



State of Oregon Department of Environmental Quality

# Draft Fiscal Impact Statement

Low Emission Vehicle (LEV)/Zero Emission Vehicle (ZEV) Program

2022 Rule Update - Advanced Clean Cars II Rule

Advisory Committee Meeting 2

## Summary

This proposed rule will enable Oregon to adopt California's latest vehicle emission standards for light-duty vehicles and trucks for the 2026 to 2035 model year vehicles, also known as the Advanced Clean Cars II (ACC II) Rule. Section 177 of the federal Clean Air Act allows states to adopt vehicle emission standards that are more stringent than the federal standards. Historically, the more stringent standards have been those adopted by the state of California and Oregon has a long history of adopting them in order to meet national and local air quality standards. Adopting the ACC II rules would significantly reduce tailpipe criteria pollutant and greenhouse gas emissions and is a foundational strategy to decarbonize Oregon's transportation sector.

The rule requires light-duty vehicle manufacturers to sell zero emission vehicles (ZEVs) as a certain percentage of total sales, beginning with a 35% requirement for the 2026 vehicle model year and culminating with a 100% ZEV sales requirement for the 2035 vehicle model year. In addition to the ZEV sales requirement, that standards also require manufacturers to meet minimum technology requirements including a minimum range, parts and battery warranty, data standardization, battery labeling, charging cord and durability requirements. The requirements also provide flexibilities for manufacturers to comply with the ZEV sales percentages mandates.

The rule also includes Low Emission Vehicle (LEV) requirements to ensure gasoline vehicles sold up until 2035 are as clean as possible. These changes clarify both existing definitions and testing requirements, and reduce cold-start emissions and lowers the maximum exhaust and evaporative emission rates.

## Affected parties

The parties likely economically affected by these rules are:

- Light-duty vehicle manufacturers. Under the rules, businesses that manufacture passenger cars and trucks that will be sold in Oregon must comply with the motor vehicle emissions standards, testing systems, reporting, and other requirements.
- Light-duty vehicle purchasers. Under the rules, manufacturers may pass on the costs of complying with the rules to vehicle purchasers. The rules' vehicle durability and warranty provisions may also economically affect vehicle purchasers.
- Automobile dealerships that sell light-duty vehicles and have service departments. Under the rules, dealers may be economically affected due to increased availability of electric vehicles and by likely differing service needs of electric vehicles.

- Automobile repair shops. Under the rules, automobile repair shops may be economically affected because electric vehicles generally do not require as much maintenance and repair work as internal combustion engine gas vehicles.
- Electric utilities. Under the rules utilities may be economically affected from increased use of electricity to charge the new electric vehicles.
- Electric charging suppliers. Under the rules, energy charging suppliers may be economically affected from the increased need to install electric chargers for the new vehicles.
- The public. Under the rules, the public may be economically affected because light-duty vehicles will be emitting fewer greenhouse gas and diesel emissions resulting in reduced health and environmental exposure impacts.
- State agencies and local governments. Under the rules, state agencies (other than DEQ) and local governments may be affected in the same manner that members of the public may be affected. In addition, DEQ may be affected due to limited additional implementation costs.

## **Fiscal and Economic Impact**

### **General Assumptions**

Much of this analysis of the fiscal and economic impacts of this proposal is based on the California Air Resources Board's (CARB) analysis for its rule. DEQ has reviewed the CARB analysis and concludes that, since the rules that DEQ is proposing are identical to those adopted and proposed in California, the fiscal and economic impacts described by CARB for California also describe the relative effect of the likely fiscal and economic impacts that will occur in Oregon if the EQC adopts identical regulations. DEQ has also conducted its own analysis to estimate emissions reductions that will be achieved in Oregon, based on Oregon demographics and vehicle miles traveled.

### **Overall Impact of the Rules**

DEQ anticipates the proposed rulemaking will have a fiscal and economic impact. Automobile manufacturers will have to increase production of zero emission vehicles to meet the mandatory sales requirements, while ensuring these vehicles meet specific vehicle range requirements, vehicle durability, battery durability, and charging capability. For example, manufacturers must:

- Achieve 35% ZEV sales starting with the 2026 model year, increasing every year until the 2035 model year where 100% of vehicle sales must be ZEV
- Meet fleet average requirements, new light-duty vehicle emission standards for internal combustion engines
- Meet its compliance obligation with a certain percentage of environmental justice values, either through
  - Placing discounted ZEVs in community-based clean mobility programs
  - Providing lower priced ZEVs
  - Ensuring used ZEVs are available at dealerships participating in a low-income assistance program
- Meet minimum range, parts and battery warranty requirements, data standardization, charging cord requirements, and data standardization requirements for all EVs sold.

Overall, Oregon's market for new vehicles is approximately 10 percent of California's market; DEQ estimates the associated costs to be proportionate. CARB's analysis evaluated the overall cost of compliance by assessing ZEV technologies available on the market today, the estimated expected technical advancements during the regulatory timeframe, and the costs to transition all gasoline vehicle models to electric. CARB estimated it would cost a total of \$30 billion dollars for manufacturers to comply with the vehicle requirements up through the 2040 model year.<sup>1</sup> DEQ estimates it could cost up to \$3 billion dollars for manufacturers to comply with these rules in Oregon. However, because manufacturers must already modify their vehicle fleet to comply with California's rules, the cost to comply in Oregon could be less due to economies of scale.

While the required changes will have a fiscal impact on automobile manufacturers directly affected by the rule, overall it will have a positive fiscal impact for the public and environment. Shifting the vehicle fleet away from internal combustion engines to zero emission vehicles directly addresses both the effects of climate change by reducing greenhouse gas emissions and reducing emissions of other air pollutants that impair air quality. DEQ estimates the anticipated reductions in greenhouse gas and other air pollutant emissions and decreased fuel consumption will result in net economic benefits overall, resulting in up to \$5.8 billion in savings.

### **Impacts of greenhouse gas emissions**

The overwhelming scientific consensus is that global warming is primarily caused by human activity, and that major reductions in GHG emissions are urgently needed across all sectors in order to avert the worst effects of climate change. In Oregon, the transportation sector accounts for almost 40% of GHG emissions.

Higher temperatures, changing precipitation patterns, reduced snowpack, drier summers, and more frequent and damaging fires are being experienced in Oregon. Increased GHG emissions exacerbates drought, tree mortality and the frequency and magnitude of wildfire events. In 2019 alone, Oregon experienced 2,000 wildfires that burned roughly 665,000 acres of forest and rangeland. It cost the state nearly half a billion dollars to suppress these fires. Depending on the extent of GHG emissions released, average temperatures in Oregon are expected to increase by 4°F to 9°F (2.2°C to 5°C) over the course of the century. Within the next three decades, most locations in Oregon are likely to have more frequent heatwaves, often measured as consecutive days above a particular high temperature threshold. (OGWC Biennial Report, 2020). With the higher temperatures, it can result in reduced snowpack thereby limiting the amount of hydropower available when demand for electricity is high in the summertime and causing reduced streamflow that could threaten commercial and tribal fisheries. The costs of all these actions are significant and growing as it affects human health and safety, infrastructure, economic growth, crop production, water supplies, and fish and wildlife populations.

### **Impacts of vehicle emissions**

Emissions from motor vehicles harm human health, the environment, and the climate via emissions of pollutants such as fine particulate matter, air toxics, sulfur oxides and nitrogen oxides, a precursor to the formation of ground level ozone. Reducing these emissions will provide

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<sup>1</sup> Advanced Clean Cars II, Initial Statement of Reasons, CARB, 2022

a benefit to low-income communities and communities of color, who are often disproportionately impacted by transportation pollution due to their proximity to roadways. Communities across Oregon, including the Portland-metropolitan area and the Rogue Valley have experienced increasing levels of ozone in recent years. Increasing levels of ozone – or smog – leads to a wide variety of health effects including cardiovascular and respiratory illnesses. The proposed ACC II rule will reduce ozone, PM2.5, and greenhouse gas emissions. DEQ evaluated the anticipated health benefits using EPA’s CO-Benefits Risk Assessment (COBRA) model. On-road mobile source emissions are reduced while emissions from generating additional electricity will increase. However, these emissions will be eliminated by 2040 when Oregon will be supplied with zero-carbon electricity as HB 2021<sup>2</sup> (Clean Energy bill) is implemented. Overall, the net benefit of the emission changes is \$12.96 million dollars.<sup>3</sup> As a result of these reductions, Oregon can expect to see reduced mortality with up to 150 fewer premature deaths, 34 fewer hospital and emergency room visits and 8,760 fewer lost work days.

Overall, and for the reasons described above, the fiscal impact of Oregon adopting these proposed rules is expected to have a direct impact on light-duty vehicle manufacturers with an indirect impact on vehicle dealers, vehicle purchasers, auto repair shops, utility providers, electric charging providers, and the public. The proposed rules are also anticipated to provide air quality benefits, reduce exposure to harmful air quality pollutants, improve public health, and provide overall greenhouse gas reductions to achieve the state’s climate goals.

### **Relationship to other programs**

Oregon has aggressive goals to reduce greenhouse gas emissions and this proposed rule addresses one important facet to solve the climate problem – providing the state with zero emission light-duty vehicles. Additionally, DEQ has also adopted:

- the Advanced Clean Trucks Rule which requires manufacturers of medium and heavy-duty trucks to produce and deliver increasing percentages of ZEVs by the 2040 model year.
- the Clean Fuels Program (CFP) which requires the average carbon intensity of Oregon’s transportation fuels to be cleaner. Electricity used as a transportation fuel has zero tailpipe GHG emissions and is at least 60% lower-carbon on a lifecycle basis than the gasoline and diesel they displace.
- the Climate Protection Program which requires reductions in GHG emissions from fossil fuels including those used for transportation, industry, commercial and residential settings.

A recent analysis conducted by DEQ for the CFP Expansion 2022 Rulemaking<sup>4</sup> indicates that transitioning to lower-carbon transportation fuels through 2035 provides significant health benefits to Oregonians, in the range of \$90 million per year of avoided health costs. Much of this can be attributed to reduction in particulate emissions due to electrification. Credits generated in

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<sup>2</sup> House Bill 2021, Oregon Legislature 2021 session, <https://olis.oregonlegislature.gov/liz/2021R1/Downloads/MeasureDocument/HB2021/Enrolled>

<sup>3</sup> Benefits of Adopting California’s Advanced Clean Car II (ACC II) Standards in Oregon, NESCAUM, June 2022.

<sup>4</sup> <https://www.oregon.gov/deq/rulemaking/Pages/cfp2022.aspx>

the CFP can also reduce the costs of vehicles and charging infrastructure needed to transition to ZEV.

## Statement of Cost of Compliance

### Public

#### Benefits of the regulations

The ACC II regulation will result in more light-duty ZEVs in use in Oregon, resulting in all new vehicle sales to be ZEV by 2035. As new light-duty ZEVs on the road replace older gasoline-powered conventional vehicles, it will reduce emissions of greenhouse gases and other air quality pollutants. The increased ZEV availability and use furthers Oregon's goals to reduce greenhouse gas emissions to 45 percent below 1990 levels in 2035 and to an 80 percent reduction below 1990 levels in 2050. Additionally, the ACC II rules ensure that the conventional gasoline vehicles produced and offered for sale up through the 2035 model year meet increasingly stringent emissions requirements.

#### CO<sub>2</sub> emissions reductions

One of the key benefits to these rules is the anticipated reduction in CO<sub>2</sub> emissions. As discussed earlier, impacts as a result of greenhouse gas emissions are significant and these rules will address some of the threats posed by increased GHG emissions. DEQ utilized CARB's analysis and methodology to estimate the emissions reductions and scaled them to fit Oregon's demographics and vehicle usage. DEQ estimates the total CO<sub>2</sub> reductions from 2024 through 2040 to be 48 MMT per year. A NESCAUM study also looked at modeling results for Oregon and determined it would result in cumulative avoided CO<sub>2</sub> emissions of 54.1 million metric tons by 2040.<sup>5</sup> Overall, the estimated emissions reductions in Oregon as a result of the ACC II rule is expected to be between 48 MMT and 54.1 MMT per year by 2040.

The proposed ACCII regulations account for GHG benefits in terms of carbon dioxide (CO<sub>2</sub>) emissions avoided. The benefit of these GHG emission reductions can be estimated using the social cost of carbon (SC-CO<sub>2</sub>), which provides a dollar valuation of the damages caused by one ton of carbon pollution and represents the monetary benefit today of avoiding those future damages by reducing future carbon emissions. The future damages could include effects on agricultural productivity, energy use, human health, property damage from increased flood risk, and other aspects of the economy. The social cost of carbon is also sensitive to the discount rate, which is a method of placing a present value on costs or benefits that will occur at a future date.

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<sup>5</sup> Benefits of Adopting California's Advanced Clean Car II (ACC II) Standards in Oregon, NESCAUM, June 2022.

To analyze the social cost of carbon, DEQ utilized the Interagency Working Group (IWG) values to determine the social costs of actions to reduce GHG emissions.<sup>6</sup> Because the SC-CO<sub>2</sub> is highly sensitive to the discount rates applied, the range of discount rates from 2.5% to 5% was used to illustrate the varying magnitude of possible economic outcomes. Depending upon the discount rates applied, the benefits range from \$1.2 billion to \$5.2 billion through 2040.

Social Cost of Carbon by Discount Rate (in 2020\$ per Metric Ton of CO<sub>2</sub>)<sup>7</sup>

Year	5% Discount Rate	3% Discount Rate	2.5% Discount Rate
2026	17	57	84
2027	18	59	86
2028	18	60	87
2029	19	61	88
2030	19	62	89
2031	20	63	91
2032	21	64	92
2033	21	65	94
2034	22	66	95
2035	22	67	96
2036	23	69	98
2037	23	70	99
2038	24	71	100
2039	25	72	102
2040	25	73	103

<sup>6</sup> We note that use of IWG’s social cost of carbon likely underestimates the full economic value of reduced carbon emissions because those values do not include consideration of a wide variety of climate impacts, including the impact of the increased frequency and severity of wildfires, damages to culturally or historically significant assets, and the effects of ocean acidification. They also do not include any damages past the year 2300, though the impact of climate change will persist for millennia. With regard to the discount rate, the IWG itself noted in 2021 that when discussing intergenerational impacts, discount rates of 2% or lower (e.g., 1%) may be appropriate. See Technical Support Document: Social Cost of Greenhouse Gases for Regulatory Impact Analysis and Other Areas of Policy Decision-Making, at p. 4, (February 2021); accessible at: [https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument\\_SocialCostofCarbonMethaneNitrousOxide.pdf](https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf)

<sup>7</sup> Social Cost of Greenhouse Gases Annual Values, The White House, OMB, February 2021, <https://www.whitehouse.gov/omb/information-regulatory-affairs/regulatory-matters/#scghgs> , accessed 9/7/2022

Avoided Social Cost of Carbon for the Proposed Rule

Year	GHG Emission Reductions (MMT)	Avoided SC-CO2 (Million 2020\$)	Avoided SC-CO2 (Million 2020\$)	Avoided SC-CO2 (Million 2020\$)
		5% Discount Rate	3% Discount Rate	2.5% Discount Rate
2026	0.15	\$ 3	\$ 9	\$ 13
2027	0.37	\$ 7	\$ 22	\$ 32
2028	0.66	\$ 12	\$ 40	\$ 57
2029	1.00	\$ 19	\$ 61	\$ 88
2030	1.43	\$ 27	\$ 89	\$ 127
2031	1.97	\$ 39	\$ 124	\$ 179
2032	2.57	\$ 54	\$ 164	\$ 236
2033	3.21	\$ 67	\$ 209	\$ 302
2034	3.91	\$ 86	\$ 258	\$ 371
2035	4.66	\$ 103	\$ 312	\$ 447
2036	5.41	\$ 124	\$ 373	\$ 530
2037	6.15	\$ 141	\$ 431	\$ 609
2038	6.86	\$ 165	\$ 487	\$ 686
2039	7.55	\$ 189	\$ 544	\$ 770
2040	8.20	\$ 205	\$ 599	\$ 845
<b>Total</b>	<b>54.1</b>	<b>\$ 1,241</b>	<b>\$ 3,720</b>	<b>\$ 5,293</b>

**Other air pollutant emissions reductions**

DEQ modeled the emissions reductions of the ACC II rule and estimated the NOx reductions in 2040 to be 5674 tpd and 138 tpd in PM2.5 reductions. Additional modeling conducted for the Clean Fuels Program rule expansion, factored in scenarios considering the effect of a potential ACC II rule adoption. These estimates calculated estimated reductions of PM by 180 metric tons and a reduction in NOx of 699 metric tons.<sup>8</sup> The NESCAUM analysis estimates a cumulative NOx reduction of 3,693 tons and a cumulative PM2.5 reduction of 149 tons by 2035.<sup>9</sup>

**Environmental Justice**

Ensuring access to ZEVs and clean transportation options for low-income households and communities of color is critical in supporting equity and environmental justice while achieving emissions reductions. The ACC II rule reduces exposure to vehicle pollution, including low-income and disadvantaged communities that are often disproportionately exposed to vehicular pollution. The rule also includes provisions to ensure that as ZEVs enter the used vehicle market they are reliable, durable, and give assurances to consumers that these vehicles, including their

<sup>8</sup> Utilizing Greenhouse Gases, Regulated Emissions, and Energy Use in Technologies model (GREET) tailpipe emission factors

<sup>9</sup> Benefits of Adopting California’s Advanced Clean Car II (ACC II) Standards in Oregon, NESCAUM, June 2022.

emissions controls perform properly throughout their life. This is particularly important in the used vehicle market where the cost of ZEVs become more affordable to lower-income households. Further, the ZEV regulation incentivizes automakers to take actions to improve access to ZEVs for disadvantaged, low-income, and other frontline communities through investing in community carshare programs, producing more affordable ZEVs, and ensuring that more used ZEVs are available.

### **Anticipated costs of the regulation**

Under the ACC II rule, there are no direct costs to the public, since the requirement is only on vehicle manufacturers to sell ZEV vehicles. However, there may be indirect costs on purchasers and the public. Manufacturers could pass on the costs to vehicle purchasers. For vehicle purchasers the upfront purchase costs of ZEVs are higher than those of conventional vehicles due to the higher battery costs, the need to install or have access to charging infrastructure, and higher vehicle registration costs for electric vehicles. However, the overall costs of the vehicles are offset by decreased operations and maintenance costs, such as through fewer to no oil changes and little to no engine maintenance needed. It is also anticipated the initial cost of the vehicles will decrease over time, as battery costs decline and production costs decrease due to economies of scale.

The total costs of ownership vary depending upon when the vehicle is sold, the costs are higher for vehicles sold in 2026 at the start of the proposed regulatory requirement as opposed to the 2035 model year. This is because the price of the vehicles is lower due to technological efficiencies and improvements. Costs can also vary depending upon whether a vehicle owner has a home charger or must charge elsewhere. Home charging incurs an additional capital cost to install a charger and any necessary electrical upgrades but may experience lower fuel costs due to cheaper residential electricity. CARB analyzed the costs of ZEVs over a 10-year period and determined for a 300-mile range passenger car battery electric vehicle (BEV), the operational savings offsets any initial costs and would be realized within the first year of ownership and the savings could be between \$3,000-\$4,200 over ten years.<sup>10</sup> For a vehicle purchased in the 2035 model year, the cost savings is immediate and the cumulative savings is between \$7,500-\$8,800 over ten years. For fuel cell EVs and plug-in hybrid EVs (PHEVs), neither type of vehicle will have a payback within a ten-year period. DEQ anticipates these cost savings in Oregon will be similar to or slightly higher than those realized in California because Oregon's electricity costs are lower than California's. Cumulatively, the total savings to car owners could total \$675 million over ten years through 2040, based on the projected vehicle turnover.

### **Large businesses - businesses with more than 50 employees**

Large businesses, specifically light-duty vehicle manufacturers, are directly affected by the proposed rules. But there are not any vehicle manufacturers operating in Oregon. Other large business in Oregon, such as utilities, vehicle dealers, electric vehicle service providers and parts manufacturers may see benefits as a result of increased sales of electric vehicles and the parts, charging facilities and electricity needed to support these vehicles.

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<sup>10</sup> Advanced Clean Cars II, Initial Statement of Reasons, CARB, 2022



## Vehicle Manufacturers

Per CARB's analysis on the effect of the ACC II rules on large businesses, it is anticipated Oregon's rules would affect the same entities. CARB estimates 17 manufacturers sell vehicles affected by the rules, and DEQ concludes that is also true for Oregon.

### ZEV Requirements

Vehicle manufacturers must annually produce an increasing minimum percentage of their fleet that are ZEVs and PHEVs that meet specific requirements. Manufacturers will incur a cost for the battery and other non-battery ZEV components as well as a cost to reconfigure existing automobile production facilities or to build new ZEV factories, but not incur costs associated with the parts and engine for producing a gasoline vehicle. Battery costs, overall, represent the largest portion of a manufacturer's costs to produce and deliver ZEVs. CARB's analysis determined battery costs have continued to decline since 2010 and is expected to continue to decline due to improved and simplified battery cell and pack designs, new battery chemistries, new manufacturing techniques, and increasing production volumes.<sup>11,12</sup> Manufacturers are also anticipated to experience cost reductions due to fewer parts to assemble in the production of ZEVs compared to gasoline vehicles. Additional costs incurred by the manufacturer include the requirements to meet the ZEV assurance measures such as battery warranty, battery labeling, durability, charging standardization, and convenience cords. Some of the manufacturers producing ZEVs or gasoline vehicles are already meeting these requirements and may not incur additional costs. Overall, the cost to manufacturers will be high per vehicle in the early years, but significantly decrease over time by 2035. Between 2026 and 2040, the proposed rule is estimated to result in additional costs to businesses of up to \$3 billion.

There are some vehicle manufacturers who may benefit from the proposed rules, such as manufacturers that already produce and manufacture ZEVs. ZEV-only manufacturers can benefit by generating additional ZEV credits through overcompliance. These credits can be sold to other manufacturers who need to meet their compliance obligations.

### LEV Requirements

Manufacturers who continue to produce gasoline vehicles are anticipated to incur minimal costs. This is due to the fact that the fleet average requirements remain the same and have been accounted for in previous LEV rulemakings. Additionally, the requirement to clean up the highest emitting vehicles in the fleet affects only a small percentage of the fleet as over 90% of the overall vehicle fleet meet the emission targets. Per California's analysis, any additional controls, hardware, or calibration needed to ensure compliance with the emissions standard is anticipated to incur a combined average incremental cost of \$3 per vehicle to upgrade the vehicle technology. These costs are likely to be passed down to the consumer.

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<sup>11</sup> Bloomberg New Energy Finance. 2020. "Battery Pack Prices Cited Below \$100/kWh for the First Time in 2020, While Market Average Sits at \$137/kWh." December 16, 2020. Accessed March 22, 2022. <https://about.bnef.com/blog/battery-pack-prices-citedbelow-100-kwh-for-the-first-time-in-2020-while-market-average-sits-at-137-kwh/>

<sup>12</sup> NAS 2021. National Academies of Sciences, Engineering, and Medicine. 2021. Assessment of Technologies for Improving Light-Duty Vehicle Fuel Economy—2025-2035. Washington, DC: The National Academies Press. March 31, 2021. Accessed August 1, 2022. <https://doi.org/10.17226/26092>.

## **ZEV components and infrastructure businesses**

Vehicle service providers, such as those that supply parts and batteries to auto manufacturers could benefit from the proposed regulation due to increased demand for their equipment. EV battery suppliers will see their sales continue to increase as more and more vehicles switch from gasoline powered engines to battery powered engines. Conventional gasoline vehicle providers may see a decline in business as new gasoline vehicles are phased out but could transition their business to include electric vehicle components to supply ZEVs.

Electric utilities will benefit from the proposed rules through the increased use of electricity required to power the vehicles. According to CARB, electricity generation and installation of infrastructure needed to charge BEVs and PHEVs represents the single largest growth area for electric utility companies.<sup>13</sup> Utilities can also earn credit under Oregon's Clean Fuels Program and monetize those credits for future EV infrastructure development or vehicle purchase.

ZEV infrastructure businesses may also benefit from the proposed regulations. This includes companies that manufacture, install, operate, and maintain EV charging stations and hydrogen dispensing equipment. Electric Vehicle Supply Equipment (EVSE) providers, and hydrogen station operators will all benefit from increased demand for their equipment with home and public fueling stations. The proposed rules will result in increased use of charging stations, thus generating revenue for these businesses. Additionally, infrastructure providers could also earn credit under Oregon's Clean Fuels Program and be able to monetize those credits for future electric vehicle purchases or charging station installations.

Overall, because vehicle manufacturers directly affected by this rule must already meet California's adopted ACC II program requirements, it is anticipated the additional direct cost of compliance in Oregon could be as much as \$3 billion. Additionally, not all manufacturers will be affected in the same way, as all ZEV-only manufacturers may benefit through overcompliance and subsequently monetize any credits earned. For other large businesses because these impacts are indirect and depend on the decisions of these businesses on how they want to engage in the infrastructure, power supply, and ZEV components DEQ is unable to estimate the amount of these indirect costs.

## **Small businesses – businesses with 50 or fewer employees**

### **a. Estimated number of small businesses and types of businesses and industries with small businesses subject to proposed rule.**

Under the proposed ACC II rules, there are no small businesses directly affected by the rules, as all the vehicle manufacturers subject to the requirements have more than 50 employees.

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<sup>13</sup> CARB SRIA for the ACC II, March 2022

However, other small businesses, such as local auto repair shops, businesses that maintain vehicle fleets, or auto dealers may experience indirect costs as a result of the proposed rule.

#### Auto repair shops

DEQ estimates the number of auto repair shops that are small businesses in Oregon could be 1,883, based on industry information. ZEVs have fewer mechanical propulsion parts compared to their gasoline counterparts. Because ZEVs do not have valves, springs, gears or other systems that could wear down or break upon use they require fewer repairs and subsequently less potential business for vehicle repair shops. These vehicle shops could experience a negative fiscal impact including dealerships that have service departments, as ZEVs become a greater portion of the fleet. This trend would suggest that the number of businesses providing the services may decrease along with the reduced demand, over time. However, if these vehicle shops transition to repair and maintenance for battery electric vehicles they may be able to mitigate such impacts.

Small businesses may see indirect impacts as a result of the proposed rule if they choose to purchase ZEV vehicles. The total cost of ownership for ZEVs results in savings for the fleet owner, resulting in almost \$5,500 in savings after 10 years of ownership. The ZEV assurance measures would help owners of small fleets by reducing costs for vehicle repairs during the time the vehicle is under warranty. The durability requirements for EVs would also ensure the vehicles have fewer breakdowns and result in less downtime for small fleet owners.

Because these impacts are indirect and depend on the decisions of individual small auto repair shop owners as to whether they will transition to ZEV repair shops or whether small businesses will purchase vehicles for a new or existing fleet, DEQ is unable to estimate the amount of these indirect costs.

#### LEV Rule

Under the LEV rules, small businesses that manufacture components used for gasoline vehicles could be affected. These impacts on small businesses would be the same as the LEV rules impacts described in the impacts to large businesses section above.

#### **b. Projected reporting, recordkeeping and other administrative activities, including costs of professional services, required for small businesses to comply with the proposed rule.**

Under the proposed rules, no additional activities are required of small businesses to comply with the proposed rules. Only large automobile manufacturers are regulated.

#### **c. Projected equipment, supplies, labor and increased administration required for small businesses to comply with the proposed rule.**

Under the proposed rules, no additional activities are required of small businesses to comply with the proposed rules. Only large automobile manufacturers are regulated. The ACC II rules

may result in benefits to small business as a result of more ZEVs being available. Infrastructure buildout, including the need for electricians, construction companies, EVSE suppliers, and maintenance companies could create a demand for jobs and services by small businesses.

**d. Describe how DEQ involved small businesses in developing this proposed rule.**

DEQ consulted with small businesses and included organizations that represented small businesses on the Advanced Clean Cars II Rule Advisory Committee that advised DEQ on the cost of compliance for small businesses.

**State agencies**

DEQ does not anticipate a direct fiscal impact to state agencies other than DEQ as a result of the rules. The proposed rule requires manufacturers to produce and deliver a certain percentage of ZEVs in Oregon and submit annual information on its sales reporting, credit transfer information and credit declaration. DEQ already tracks and reviews this information under the existing LEV/ZEV program and will continue to do so. There may be some initial additional work by DEQ to help establish and work with auto manufacturers to determine how they can earn environmental justice values. DEQ does not anticipate its fiscal impact to be beyond this limited additional work.

To the extent that these rules are successful in increasing the number of ZEV vehicles and it decreases the amount of motor vehicle fuel purchased in Oregon, this could impact state fuel tax revenues and the state agencies and programs that rely on them.

State agencies who purchase vehicles for their fleets may also experience initial costs from the proposed rules. State agencies may have to initially pay a higher upfront cost to purchase the vehicle, as well as incur costs to build out and install the infrastructure necessary to charge the vehicles, upgrade existing charging infrastructure to ensure it can meet charging capacity needs, workforce training, and maintenance. However, over the lifetime of the vehicle it is also estimated there are lower operating costs over time. Charging infrastructure costs could be mitigated by Oregon's Clean Fuels Program, where credits generated by fleet operators, if they own their chargers, could be sold to fund electric vehicle and future infrastructure investments.

**Local governments**

Impacts on local governments are expected to be the same as the impacts on state agencies with regards to any fleet purchases. The fuel tax revenue impacts could also affect local government revenues and programs that rely on that funding source.

## Documents relied on for fiscal and economic impact

Document title	Document location
2020 OGWC Biennial Report to Legislature	<a href="https://static1.squarespace.com/static/59c554e0f09ca40655ea6eb0/t/5fe137fac70e3835b6e8f58e/1608595458463/2020-OGWC-Biennial-Report-Legislature.pdf">https://static1.squarespace.com/static/59c554e0f09ca40655ea6eb0/t/5fe137fac70e3835b6e8f58e/1608595458463/2020-OGWC-Biennial-Report-Legislature.pdf</a>
CARB Initial Statement of Reasons for the Advanced Clean Cars II rule	<a href="https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/accii/isor.pdf">https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/accii/isor.pdf</a>
CARB Standardized Regulatory Impact Assessment (SRIA)	<a href="https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/accii/appc1.pdf">https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/accii/appc1.pdf</a>
Assessment of Technologies for Improving Light Duty Vehicle Fuel Economy 2025-2035	<a href="https://doi.org/10.17226/26092">https://doi.org/10.17226/26092</a> .
Battery Pack Prices Cited Below \$100/kWh for the First Time in 2020, while Market Average Sits at \$137/kWh	<a href="https://about.bnef.com/blog/battery-pack-prices-citedbelow-100-kwh-for-the-first-time-in-2020-while-market-average-sits-at-137-kwh/">https://about.bnef.com/blog/battery-pack-prices-citedbelow-100-kwh-for-the-first-time-in-2020-while-market-average-sits-at-137-kwh/</a>
Bloomberg New Energy Finance. 2020. “Battery Pack Prices Cited Below \$100/kWh for the First Time in 2020, While Market Average Sits at \$137/kWh.”	<a href="https://about.bnef.com/blog/battery-pack-prices-citedbelow-100-kwh-for-the-first-time-in-2020-while-market-average-sits-at-137-kwh/">https://about.bnef.com/blog/battery-pack-prices-citedbelow-100-kwh-for-the-first-time-in-2020-while-market-average-sits-at-137-kwh/</a>
1NAS 2021. National Academies of Sciences, Engineering, and Medicine. 2021. Assessment of Technologies for Improving Light-Duty Vehicle Fuel Economy—2025-2035. Washington, DC: The National Academies Press. March 31, 2021.	<a href="https://doi.org/10.17226/26092">https://doi.org/10.17226/26092</a> .
Social Cost of Greenhouse Gases Annual Values, The White House, OMB, February 2021	<a href="https://www.whitehouse.gov/omb/information-regulatory-affairs/regulatory-matters/#scghgs">https://www.whitehouse.gov/omb/information-regulatory-affairs/regulatory-matters/#scghgs</a>
Technical Support Document: Social Cost of Greenhouse Gases for Regulatory Impact Analysis and Other Areas of Policy Decision-Making	<a href="https://www.whitehouse.gov/omb/information-regulatory-affairs/regulatory-matters/#scghgs">https://www.whitehouse.gov/omb/information-regulatory-affairs/regulatory-matters/#scghgs</a>

## Advisory committee fiscal review

DEQ appointed an advisory committee.

As ORS 183.33 requires, DEQ will ask for the committee's recommendations on:

- Whether the proposed rules would have a fiscal impact,
- The extent of the impact, and
- Whether the proposed rules would have a significant adverse impact on small businesses; if so, then how DEQ can comply with ORS 183.540 reduce that impact.

The committee will review the draft fiscal and economic impact statement and provided feedback on the overall analysis provided by DEQ.

## Housing cost

DEQ determined the proposed rules will have no direct impact on the development cost of a 6,000-square-foot parcel and construction of a 1,200-square-foot detached, single-family dwelling on that parcel because the proposed rules only affect vehicle manufacturers. However, there is the potential for an indirect effect on housing development costs because the rules could influence the price of materials and/or services used in housing construction. For example, electric vehicle purchasers may choose to install a vehicle charger to charge their vehicle. There could be an increase in demand for chargers and electricians to install these devices. Because these impacts are indirect, and depend on the individual decisions of homeowners before resulting in housing cost increases, DEQ is unable to estimate the amount of these indirect costs.

## Alternative formats

Documents can be provided upon request in an alternate format for individuals with disabilities or in a language other than English. To request a document in another format or language, call DEQ in Portland at 503-229-5696, or toll-free in Oregon at 1-800-452-4011, ext. 5696; or email [deqinfo@deq.oregon.gov](mailto:deqinfo@deq.oregon.gov).