getting out of control. Adding another very expensive and continued costly bill will affect everyone. There will be more people losing their jobs due to not being able to get to them. Homeless population will grow. No transportation, no going to work, no paying bills, end up homeless. Simple math really.

I ask that you all pause and think about the whole state. Not just those people that live in the cities, but the majority of the state that does not. Less populated areas have a much lower emissions than the major cities. They also produce the food for us and animals. They will be hurt the most at first by these changes in vehicles that you are wanting. But as time goes on, the cities will be hurt due to massive rising costs for food and supplies. If it costs the producers (including stores) more to get products to the public, that costs will affect everyone else before it is said and done.

Please do not pass this.

Thank you for your time and consideration,

Shawn Andrew

**From:** [Shawnn Hartley](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Advanced Clean Cars II Public Comment  
**Date:** Tuesday, September 6, 2022 11:46:27 AM

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To whom it may concern,

My name is Shawnn Hartley and I am a resident of Albany. I am writing in strong opposition to this proposed rule. This rule presents a case of extreme government overreach in forcing a radical political agenda onto the people of Oregon, circumventing the legislature, and undermining citizens' natural rights to fairly trade and associate with one another. It is not the place of the state government and especially not through sole action on the part of the executive branch to determine what kinds of vehicles can be sold and by extension operated by the people of Oregon.

This authoritarian and foolhardy rule also runs directly counter to competent analyses on the issue of climate change. As renowned expert Bjorn Lomborg wrote in the Wall Street Journal in July of this year "It's entirely possible to help the climate and working families at the same time. The policies to do so are innovation-focused. Policy makers need to recognize that they simply can't eliminate fossil fuels with current technologies. The world gets almost 80% of its energy from fossil fuels, and even if all current climate policies were fully implemented, by midcentury fossil fuels would still provide more than half of all energy used world-wide, according to the International Energy Agency. Instead of sending energy prices sky-high by trying to force a transition to renewables prematurely, policy makers should focus on funding research to develop clean energy sources that are actually affordable and reliable." In this vein of the executive branch end running around the legislature, research from Bartram et. al (2018) on the real effects of climate policy has shown that climate policies implemented at the state level have the effect of pushing firms to simply reallocate emissions to other states and ultimately show an overall increase in emissions. The effect of implementing such policies in Oregon while China, India and other countries continue to ramp up energy production primarily via fossil fuels, will have no net effect on emissions or climate change and will only serve to force Oregonians to pay higher prices to serve the misinformed ideology of a few authoritarians who are willing to co-opt government to impose their views. This rule should be struck down entirely.

Regards,

Shawnn Hartley M.A.

**From:** [Shirley](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** EV rule  
**Date:** Saturday, September 3, 2022 7:34:55 PM

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Dear DEQ,

I am writing to object strongly to the ruling to mandate only electric vehicles being sold by 2035! Even with the small percentage of EVs in California now, they are being told not to charge because it puts stress in the grid!! And of course no one is considering how much fossil fuel energy is needed to mine lithium, or the threat to the environment when all these batteries quit working and end up in landfills. And of course, most people can't afford to purchase an EV or the higher insurance and maintenance that goes with it.

Is the goal to hobble our state's working class and our state's economic future?

PLEASE use some common sense and don't put this ridiculous rule into policy!

Thank you,  
Shirley Kluver  
Retired teacher

Sent from my iPhone

**From:** [steve wright](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Date:** Wednesday, September 7, 2022 6:52:00 AM

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Dont even. What are us folks to do that do not live in the big cities? This is not the way to introduce EV to people. Demanding this is what non democratic governments due. Dont be a Hitler.



**From:** [Stuart Wright](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Internal combustion engines  
**Date:** Wednesday, September 7, 2022 2:41:34 PM

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Thank you for the opportunity. Simply I think it would be wrong to impose such a mandate. I think it is up to individuals as to the mode of transportation they want and can afford. I think you are creating a Frankenstein society and should let society evolve naturally and not try to force this type of progress.

Respectfully.

From: [S](#)  
To: [2022 Levvzev \\* DEQ](#)  
Subject: Advanced Clean Cars II  
Date: Tuesday, September 6, 2022 8:20:44 AM

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**Oregonians should have the choice to oppose or support this policy change. Oregon's supermajority and the appointments for over 250 boards and commissions made by Kate Brown should not overrule Oregonian's choice, especially for this big of a policy change. This is not a rule, it's a statewide policy that effects every Oregonian.**

**My concerns with adopting this new ban on gas powered vehicle policy within 13 years:**

**Currently, Oregon has inadequate charging infrastructure. Power grids are already strained, this policy will add more strain with vehicles requiring charging.**

**One of the biggest challenges to EV adoption is the battery production process and supply chain. New mining and supply chains are needed to support EVs. There are a lot of minerals required to produce batteries for EVs, as a result, there's a lot of mining and transportation of materials involved.**

**Electric vehicles lose charge when parked although it is minimal, it can add up over time. Green Car Reports suggest you charge your battery at least 80% before parking the car.**

**Electric cars can travel less distance-**

**Oregon's per capita sector-based emissions are 32 percent lower than U.S. per capita emissions, having dropped by 25 percent since 1990. ”**

**Lithium ion batteries used in EVs also do not perform as well in cold temperatures, which can lead to further range reductions. Their general findings are that drivers of an average EV might see about half of the manufacturer's official range. If the average range is 200 miles per charge, the range will decrease to 100 miles before required charging in cold temperatures.**

**Electric cars are more expensive, and battery packs may need to be replaced- The battery packs within an electric car are expensive and may need to be replaced more than once over the lifetime of the car. All-electric vehicles are also more expensive than gas-powered cars, and the upfront cost of all-electric vehicle can also be prohibitive. However, the fuel cost savings, tax credits, and state incentives can help to offset this cost overall if they are available.**

**Finite critical minerals and rare earth metals-**

EVs use about six times more mineral inputs than ICE vehicles. The IEA's forecast of 70 million EVs on the road by 2040 will be accompanied by a 30-fold increase in demand for minerals. There is no shortage of these resources underground, but rather a concern as to whether they will be extracted sustainably, in line with social responsibility governance, and in time to meet demand. It is anticipated that there will be a shortage of nickel and challenges in scaling up lithium production. This supply shortage may also cause manufacturers to use lower-quality mineral inputs, adversely affecting battery performance. Oregonians have a right to decide our fate! Please let us vote instead of sealing our fate.

Concerned Citizen,

Susan Maple

**From:** [Susan Ramsay 2022](#)  
**To:** [Levzev \\* DEQ](#)  
**Subject:** Proposal response on all electric vehicles by 2035  
**Date:** Tuesday, September 6, 2022 11:00:41 AM

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ARE YOU INSANE! We have already outgrown our electrical grid capacity, You have sold Oregon water to other states, you want to remove dams and refuse to continue with fossil fuel to supplement our already strained electrical system. ARE YOU ATTEMPTING TO PUSH THE PUBLIC TO THE BRINK OF SUICIDE WITH YOUR STUPIDITY? You appear to think that everything needed to supply your personal needs comes from somewhere other than our own back yard. You push agriculture to the brink with regulation that stymies survival of this industry at every turn. Where is your mental health concerns for Oregon's citizens? Is it your intent to create financial and personal tragedies just for the HELL OF IT!

**From:** [tjones2280](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Clean vehicles.  
**Date:** Tuesday, September 6, 2022 4:48:07 PM

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Gasoline and diesel powered vehicles sre way more environmentally friendly than electric vehicles. Unless you are willing to put a coal fired or natural gas generating station in every town in Oregon there won't be enough electricity to power all the vehicles. Wind and solar generated electricity is nothing but a boondoggle designed to by votes.

Sent from my Verizon, Samsung Galaxy smartphone

**From:** [Tina Howard](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Gasoline banned in 2035 Vehicles  
**Date:** Wednesday, September 7, 2022 7:09:11 AM

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I would like to express my concern for gasoline Vehicles being banned in 2035. Oregon is not equipped to make such a drastic change, this does not allow enough time to properly prepare for such a change. There is already an issue with inadequate charging stations and the strain is currently putting on power grids with a limited vehicles that are already using it. Another concern that I have is the batteries, they are costly and how are we going to make enough of them and dispose of them properly. I am not in favor of this change.

**From:** [TJ Bossard](#)  
**To:** [2022 Levzhev \\* DEQ](#)  
**Subject:** Advanced clean car act  
**Date:** Monday, September 5, 2022 3:17:08 PM

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I strongly oppose the adoption of the clean car act in Oregon as adopted by California.

It's my understanding about what this car act does is to basically put us back in our technology on the road Design and technology in order to accommodate short-term Environmental and economic conditions and technology in order to accommodate a short-term fad in our transportation industry that is merely accommodating and duplicating our neighbors to the south.

Sent from my iPhone

**From:** [Todd Hutchens](#)  
**To:** [2022 Levzhev \\* DEQ](#)  
**Subject:** No To all electric. Stop the nonsense  
**Date:** Monday, September 5, 2022 7:57:19 AM

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Do not follow California's stupid mandate to go all electric. This would be the worst for the entire planet. This is nonsense.

A battery in an electric car, lets say an average Tesla, is made of 25 pounds of lithium, 60 pounds of nickel, 44 pounds of manganese, 30 pounds of cobalt, 200 pounds of copper, and 400 pounds of aluminum, steel, and plastic, etc..... averaging 750-1,000 pounds of minerals, that had to be mined and processed into a battery that merely stores electricity..... Electricity which is generated by oil, gas, coal, nuclear, or water (and a tiny fraction of wind and solar)...

"Production of raw materials like lithium, cobalt, and nickel that are essential to (EV) technologies are often ruinous to land, water, Wildlife and people." NY Times

As worldwide battery demand is expected to triple and reach a value of \$100bn by 2025, failing to boost lithium supply could make or break the global electric vehicle supply chain and jeopardise global climate efforts, a new investigation by *E&T* finds.

To ensure supply, lithium mining must increase or otherwise a deficit may harm progress, warn experts. Most of the world's lithium production takes place in South America, where 70 per cent of global reserves are concentrated. Chile, accounting for 38 per cent of the production, is in a difficult spot. Firms are doing their best to exploit reserves, but environmental concerns increasingly challenge their endeavours.

It takes **500,000 gallons** of water goes into extracting 1 ton of lithium. Water is life.

<https://eandt.theiet.org/content/articles/2019/08/lithium-firms-are-depleting-vital-water-supplies-in-chile-according-to-et-analysis/>

How do you recycle those batteries? You don't. Right into the landfill.

That is the truth, about the lie, of "green" energy.

Todd Hutchens

**From:** [Todd Swenson](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Clean car legislation  
**Date:** Sunday, September 4, 2022 5:38:01 PM

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Dear Legislators,

I'll keep this short, I drive a full size truck with capabilities that are not reached by EV trucks today. While I'm sure they will soon reach the equal output. The affordability is beyond reasonable for most people. Not to mention production of energy required to run EV. Still requires use of fuel systems and therefore not saving the climate. Also not to mention the power grid is not sufficient to run the foreseen ev cars. California is having to shut off their power grid in places. Long story short 2035 is too soon!!

Thank you,  
Todd



**From:** [Elizabeth Lathrop](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Electric cars  
**Date:** Tuesday, September 6, 2022 4:56:27 PM

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Going all electric is going to rape our natural resources worse than the fuel ! Where's the extra power coming from? Who's paying the bill? Talk about cut off your nose despite your face! We go all EV it will bankrupt blue collar America! I vote NO!

TOM & ELIZABETH LATHROP

**From:** [Tom Calabrese 2022](#)  
**To:** [Levvezv \\* DEQ](#)  
**Subject:** Comments on Proposed Advanced Clean Cars II Draft Rules  
**Date:** Tuesday, September 6, 2022 2:42:56 PM

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Hello -

Point 1 - These proposed rules require a change in our transportation sector that is impossible to achieve. There are not enough reserves of copper, cobalt, graphite, lithium, nickel, and vanadium IN THE ENTIRE WORLD to achieve even the first generation new technologies designed to replace fossil fuel use (Countercurrents.org, 2022, Is there enough metal to replace oil? by Robert Hunziker). That Oregon's government feels it needs to go down this infeasible path tells much about the insanity running this state.

Point 2 - Not only is this an impossible change to make, there is no reason to do it. Any reduction in CO2 emissions in Oregon (and California plus any other states stupid enough to do this) will not change climate one whit. With China and India going full bore on developing hundreds of coal-fired generating stations, nothing we do will change the concentration of CO2 in the atmosphere. Nor should we do anything. Why would our government (presumably of the people, by the people, and for the people) impose crushing regulations and costs on the people for no real reason?

Point 3 - Lastly, if these rules are imposed they will cause severe crisis in our agricultural community. It is impracticable 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 (this is a problem for the rest of us, too!). These vehicles are prohibitively expensive even with subsidies. Maybe battery technology will improve over the next decade although this is not guaranteed. Besides, see points 1 and 2.

My suggestion would be to let the free market work so people can decide what they want and how they are going to pay for it. Capital will be directed appropriately, rather than as directed by government. When government gets involved capital is misdirected and wasted.

Thank you.

Tom

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Tom Calabrese  
Portland, OR

**From:** [Tom Holt](#)  
**To:** [2022 Levzhev \\* DEQ](#)  
**Subject:** Comment on Clean Car Rule  
**Date:** Wednesday, September 7, 2022 11:50:41 AM

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I am writing, on behalf of the Oregon Tow Truck Association, to submit comment on DEQ's proposed "Clean Car Rule" – i.e., adopting California's very recently adopted ban on fuel-powered "light duty" vehicles.

First, I question whether DEQ really wants general public comment. Despite the recent headlines on this issue, the link to comment is buried three layers deep on DEQ's website.

The OTTA opposes this rule. Neither the vehicle market nor the charging infrastructure is anywhere close to being on track to meet the arbitrary 2035 goal. Forcing dealers to limit consumers choices before the market supports exist for wide adoption of electric vehicles will be fraught with external consequences. Just this week, California's grid operator requested that electric vehicle owners not charge their vehicles in the evening hours due to a power shortage. This kind of disruption only is bound to be worse if Oregon and other states force electric vehicles before power grids and the marketplace are ready.

In addition, there is no evidence that DEQ has considered the very real upstream and downstream environmental consequences accelerated vehicle battery production. Many of the key materials needed for currently and foreseeable batteries available come from countries with scant environmental or human rights protections. And today, many of our members find batteries in cars headed for scrap to be hazardous to handle. We will have more of them as EV production is forced up.

Although the rule's application to "light duty" vehicles right now would only affect the cars OTTA members handle, it would set a bad precedent for the heavy vehicles OTTA members use to assist motorists and truckers alike.

We urge DEQ to suspend work on this rule.

Sincerely,

Tom Holt  
The Holt Company  
Government & Public Affairs

[Schedule a meeting with me using Calendly](#)

**From:** [Tony Gomes](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** No to rule change for Advanced Clean Cars  
**Date:** Monday, September 5, 2022 9:32:49 PM

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Hi good evening, here is my comment for the proposed rule making. Our state is in shambles this is not going to be good for the people who live here. Only add more burden and higher cost to people who already can't afford it.

Currently in Oregon 0.57% of all cars are electric.

As of 2022 the average price of a new electric car in the U.S. is \$66,000.

in California last week, not even 3 days after announcing a similar ban, the state asked its 1.1 million electric car owners not to charge to ease the strain on the power grid. There are 14 million registered vehicles in California. If they can't handle 1 million today, how will they handle 14 million within 10 years?

In the latest government spending bill there is a \$7,500 tax credit for new EVs. Coincidentally in August GM and Ford increased their electric vehicle model costs between \$6,000-\$8,000.

(Record high inflation could be another reason behind the price increases)

47% of Americans Can't Handle a \$500 emergency without worry. A new Tesla battery costs about \$16,000.

Where are all the minerals going to come from?

70% of the worlds cobalt is in the Congo, China owns 80% of the these cobalt mines. Roughly 40,000 children slaves. Do these people matter or since we don't see it we can ignore these human rights issues and open pit mining ecological disaster.

If China gets mad at us over Taiwan, will we be able to get these precious metals or will China restrict resources to us as Russia is currently doing to Europe? (They just turned off all the gas to Europe if you haven't read it in the news)

The price of electricity in Germany has risen 400% since July 2021. Do we know if a wild price increase like that wouldn't happen here?

Remember the wildfires in September of two years ago when we were loading up our belongings from our homes, evacuating, sleeping in a parking lot!, then going back to guard them after hearing reports of looters? I wouldn't want to rely on a battery with a 150-300 mile charge.

**From:** [Tyler Young](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** No electric requirements  
**Date:** Tuesday, September 6, 2022 8:35:26 AM

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While I appreciate the effort to lower emission by increasing electrical cars, I do not believe it is the right decision.

I hope the committee draws the same conclusions and I'm certain the committee is far more knowledgeable on the pros and cons than I. Please take a unbiased Approach and study on the facts. This decision will impact the lives of many and needs to be the right decision.

Tyler  
Sent from my iPhone

**From:** [Ronni with Relay for Life](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Banning the sale of gas vehicles  
**Date:** Monday, September 5, 2022 1:51:10 PM

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You are absolutely nuts

There is no way, we the citizens of Oregon are going to allow this over step of authority. The power grid cannot support this. The average household cannot afford an electric vehicle. Not to mention how bad for the environment the batteries are I can go on

Sincerely

Veronica Joll

A life long resident of Oregon

**From:** [vickie Holdeman](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Cars  
**Date:** Tuesday, September 6, 2022 6:55:10 PM

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No electric cars only!! We need gas cars also! Do not do this to the Oregon people!!LUDICROUS!!! We the people say Noooooo!!

**From:** [Vicky Robbins](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Electric Vehicles by 3035  
**Date:** Saturday, September 3, 2022 2:07:37 PM

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Let's assume for just one moment electric vehicles are cleaner, less expensive, more responsible to own and operate, and eliminate environmental issues of a vehicular nature. However, we ALL know the truth and, quite simply, electric vehicles are simply not practical. The cost to the earth to mine the batteries is unfathomable. The practicality of replacing the batteries is nearly as much (in some cases more) as the initial purchase price of the new electric vehicle. Disposal of the batteries is expensive and not environmentally sound. Currently the government wants to be rid of fossil fuels, which is a probable platform for the future? However, electric vehicles is NOT the answer. There are many levels of this argument and not one debate has remotely convinced me this is. Good idea.

Vicky Robbins  
Lebanon, OR 97355

VLRobbins



**From:** [Sande Johnson](#)  
**To:** [2022 Levzvez \\* DEQ](#)  
**Subject:** electric vehicles  
**Date:** Sunday, September 4, 2022 6:11:59 AM

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Comment on proposed electric vehicles, 2035

Cart before horse mentality. Where is the electricity coming from? And the grid upgrades to sustain its delivery?  
Walt Johnson

**From:** [wayhun27](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Public comment on proposed EV rules  
**Date:** Sunday, September 4, 2022 11:06:55 AM

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I would like to add my support for the proposed rule for Oregon to have all new cars/light trucks be EV by 2035. As a 'soon to be' EV owner I'm excited at having a zero emission vehicle.

I know many have concerns o the cost of these vehicles and the availability of charging stations. I'm optimistic that those issues will improve over time, certainly by 2035.

Another concern is recycling EV batteries at the end of their useful life. Depending on which article you read components of these batteries may or may not be recyclable. Hopefully, technology will improve over time that will enable these batteries to be fully recyclable.

Despite the concerns I am fully in support of advancing this rule. Thank you,

Wayne Hunnicutt  
John Day, Oregon

Sent from my iPhone

**From:** [City Councilor Wayne Rieskamp](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Date:** Tuesday, September 6, 2022 3:21:10 PM

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Am not in favor of Oregon carbon copieing California.  
Perhaps when other states have proven the ability to get the cost down to levels of pre Covid.  
The cost of the vehicles, the cost of and the life span of the batteries then perhaps a certain percentage of Oregon owners may be able to afford a Electric Vehicle.  
But I dought it.  
At the present time based on what we know. It's a bad idea.

Sent from my Verizon, Samsung Galaxy smartphone  
Get [Outlook for Android](#)

**From:** [W.F](#)  
**To:** [2022 Levvzev \\* DEQ](#)  
**Subject:** Banning gas fueled vehicles 2035  
**Date:** Sunday, September 4, 2022 8:47:48 PM

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What is your tangible replacement? Oregon is also removing fossil fuel generators for electricity. What is the replacement? Electric vehicles are Not sustainable and are only a political pawn vs reality. There is not enough electricity to power these cars and even a grade schooler knows our grid cannot support even 10% of our current transportation.

Willy Fincher

**From:** [Winifred Kovacik](#)  
**To:** [2022 Levzhev \\* DEQ](#)  
**Subject:** Transition to electric vehicle mandate  
**Date:** Wednesday, September 7, 2022 9:29:08 AM

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I am not a native Oregonian - dislike living with the governmental mandates - but - to follow in California's footsteps is the worst possible step. With our dependence on China for electric car batteries - we are alarmingly advancing on their takeover of America. The vast majority of Americans can't afford electric cars- also resent the overall ramifications of their use being hidden. Start pumping our own gas out of the ground - clean energy - and help the rest of the world with our energy abundance. W. Kovacik