2024 Tax Preference Review:

Alternative fuel vehicles and infrastructure

24-05 FINAL REPORT | DECEMBER 2024

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Legislative Auditor's conclusion

Alternative fuel vehicles and associated infrastructure increased in Washington. The effect of the preferences is unclear because changes in the market and increased state and federal incentives also influence adoption.

Key points

- The 2019 Legislature created or amended eight tax preferences intended to increase the number of alternative fuel vehicles (AFVs) in Washington.
- The Legislature's intent has been met: The number of AFVs in Washington has grown 230%, regardless of limits on tax preference eligibility and decreasing exemption amounts. There are more public chargers, zero-emission buses, and alternative fuel commercial vehicles and infrastructure today than in 2019.
- It is not possible to isolate the impact of these preferences on this growth.
- Funding at the state and federal level promoting AFVs, zero-emission buses and associated infrastructure has increased by hundreds of millions of dollars since 2019.
- This review provides the first accounting of the use of these preferences since they were enacted.

About this preference

Estimated savings: $98 million (2023-25 biennium)
Expiration date: 2025 or when limit is reached

Tax type: Multiple taxes
Applicable statute(s): Multiple

Executive summary

Eight preferences intended to increase use of alternative fuel vehicles

In 2019, the Legislature enacted, extended, or expanded eight tax preferences, with the shared objective to increase the use of clean alternative fuel vehicles in the state.

- Sales and use tax exemption for alternative fuel vehicles (AFVs).
- Business and occupation (B&O) and public utility tax (PUT) exemptions for commercial vehicles and infrastructure (4 preferences).
- Sales and use tax exemption for zero-emission buses.
- Sales and use tax exemption for electric vehicle batteries, fuel cells, and infrastructure.
- Leasehold excise tax exemption for use of public land for electric vehicle infrastructure.

Each preference has either a 2025 expiration date or an expiration contingency.

Figure 1: Estimated beneficiary savings in the 2023-25 biennium from all preferences is $98 million

Note: Taxpayer savings for the leasehold excise tax exemption for electric vehicle infrastructure on public lands is indeterminate

Source: JLARC staff analysis of DOR data, other sources

The number of alternative fuel vehicles in Washington has grown 230%, regardless of limits on tax preference eligibility and decreasing exemption amounts.

The Department of Licensing (DOL) reports that 167,000 alternative fuel vehicles were registered in Washington as of December 2023. This is 230% higher than the 51,000 in August 2019, when the alternative fuel vehicle preference became available. This increase suggests the Legislature's policy objective has been met, although it is not possible to isolate the impact of these tax preferences.

Statute limits which AFVs are eligible for the preference based on sales price (i.e., up to $45,000 for new vehicles, $30,000 for used). Joint Legislative Audit and Review Committee (JLARC) staff estimate that 73% of AFVs registered in Washington since 2019 would not have qualified for the preference. For new vehicle sales, statute also lowers the amount exempt from taxation every two years. The value today is 40% less than in 2019.

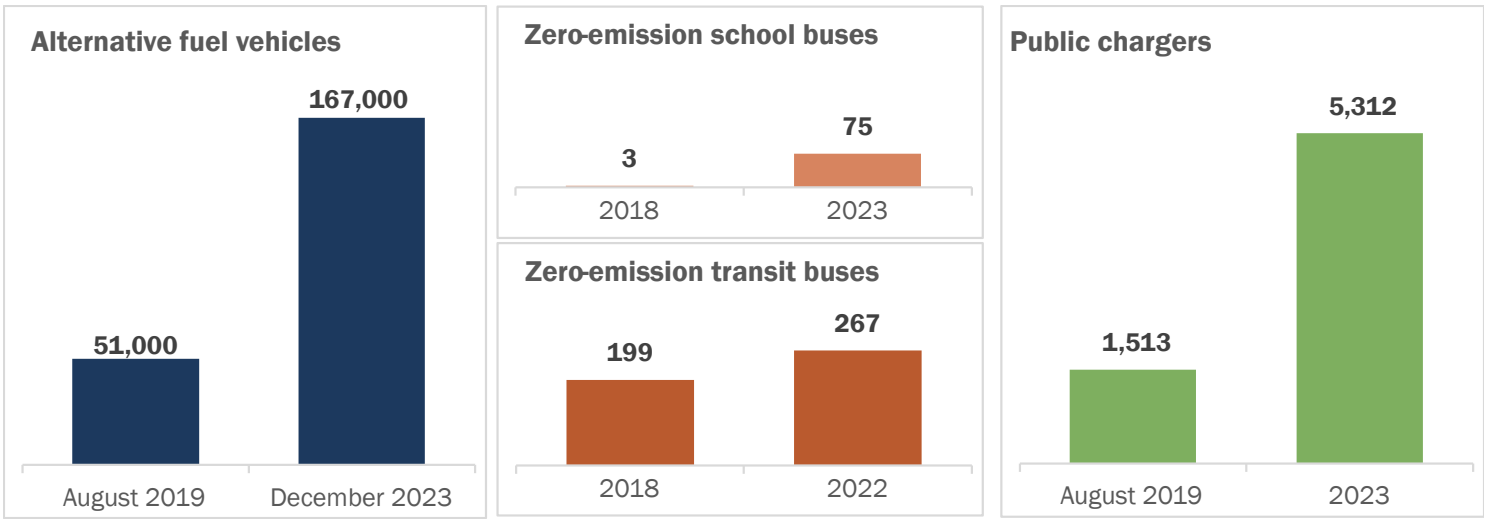
Market changes may be encouraging adoption. The Department of Ecology (Ecology) notes the price gap between EVs and vehicles with internal combustion engines has narrowed, and that the number of electric vehicle models has given consumers greater choice. In addition, vehicles have a longer driving range and faster charging, and charging stations are more widely available.

There are more charging stations, zero-emission buses, and alternative fuel commercial vehicles and infrastructure

The other tax preferences in this report incent the purchase and establishment of zero-emission buses, commercial alternative fuel vehicles, and electric vehicle infrastructure. Each preference has been used.

- 47 businesses claimed $7.7 million in B&O tax and PUT credits to acquire commercial vehicles and associated charging infrastructure.
- The number of zero-emission school buses increased by 72 since 2018. Metro and transit agencies increased zero-emission bus fleets by 68 since 2018.
- Electric vehicle charging infrastructure increased 251% to more than 5,300 publicly available chargers statewide.
- Businesses used the commercial vehicle preferences to purchase more than 280 commercial alternative fuel vehicles since 2019. The number that existed before the preference is unknown.

Figure 2: The number of alternative fuel vehicles, zero-emission buses, and chargers increased



Source: JLARC staff analysis of multiple data sources -- DOL, Office of the Superintendent of Public Instruction (OSPI), Federal Transit Administration, and Federal Alternative Fuels Data Center

Since 2019, the Legislature has directed and funded multiple programs to promote electric vehicles and infrastructure

In 2022, the Legislature passed ESSB 5974 (Ch. 182, Laws of 2022). The law sets a nonbinding state target that all vehicles of model year 2030 or later be electric if they are sold, purchased, or registered in

Washington. The same bill created the Electric Vehicle Coordinating Council, which is co-chaired by the Washington Departments of Commerce and Transportation.

- The council published the state's **Transportation Electrification Strategy** in January 2024 (**Appendix C**). The strategy recommends actions necessary to accomplish the state's emission reduction goals and to implement current policies successfully and equitably. The strategy includes references to the tax incentives in this report. For example, it notes barriers for consumers and the need for better alignment with federal incentives.
- The council is directed to identify all electric vehicle infrastructure grant-related funding. The Department of Commerce (Commerce) identifies $221 million in charging and fueling investments and $301 million in on-road vehicle investments for 2023-2025. These amounts are in addition to the value of the tax preferences in this report.

The state also has adopted vehicle emission standards, established grant programs to help purchase zero-emission buses, and funded state agency efforts to build electric vehicle infrastructure.

Federal incentives also encourage use of AFVs, zero-emission buses, and associated infrastructure

The federal government has invested in transportation electrification:

- The Bipartisan Infrastructure Law (2021) funds electric vehicle charging stations, including the National Electric Vehicle Infrastructure (NEVI) Formula Program ($5 billion) and the Discretionary Grant Program for Charging and Fueling Infrastructure ($2.5 billion). The law also funds initiatives including electric school buses and ferries, port electrification, a domestic supply chain for battery production, and battery recycling.
- The Inflation Reduction Act (2022) includes provisions to expand existing federal tax credits, grants to support domestic electric vehicle production, and grants to acquire zero-emission heavy duty vehicles.
- In 2023 the U.S. Department of Energy selected the Pacific Northwest as a regional clean hydrogen hub, making the region (WA, OR, MT) eligible for up to $1 billion in federal funds over 9 years to accelerate the transition to clean hydrogen production and use.
- Federal tax incentives may complement the state incentives and funds. For example, buyers may claim a federal tax credit of up to $7,500 for the purchase of qualifying new electric vehicles and businesses can claim tax credits up to $40,000 when buying qualified commercial clean vehicles.

Legislative Auditor's recommendation

The Legislature should determine whether to continue the eight tax preferences, and at what level, before four of them expire in 2025.

In making this determination, the Legislature should consult with the Electric Vehicle Coordinating Council if considering amendments. The preferences were enacted before the council was established and before it

developed the state Transportation Electrification Strategy. Its member agencies administer related state and federal grant programs. This expertise could help inform policy decisions related to the tax preferences.

The Department of Commerce concurs with the recommendation. You can find additional information in the **Recommendations section**.

Commissioner's Recommendation

The commission endorses the Legislative Auditor's recommendation with comment.
When determining whether to continue the preferences, the Legislature should 1) consider the Department of Commerce's recommendation to centralize incentive programs to improve clarity, ease of access, and efficiency, and 2) explore the Department of Commerce's suggestion to shift resources from a tax exemption to a rebate program. Increased clarity, ease of access, and efficiency should increase levels of participation in all programs and the public benefit return on investment.

Committee action to distribute report

On December 4, 2024 this report was approved for distribution by the Joint Legislative Audit and Review Committee. Action to distribute this report does not imply the Committee agrees or disagrees with Legislative Auditor recommendations.

Part 1.
Eight preferences

The 2019 Legislature enacted, extended, or expanded eight tax preferences. Their objective is to increase the use of clean alternative fuel vehicles in the state.

The preferences include sales tax exemptions, B&O tax and PUT credits, and a leasehold excise tax exemption. All have a scheduled or contingent expiration date. **Appendix A** provides more information about each preference.

The most-used preference offers a sales and use tax exemption to those who buy alternative fuel vehicles

- Alternative fuel vehicle purchases and leases: This sales and use tax exemption applies to sales or leases before August 1, 2025. JLARC staff estimate it will save buyers $53.2 million in 2023-25 biennium. **(Part 2)**

Four preferences offer B&O and public utility tax credits for vehicles and infrastructure

- Commercial clean alternative fuel vehicles (2 preferences): The Department of Revenue (DOR) issued $4.9 million in credits for 281 alternative fuel commercial vehicles through December 2023. JLARC staff estimate beneficiaries will save $1.8 million in the 2023-25 biennium. **(Part 3)**
- Commercial clean alternative fuel vehicle infrastructure (2 preferences): DOR issued $8.4 million in credits through December 2023. JLARC staff estimate beneficiaries will save $5 million in the 2023-25 biennium. **(Part 3)**
- All four preferences can be claimed until the combined total of credit claims reach $32.5 million.

One preference offers a sales and use tax exemption for zero-emission buses

- Zero-emission bus purchases: This sales and use tax exemption expires July 1, 2025. JLARC staff estimate it will save buyers $31.7 million in the 2023-25 biennium. **(Part 4)**

Two preferences offer exemptions for batteries, fuel cells, and infrastructure

- Electric vehicle batteries, fuel cells, and infrastructure: This sales and use tax exemption expires July 1, 2025. JLARC staff estimate it will save buyers $6.3 million in the 2023-25 biennium. **(Part 5)**
- Use of public land for electric vehicle infrastructure: This leasehold excise tax exemption expires July 1, 2025. Beneficiaries do not separately report use of the preference, so the savings for this preference is indeterminate. DOR estimates that taxpayer savings for this preference are minimal. **(Part 4)**

Figure 3: Estimated beneficiary savings in the 2023-25 biennium from all preferences is $98 million

Note: Taxpayer savings for the leasehold excise tax exemption for electric vehicle infrastructure on public lands is indeterminate

Source: JLARC staff analysis of DOR, OSPI, and Federal Transit Administration and Department of Energy data

Part 2.
Alternative fuel vehicles

People who buy or lease certain clean alternative fuel vehicles can use this sales and use tax exemption.

- The exemption applies to new or used passenger cars, light duty trucks, or medium duty passenger vehicles.
- The sale price may not exceed $45,000 for new vehicles and $30,000 for used vehicles. For leases, the vehicle's fair market value may not exceed these limits.
- The alternative fuel vehicle (AFV) must be either:
    - Powered only by a clean alternative fuel such as natural gas, propane, hydrogen, or electricity, such as a battery electric vehicle (BEV), or
    - A plug-in hybrid vehicle (PHEV) that can travel at least 30 miles on battery power alone.

The preference took effect August 1, 2019. It may be used for sales or leases that occur before August 1, 2025. For leases started before August 1, 2025, the exemption may apply to lease payments until August 1, 2028.

Exemption reduces total purchase cost

Buyers do not pay sales and use tax on a portion of the purchase price. For used vehicles, up to $16,000 is exempt. For new vehicles, the maximum portion that is exempt from tax decreases every two years:

- From August 2019 through July 2021: $25,000.
- From August 2021 through July 2023: $20,000.
- From August 2023 through July 2025: $15,000.

The example in Figure 2 assumes a buyer purchased a new alternative fuel vehicle between August 2023 and July 2025. Assuming a $40,000 sales price and 10% combined state and local sales tax, the preference could save a buyer $1,500.

Figure 4: Exemption reduces total cost

	AFV sales price	Exempted amount	Amount to be taxed	Tax paid (see note)	Total purchase cost
Without exemption	$40,000	$0	$40,000	$4,000	$44,000
With exemption	$40,000	$15,000	$25,000	$2,500	$42,500
Taxpayer Savings				$1,500	

Note: Assumes a combined sales and use rate of 10%, including a state tax rate of 6.5%, a local sales tax rate of 3.2%, and the additional motor vehicle sales tax of 0.3%

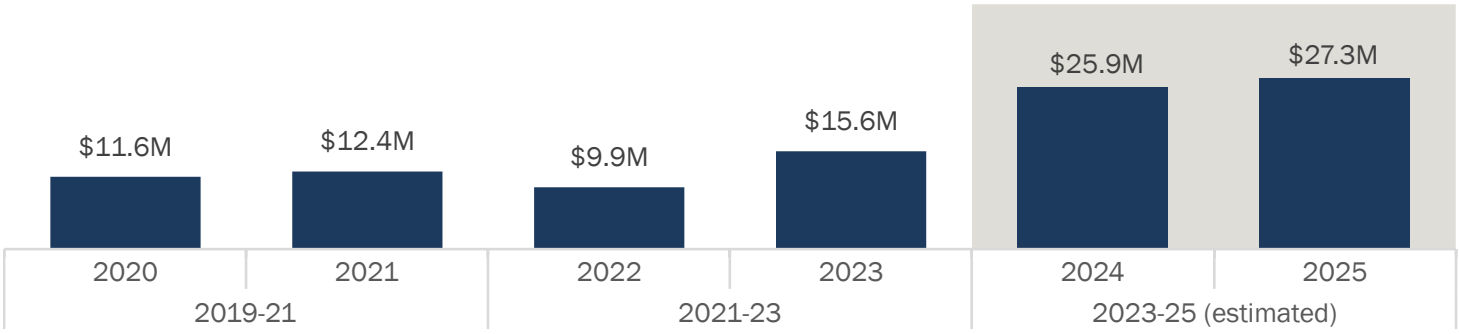
Source: JLARC staff analysis

Preference will save beneficiaries an estimated $53.2 million in the 2023-25 biennium

Between August 2019 and December 2023, 40,231 alternative fuel vehicles were purchased or leased using the preference. They were split evenly between new and used vehicles.

In this time, total tax savings were just over $43 million. As described below, use of alternative fuel vehicles is increasing. JLARC staff expect the number of exempt purchases and leases to grow as well and estimates that beneficiary savings during the 2023-25 biennium will be $53.2 million.

Figure 5: Beneficiary savings from alternative fuel vehicles sales and use tax exemption is expected to increase



Source: JLARC staff analysis of DOR data

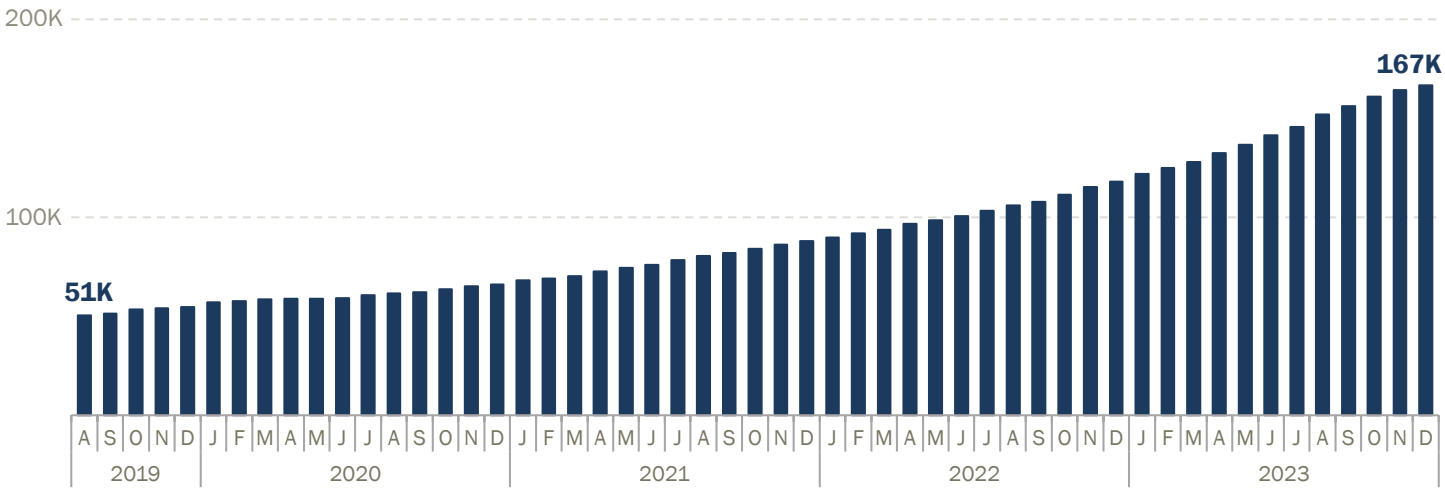
Use of alternative fuel vehicles in Washington is increasing

The legislative objective of the preferences is to increase the use of clean alternative fuel vehicles in Washington.

Data from the Department of Licensing shows:

- The number of AFVs in Washington increased 230% since the preference took effect in 2019, from 51,000 to 167,000 (Figure 4). Most of these vehicles are either battery electric vehicles (BEVs) or plug-in hybrid vehicles (PHEVs). BEVs increased by 280%, more than twice the growth of PHEVs.
- AFVs comprise a growing share of new registrations. In 2020, they accounted for 3.9% of new registrations. By 2023, the share grew to 13.5%.

Figure 6. Alternative fuel vehicle registered in Washington increased 230% since August 2019



Source: JLARC staff analysis of monthly data from the Department of Licensing

About 30% of vehicles potentially eligible for exemption are registered in census tracts with incomes below the median

The prime sponsor of the 2019 bill that created the preference stated that they intended to encourage lower- and middle-income residents to purchase alternative fuel vehicles.

DOL's data on alternative fuel vehicles does not indicate whether a vehicle benefited from the tax preference when it was sold or leased.

- Using available data on the sale type, sale price, and the manufacturer's suggested retail price of each vehicle, JLARC staff estimate that 27% of the AFVs registered in Washington between 2019 and 2023 might have qualified for the preference.

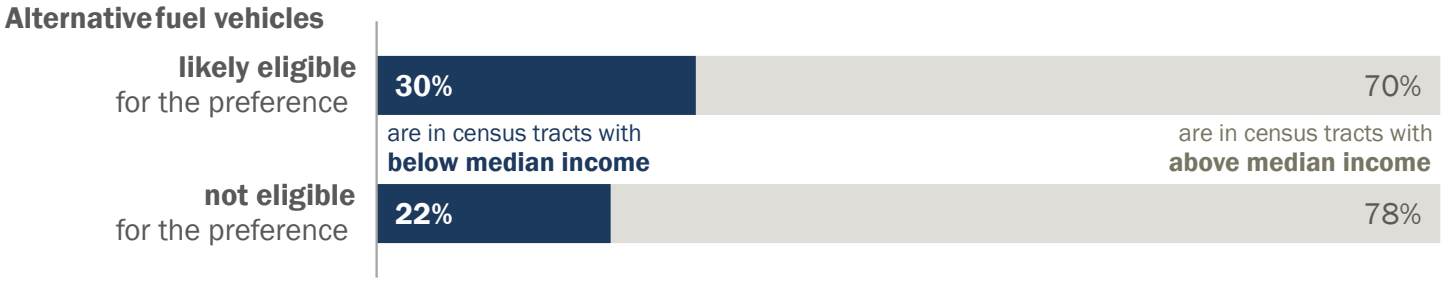
DOL's data also does not include information about the incomes of people who bought the vehicles.

- For this analysis, JLARC staff divided census tracts into two groups based on the median income. JLARC staff then evaluated where the AFVs in Washington are registered. While this data does not tell us specific information about buyers' income, it does illustrate trends in vehicle registrations by census tracts with different median incomes.

JLARC staff analysis suggests that registrations of AFVs tend to be more concentrated in census tracts with higher median incomes. However, AFVs that likely qualify for the exemptions are more likely than others to be registered in areas with below-median incomes.

- Of the alternative fuel vehicles that are likely eligible for the preference:
  - About 30% are registered in areas with median incomes below that of the median census tract, $89,600.
  - 70% are registered in census tracts with median incomes above $89,600.
- Of the higher-cost vehicles that are not eligible for the preference:
  - 22% are registered in census tracts with below-median incomes.
  - 78% of these vehicles are registered in tracts with above-median incomes.
- Census tracts with the higher rates of AFVs per capita tend to include the state's population centers, which are more densely populated and have more charging stations.

Figure 7: Washington AFV registrations classified by area median household income



Source: JLARC staff analysis of 2022 ACS, DOL Electric Vehicle Title and Registration Activity data

Census tracts with the highest and lowest number of AFV registrations had different racial and ethnic composition

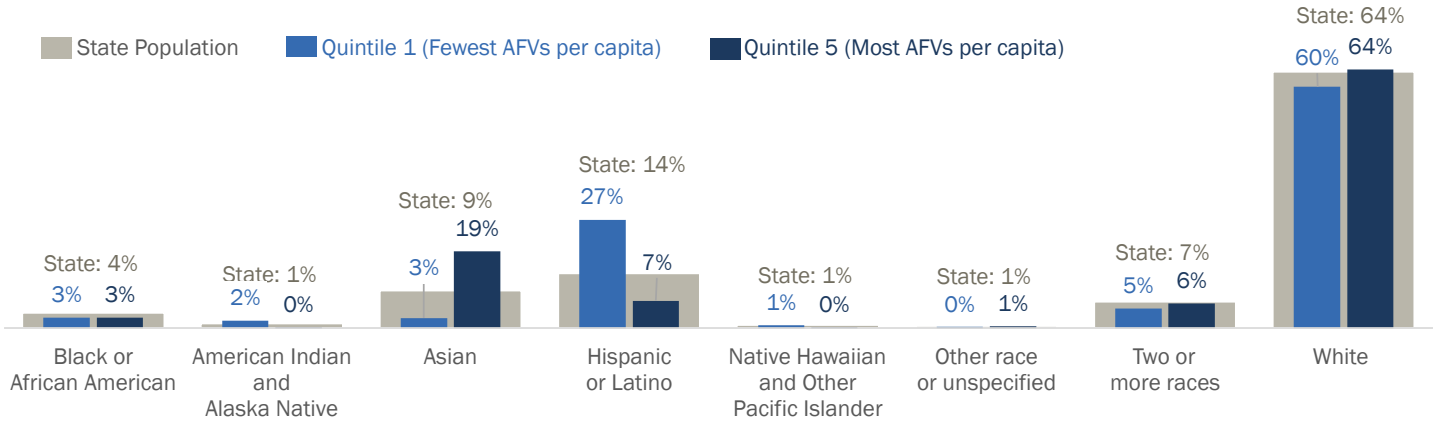
JLARC staff also used census data to describe the demographics of the Washington census tracts in which the AFVs are registered.

- This race and ethnicity data summarizes the demographics of census tracts with different rates of per-capita AFV registrations.
- The data specific to the buyers of AFVs is not available.

For this analysis, JLARC staff divided census tracts into five groups (quintiles) based on the number of AFVs per capita. Census tracts in Quintile 1 have the fewest AFVs per capita and those in Quintile 5 have the most. These groups differ from those used for the median income analysis above.

- Quintile 1 has a lower percentage of Asian residents than Quintile 5 (3% versus 19%).
- Quintile 1 has a higher percentage of Hispanic or Latino residents than Quintile 5 (27% versus 7%).
- Other races and ethnicities showed less variation between the quintiles.
- For more detail, see **Appendix B**.

Figure 8: Census tracts with the highest and lowest number of AFV registrations had different racial and ethnic composition



Source: JLARC staff analysis of 2022 ACS, DOL Electric Vehicle Title and Registration Activity data

Interactive map offers additional detail about vehicle registrations, income, and population

Appendix B includes an interactive map that shows details for each census tract such as the number of alternative fuel vehicles per 1,000 people, area median income, and population by race and ethnicity.

Impact of preference on AFV adoption is unclear

The preference is intended to encourage adoption of clean alternative fuel vehicles in Washington. Beneficiaries are using it and buying or leasing AFVs. However, the preference's effect on the increased vehicle registrations is unclear because many other factors exist.

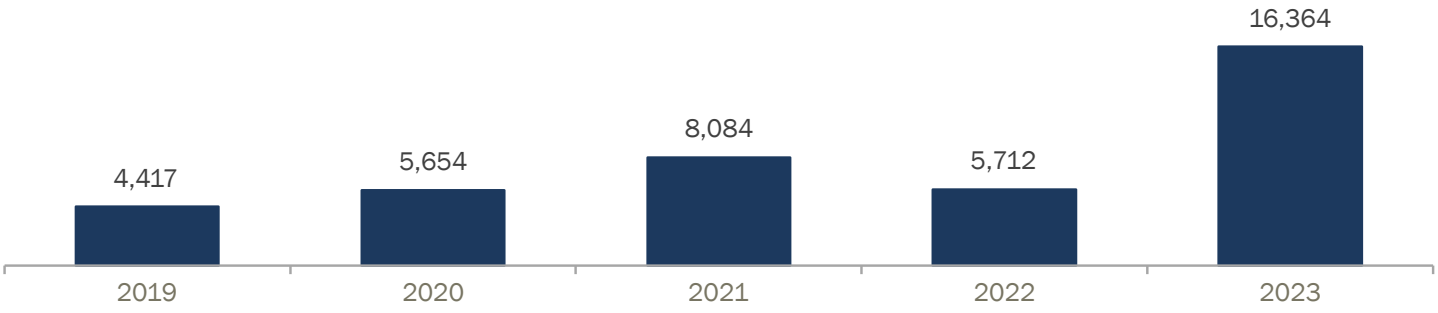
AFV adoption continues despite diminishing value of sales and use tax exemption

The number of alternative fuel vehicles grew 230% since the sales and use tax preference began in August 2019. While academic research suggests a positive relationship between monetary incentives and electric car adoption, two points suggest the sales and use tax preference is not the only factor affecting this increase in EV adoption.

- **Not all AFVs are eligible for the preference**. JLARC staff estimate that 73% of AFVs in Washington would not have qualified for the preference because their selling price is too high.
- **The value of the preference is diminishing.** The increase in all AFVs occurred even as the amount of the purchase price that may be deducted declined by 40%.
    - From August 2019 through July 2021, $25,000 of the sale price could be deducted.
    - Beginning August 2023 through July 2025, only $15,000 may be deducted.

Despite this reduction in the value of the tax exemption, DOR data shows that beneficiaries claimed the preference for more than 16,000 alternative fuel vehicles in 2023. This data does not indicate where vehicles were registered.

Figure 9: Sales tax exemption claimed for more than 16,000 alternative fuel vehicles in 2023



Source: JLARC staff analysis of DOR alternative fuel vehicle report

Many other factors affect adoption of AFVs

Federal tax incentives: Federal incentives may complement the state incentives and funds, further encouraging purchases of electric vehicles. A federal tax credit of up to $7,500 may be claimed for the purchase of a qualifying new electric vehicle or hydrogen fuel cell electric vehicle. For used electric vehicles, a credit of up to $4,000 is available.

State policies: Policies intended to promote a transition to clean transportation include:

- An executive order (21.04) that established state vehicle fleet electrification targets.

- Legislation (ESSB 5974, Ch. 182, Laws of 2022) that:
    - Set a nonbinding target that all publicly or privately owned passenger and light-duty vehicles of model year 2030 or later that are sold, purchased, or registered in Washington will be electric vehicles.
    - Created the Electric Vehicle Coordinating Council, which published the state's Transportation Electrification Strategy for meeting the target.
- Adoption of California's vehicle emissions standards and compliance requirements.
    - These standards require that, by model year 2035, all sales of new passenger cars and light-duty trucks under 8,500 pounds must be zero-emission vehicles.

Other investments: Additional state and federal funds also may accelerate adoption. Commerce identifies $221 million in charging and fueling investments and $301 million in on-road vehicle investments for 2023-2025.

Price and variety: The Department of Ecology (Ecology) notes the price gap between electric vehicles and vehicles with internal combustion engines has narrowed, and that the number of models of electric vehicle has given consumers greater choice.

Technological changes: Increased electric vehicle driving range and faster charging can make these vehicles more attractive and expand their use.

Infrastructure improvement: As recognized in the transportation electrification strategy, a growing network for charging and fueling can make electric vehicle ownership practical in more parts of the state.

Part 3.
Commercial vehicles

Businesses can claim a **B&O tax or public utility tax (PUT)** credit when they:

- Buy commercial alternative fuel vehicles or convert existing vehicles to alternative fuel.
- Buy, construct, or install commercial alternative fuel vehicle infrastructure or tangible property that will become a component of the infrastructure. Infrastructure may include battery charging stations, rapid charging stations, hydrogen fueling stations, green electrolytic hydrogen production facilities, and renewable hydrogen production facilities.

For these tax preferences, "clean alternative fuel" is defined more broadly to also include dimethyl ether and methane in addition to electricity, hydrogen, propane, and natural gas.

Statute limits the amount of credit available

Both the B&O and PUT credits are subject to several statutory limits. They are summarized here, and details are in **Appendix A**.

For commercial alternative fuel vehicles:

- For purchases, the credit is capped based on weight and the incremental purchase cost compared to a similar conventionally fueled vehicle.
- For conversions, the credit may not exceed $25,000 or 50% of the conversion costs.
- Total credits each year may not exceed $2 million per weight class.
- No business may claim credits for more than 25 vehicles or more than $250,000 across all weight classes per year.

For commercial alternative fuel vehicle infrastructure:

- The credit may not exceed 50% of the eligible costs of the infrastructure.
- The credit is subject to a maximum annual credit amount of $2 million.

The total of B&O tax and PUT credits for vehicles and infrastructure is further capped:

- Credits cannot exceed $6 million per year.
- Credits issued by DOR cannot exceed $32.5 million total since July 15, 2015. Although the preference does not have an expiration date, the preference becomes unavailable once this cap is reached.

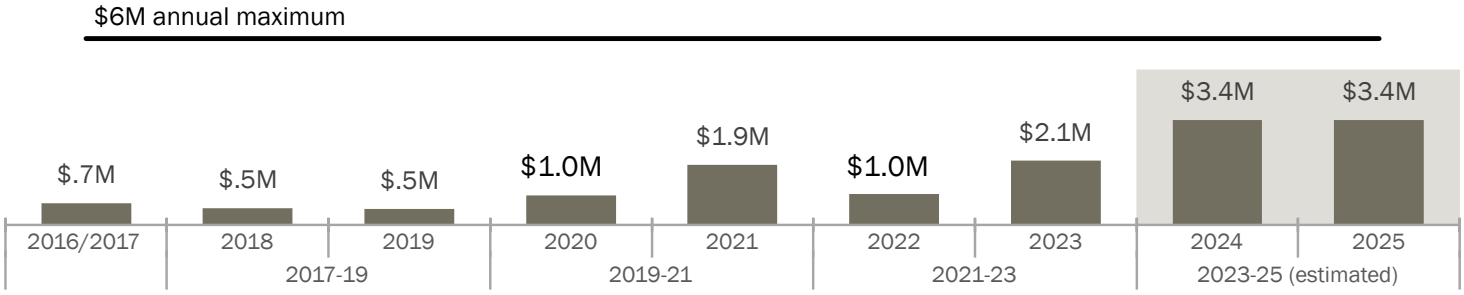
Businesses will save an estimated $6.8 million in 2023-25 biennium

After DOR issues a credit, a business must claim it in the year it is earned or the following year. The following information is for both the B&O and PUT credits.

- **Vehicle credits:** DOR issued a total of $4.9 million in credits since the preference became available in 2015. To date, 40 businesses have claimed a combined $4.8 million in credits for 281 commercial vehicles.
- **Infrastructure credits:** DOR has issued a total of $8.4 million in alternative fuel vehicle commercial infrastructure credits. To date, seven businesses have claimed $3.0 million.

JLARC staff estimate that credit claims will grow in the future, although they will not reach the annual cap or the combined total cap of $32.5 million before 2025. JLARC staff expect that infrastructure credits will exceed vehicle credits in the 2023-25 biennium.

Figure 10: Beneficiaries have claimed over $7 million in total savings. JLARC staff estimate beneficiary savings will grow.



Note: Due to taxpayer confidentiality restrictions, some data about infrastructure credits cannot be shown separately. As a result, all credits are combined in the graph.

Source: JLARC staff analysis of DOR tax return data

State and federal efforts may encourage adoption of alternative fuel commercial vehicles and infrastructure

Washington's adoption of the California vehicle emissions standards requires 40-75% of new trucks, light-duty trucks, and medium-duty vehicles sold in Washington be zero-emission by model year 2035.

In the 2023-25 supplemental transportation budget (ESHB 2134), the Legislature appropriated $120 million from the Carbon Emissions Reduction Account to the Washington Department of Transportation (WSDOT):

- $110 million to implement zero-emission medium and heavy-duty vehicle equipment infrastructure and incentive programs.
- $10 million for grants, and to match federal funds to finance hydrogen refueling infrastructure for medium and heavy-duty vehicles with a focus on locations in disadvantaged and overburdened communities.

The federal commercial clean vehicle credit allows businesses that buy a qualified commercial clean vehicle to claim tax credits up to $40,000.

Part 4.
Zero-emission buses

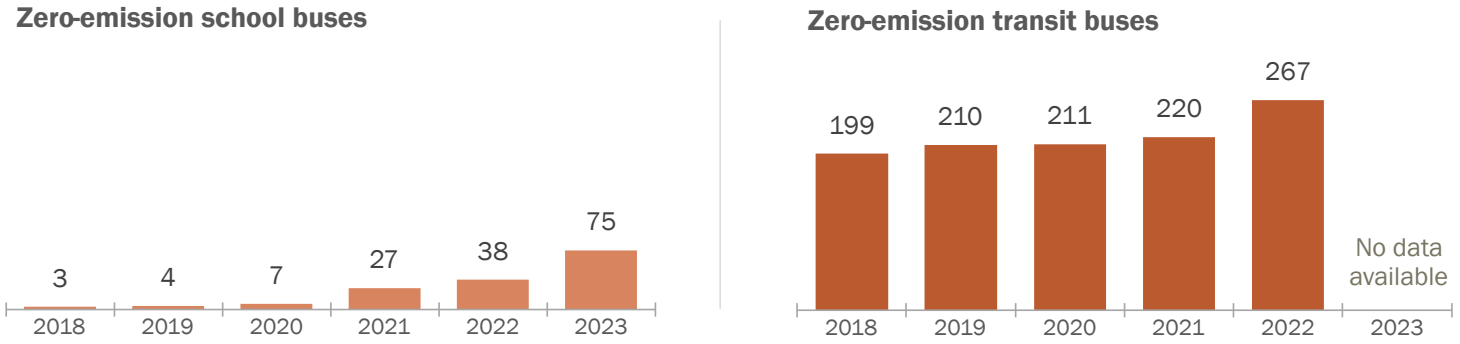
The preference exempts sales of zero-emission buses from sales and use tax. It is available for buses powered by electricity or hydrogen. Trolley buses powered by overhead electricity qualify, but light-rail vehicles do not. The preference took effect in July 2019 and expires on July 1, 2025.

Preference applies primarily to school and transit buses

School districts and transit agencies are the primary beneficiaries of the tax preference. Both have increased the number of zero-emission buses in Washington.

- Zero-emission school buses increased from three in 2018 to 75 at the end of 2023. Despite this growth, this number represents less than 1% of the state's 10,000 school buses.
- Zero-emission transit buses increased from 199 in 2018 to 267 in 2022, the latest year data was available. This is 8.4% of the 3,200 buses operated by Washington transit agencies. Of these, King County Metro operates 224 electric buses and trolleys, many of which were in operation before the preference took effect.

Figure 11. Zero-emission school buses increased by 72 since 2018. Transit agencies increased zero-emission bus fleets by 68 since 2018.



Source: JLARC staff analysis of Federal Transit Administration fleet data. JLARC Analysis of OSPI school bus inventory data.

Number of zero-emission buses expected to increase

Several federal and state grants support replacing existing diesel-powered school buses with electric ones. These are described below. JLARC staff expect these funds to contribute to continued growth in the number of zero-emission school buses.

JLARC staff expect the number of zero-emission transit buses to continue to grow in future years:

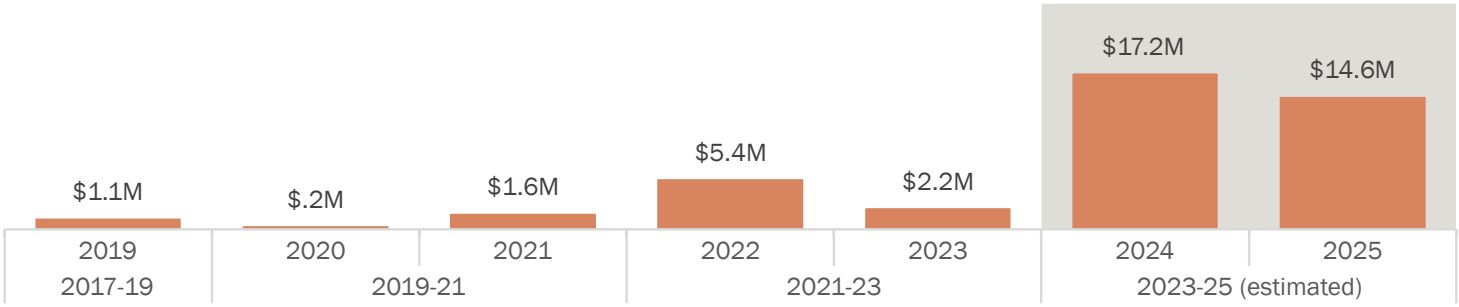
- King County Metro and eight other transit authorities plan to purchase another 190 zero-emission buses between 2023 and 2025.
- Lewis County Transit purchased the first hydrogen-powered bus in the state for $1.2 million in March 2024. Lewis County Transit plans to have five hydrogen-powered buses operating by the end of 2025.

Beneficiaries will save an estimated $31.7 million in the 2023-25 biennium

Given this expected growth, JLARC staff estimate beneficiary savings in the 2023-25 biennium to be $31.7 million.

- In 2023, zero-emission school buses ranged in price from $240,000 to $442,000, depending on the model. Metro and transit buses cost between $1.1 and $1.3 million.
- JLARC staff estimate 2023 beneficiary savings to be $2.2 million.
- Beneficiary savings will likely increase in 2024 and 2025. This is due, in part, to increased federal and state school bus investments, as well as several stated plans by transit authorities to add more electric or hydrogen buses to their fleets in the next few years.

Figure 12: Available zero-emission bus grants will increase future beneficiary savings



Source: JLARC staff analysis of data from OSPI and the Federal Transit Administration

Additional state and federal programs help fund zero-emission buses

In 2024 legislation (E2SHB 1368, Ch. 345, Laws of 2024), the Legislature stated its intent to help school districts, charter schools, and state-tribal education compact schools transition to using only zero-emission school buses. The Office of the Superintendent of Public Instruction must require the purchase of zero-emission school buses once certain conditions are met.

State agencies offer grants and other funds to help school districts and transit agencies buy zero-emission buses and related infrastructure:

- Ecology administers a $14 million program to provide grants to school districts to purchase electric school buses during the 2023-25 biennium. In the 2023-25 supplemental transportation budget (ESHB **2134**), the Legislature appropriated a further $19.7 million to Ecology for zero-emission buses.
- ESHB 2134 also appropriated funds to WSDOT from the Carbon Emissions Reduction Account:
    - $20 million to contract with Ecology to provide expedited funding to purchase zero-emission school buses and refueling infrastructure.
    - $15 million for transit-related capital projects, including a hydrogen fueling station and hydrogen buses in Clark County and electric buses and charging infrastructure for other transit agencies.

Federal grants are available to purchase zero-emission transit buses. These grants include:

- $31 million in federal Environmental Protection Agency grants to Washington school districts and school bus providers. This amount was awarded in late 2023 to buy 90 electric school buses for 20 districts

throughout the state.

- Competitive grants through the Federal Transit Administration for federal fiscal year 2024:
  - $1.1 billion in the Low or No Emission Grant Program to purchase or lease of zero-emission and low-emission transit buses and supporting facilities.
  - $390 million for the Grants for Buses and Bus Facilities Program, to replace, rehabilitate and purchase buses and related equipment, including low- or no-emission buses.
  - Applications for both programs were due in April 2024. Awards have not been announced.
  - In federal fiscal year 2023, these two programs awarded a total of $59 million for programs in six Washington transit agencies.

Part 5. Infrastructure

The Legislature created a sales and use tax exemption available to all buyers of alternative fuel infrastructure in 2009. This tax preference is in addition to the B&O tax and PUT credits for alternative fuel commercial vehicle infrastructure described in Part 3.

Sales and use tax exemption for electric vehicle infrastructure

The preference provides a sales and use tax exemption for sales of:

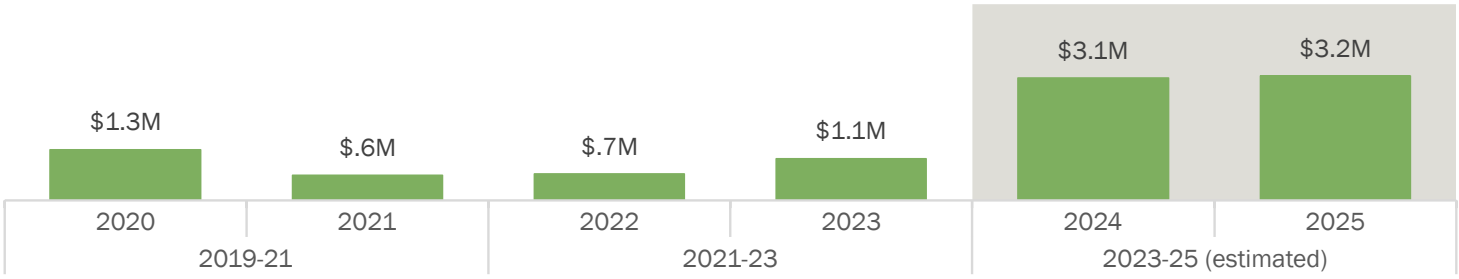
- Tangible property that will become a component of electric vehicle infrastructure, including hydrogen fueling stations. Also exempt are the labor and services to install, construct, repair, or improve the infrastructure.
- Batteries or fuel cells for electric vehicles and the labor and services to install, repair, alter, or improve them.

Electric vehicle infrastructure includes structures, machinery, and equipment necessary to support an electric vehicle, including:

- Battery charging stations.
- Rapid charging stations.
- Battery exchange stations.
- Hydrogen fueling stations for fuel cell electric vehicles.
- Renewable and green electrolytic hydrogen production facilities.

The preference expires July 1, 2025. JLARC staff estimated 2023 beneficiary savings for the sales and use tax exemption for infrastructure, electric vehicle batteries, and fuel cells was $1.1 million. We estimate biennial savings for the 2023-25 biennium will increase, in part due to the availability of planned state and federal infrastructure investments, as detailed below.

Figure 13: Preference estimated to save buyers $6.3 million in the 2023-25 biennium



Source: JLARC staff analysis of DOR tax return data

Leasehold excise tax exemption for electric vehicle infrastructure is likely used but savings are unreported

Leases to tenants of public lands for the purpose of installing, maintaining, and operating electric vehicle infrastructure are exempt from the leasehold excise tax (LET). The preference expires July 1, 2025.

JLARC staff assume the LET exemption is being used, but savings are unknown because use of the preference is not separately reported to DOR. However, DOR estimates no taxpayer savings, assuming annual rent for EV charging stations falls below the LET's taxable threshold of $250.

In 2017, the Legislative Auditor recommended the Legislature clarify the preference to require direct beneficiaries to report their use of the preference. To date, the Legislature has not implemented the recommendation.

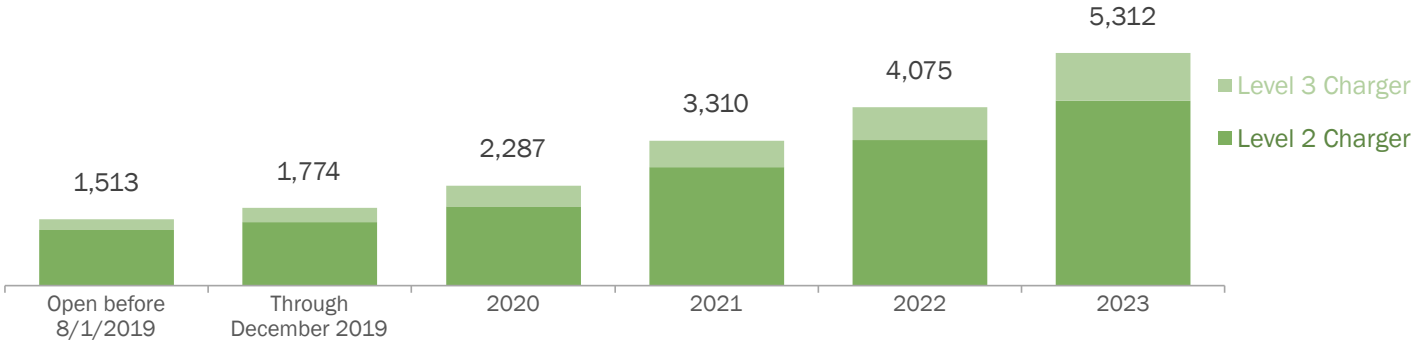
The amount of public charging infrastructure is increasing

Electric vehicle charging infrastructure has increased 251% in Washington since 2019. Federal data on the amount of publicly available infrastructure in Washington describes growth in two types of electric vehicle chargers, as shown in Figure 11:

- Level 2 chargers grew 234%.
    - Level 2 chargers are typically used at homes, workplaces and for public charging. They can charge a battery electric vehicle (BEV) from empty to 80% in 4-10 hours and a plug-in hybrid vehicle (PHEV) in 1-2 hours.
- Level 3 chargers grew 340%.

- Level 3 chargers offer more rapid charging. They are common along heavy-traffic corridors. Level 3 chargers can charge a BEV from empty to 80% in 20 minutes to one hour. Most PHEVs currently on the market do not work with Level 3 chargers.

Figure 14. Number of publicly available chargers increased 251% to more than 5,300 from August 2019 through December 2023



Source: U.S. Dept. of Energy - Alternative Fuel Data Center

State and federal programs expected to contribute to development of additional infrastructure

State programs include:

- WSDOT's Zero-Emission Vehicle Infrastructure program announced $30 million in awards in October 2023 to install direct current fast charging stations or hydrogen fueling stations at 32 sites along priority corridors in Washington.
- Ecology's Charge Where You Are program makes $4 million available to help increase Level 2 charging access across Washington.
- Commerce's Electric Vehicle Charging Program awarded $99 million between February and April 2024 to add 6,236 chargers throughout the state. Commerce estimates 43% of the funding will go to communities most at risk of negative health effects from fossil fuel pollution and 12% will go to tribal projects or projects on tribal lands.

Since 2020, over $15 billion in federal funding has been provided for infrastructure nationally, including $7.5 billion in the bipartisan infrastructure law for federal fiscal years 2022-2026:

- $5 billion for the National Electric Vehicle Infrastructure Formula Program. Washington's portion of the formula funding is $70.9 million.
- $2.5 billion for a competitive grant program to deploy publicly accessible EV charging infrastructure and hydrogen, propane, and natural gas fueling infrastructure along designated Alternative Fuel Corridors and other publicly accessible locations.
- In 2023 the U.S. Department of Energy selected the Pacific Northwest as a regional clean hydrogen hub, making the region (WA, OR, MT) eligible for up to $1 billion in federal funds over nine years to accelerate

the transition to clean hydrogen production and use.

Recommendations

The Legislature should determine whether to continue the eight tax preferences, and at what level, before four of them expire in 2025.

In making this determination, the Legislature should consult with the Electric Vehicle Coordinating Council if considering amendments. The preferences were enacted before the council was established and before it developed the state Transportation Electrification Strategy. Its member agencies administer related state and federal grant programs. This expertise could help inform policy decisions related to the tax preferences.

Legislation Required: Yes.

Fiscal Impact: Depends on legislative action.

Implementation Date: July 1, 2025.

Commissioners' Recommendation

The commission endorses the Legislative Auditor's recommendation with comment.
When determining whether to continue the preferences, the Legislature should 1) consider the Department of Commerce's recommendation to centralize incentive programs to improve clarity, ease of access, and efficiency, and 2) explore the Department of Commerce's suggestion to shift resources from a tax exemption to a rebate program. Increased clarity, ease of access, and efficiency should increase levels of participation in all programs and the public benefit return on investment.

Agency Response

The Department of Commerce concurs with the recommendation. See **attached letter (PDF)**.

The Washington State Department of Transportation, the Office of Financial Management (OFM), and the Department of Revenue (DOR) were given an opportunity to comment on this report. They responded that they

do not have any comments. See **attached letter (PDF)**.

Current Recommendation Status

JLARC staff follow up on the status of Legislative Auditor recommendations to agencies and the Legislature for four years. The most recent responses from agencies and status of the recommendations in this report can be viewed on our **Legislative Auditor Recommendations page**.

Appendices

Appendix A: Preference details

Preference	Tax Type	Details	Established	Expires
Alternative fuel vehicles (RCWs **82.08.9999; 82.12.9999**)	Sales and use	Applies to sales or leases of new or used vehicles: • Powered by alternative fuel or plug-in hybrids that get at least 30 miles from a battery charge. • Sales price up to $45,000 for new and $30,000 for used. • Value on which exemption is calculated decreases every two years until expiration.	August 1, 2019	August 1, 2025
Zero-emission buses (RCWs **82.08.816(1)(e); 82.12.816(1)(d)**)	Sales and use	Full sales tax exemption	July 28, 2019	July 1, 2025

Preference	Tax Type	Details	Established	Expires
EV batteries, fuel cells, and infrastructure (RCWs **82.08.816(1)(a)-(d); 82.12.816(1)(a)-(c)**)	Sales and use	• Full sales tax exemption for items, and services to install, repair, alter or improve. • Includes hydrogen fuel cells and related infrastructure.	July 26, 2009; hydrogen added July 28, 2019	July 1, 2025
Use of public land for EV infrastructure (RCW **82.29A.125**)	Leasehold excise	Tax exemption for private use of public property to install or maintain AFV charging stations and other infrastructure.	July 26, 2009	July 1, 2025
Commercial clean alternative fuel vehicles (RCWs **82.04.4496(1)(a)(i)** and **82.16.0496(1)(a)(i)**)	B&O and public utility	Credits issued for a percentage of the incremental cost of clean AFVs above cost for conventionally fueled vehicles. Vehicles owned by private businesses for commercial purposes or to transport goods, people, animals, etc. Several limits and annual caps apply.	July 15, 2015	Contingent expiration when $32.5 million in credits are issued (combined B&O and PUT, vehicles and infrastructure)
Commercial clean alternative fuel vehicle infrastructure (RCWs **82.04.4496(1)(a)(ii)** and **82.16.0496(1)(a)(ii)**)	B&O and public utility	Credits issued for up to 50% of cost to buy infrastructure, property incorporated into infrastructure, property acquisition, site improvement, and installation and construction costs	July 28, 2019	Contingent expiration when $32.5 million in credits are issued (combined B&O and PUT, vehicles and infrastructure)

Appendix B: Alternative fuel vehicle registrations by census tract

JLARC mapped Department of Licensing (DOL) data for 163,000 alternative fuel vehicle (AFV) title transactions between 2019 and 2024 by census tract. The map below shows, for each census tract in Washington, the number of vehicles per 1,000 population, shaded by quintile. Darker shades indicate census tracts with more registrations per 1,000 population. The map also depicts, for each census tract:

- Area median income.

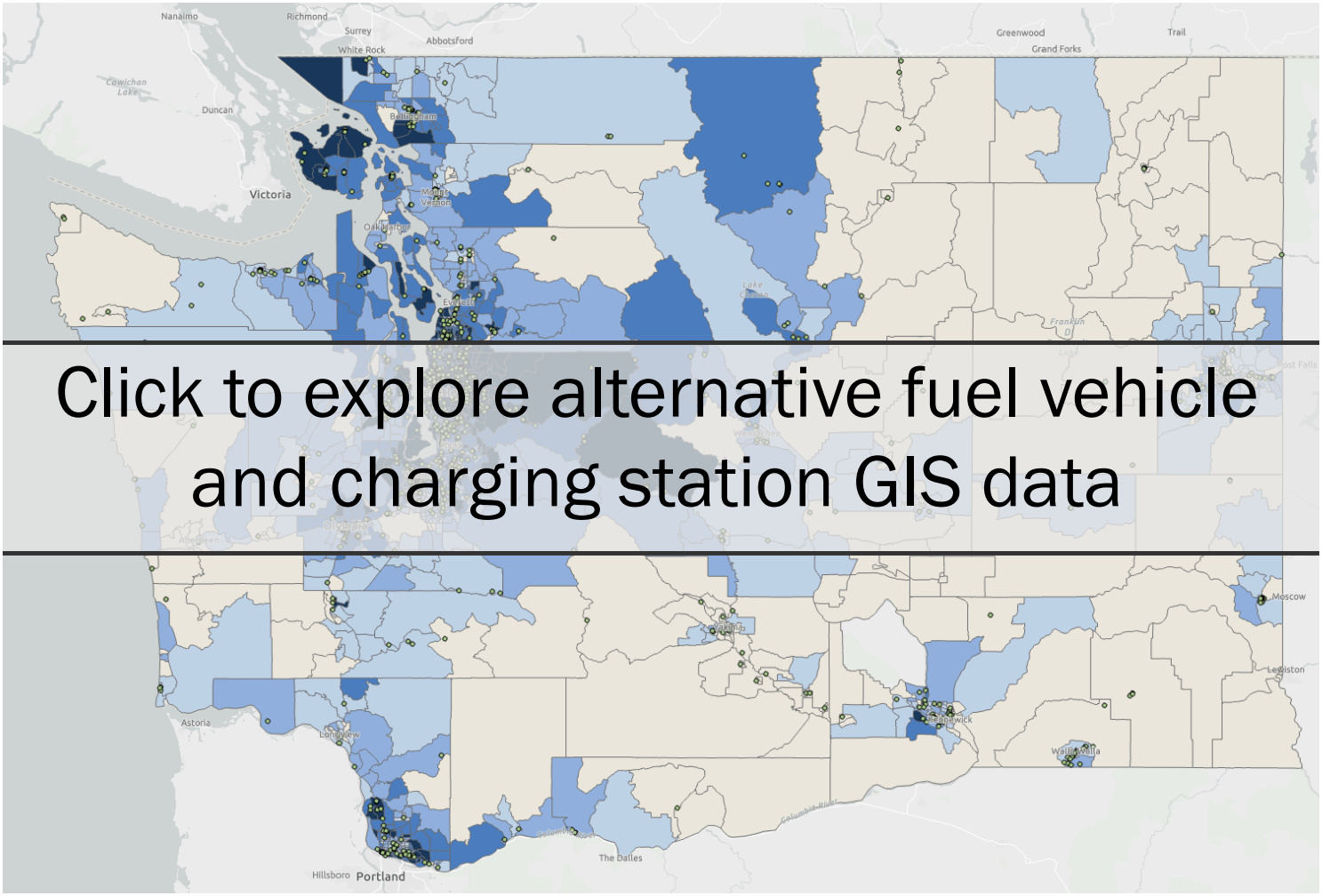
- Population count by race and ethnicity.

The DOL vehicle data does not include specific information about the buyers of AFVs. Thus, the income and demographic data in the map and summarized below are not specific to purchasers of AFVs. Rather, these data describe the areas where the vehicles are registered. By grouping census tracts into quintiles (each quintile is 20% of the total) ordered by the rate of AFV registrations per 1,000 population, we can illustrate differences between areas where AFV registrations are more and less common. The income, race, and ethnicity data do not provide any insight into why the AFV registrations may differ across different areas of the state.

The map shows that the census tracts with the higher rates of AFVs per capita tend to include the state's population centers. These are areas are also more densely populated with charging stations.

Figure 15: Densely populated areas with charging stations have higher rates of AFVs per 1,000 population

Click on the map to explore the data.



Source: JLARC staff analysis of DOL and 2022 American Community Survey data

Using U.S. Census Bureau guidance, JLARC staff aggregated the counts of census tract populations by race and ethnicity and summarized the population of each quintile by race and ethnicity. This data is not specific to the buyers of AFVs; it only summarizes the demographics of census tracts with different rates of per-capita AFV registrations. The quintile (20%) of census tracts with the highest number of AFV registrations per capita has a higher proportion of Asian residents and a lower proportion of Hispanic or Latino residents than the quintile of census tracts with the lowest rate of AFV registrations per capita. The census data and estimated margins of error are displayed below.

Figure 16: Race and ethnicity by per-capita AFV registration in census tracts

Category	1st Quintile (Fewest AFVs/capita)	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile (Most AFVs/ capita)
Black or African American	2.6%	4.4%	4.4%	4.8%	2.6%
	+/- 0.2%	+/- 0.2%	+/- 0.2%	+/- 0.2%	+/- 0.2%
American Indian and Alaska Native	1.9%	1.1%	0.7%	0.6%	0.3%
	+/- 0.1%	+/- 0.1%	+/- 0.1%	+/- 0.1%	+/- 0.04%
Asian	2.5%	4.8%	7.6%	10.7%	19.1%
	+/- 0.2%	+/- 0.2%	+/- 0.2%	+/- 0.3%	+/- 0.3%
Hispanic or Latino	27.0%	14.0%	11.7%	9.2%	6.8%
	+/- 0.3%	+/- 0.3%	+/- 0.3%	+/- 0.3%	+/- 0.2%
Native Hawaiian and Other Pacific Islander	0.7%	1.1%	0.7%	0.6%	0.2%
	+/- 0.1%	+/- 0.1%	+/- 0.1%	+/- 0.1%	+/- 0.04%
Some other race	0.3%	0.4%	0.5%	0.5%	0.5%
	+/- 0.1%	+/- 0.1%	+/- 0.1%	+/- 0.1%	+/- 0.1%
Two or more races	5.0%	6.4%	6.2%	6.4%	6.1%
	+/- 0.2%	+/- 0.2%	+/- 0.2%	+/- 0.3%	+/- 0.2%
White	60.0%	67.8%	68.1%	67.0%	64.4%
	+/- 0.3%	+/- 0.4%	+/- 0.4%	+/- 0.4%	+/- 0.3%

Source: JLARC staff analysis of DOL and 2022 American Community Survey data

Appendix C: Washington Transportation Electrification Strategy

RCW 43.392 creates the interagency Electric Vehicle Coordinating Council. It also requires the council to develop a statewide transportation electrification strategy to ensure market and infrastructure readiness for all new vehicle sales. The council must also provide an annual report to the Legislature that summarizes electric vehicle implementation progress, gaps, and resource needs. Both reports informed this tax preference review, and they are linked below:

- The council published the state **Transportation Electrification Strategy** in 2024.
- The **council's 2023 annual report** is available online.

Appendix D: Applicable statutes

82.08.9999 | Exemptions—Vehicles using clean alternative fuels and electric vehicles. (Expires August 1, 2028.) +

82.12.9999 | Exemptions—Vehicles using clean alternative fuels and electric vehicles. (Expires August 1, 2028.) +

82.04.4496 | Credit—Clean alternative fuel commercial vehicles. +

82.16.0496 | Credit—Clean alternative fuel commercial vehicles—Alternative fuel vehicle infrastructure. +

82.08.816 | Exemptions—Electric vehicle batteries and fuel cells—Labor and services—Infrastructure. (Expires July 1, 2025.) +

82.12.816 | Exemptions—Electric vehicle batteries and fuel cells—Labor and services—Infrastructure. (Expires July 1, 2025.) +

82.08.816 | Exemptions—Electric vehicle batteries and fuel cells—Labor and services—Infrastructure. (Expires July 1, 2025.) +

82.12.816 | Exemptions—Electric vehicle batteries and fuel cells—Labor and services—Infrastructure. (Expires July 1, 2025.) +

82.29A.125 | Exemptions—Electric vehicle infrastructure. (Expires July 1, 2025.) +

Appendix E: Methods

The methodology JLARC staff use when conducting analyses is tailored to the scope of each study, but generally includes the following:

- **Interviews** with stakeholders, agency representatives, and other relevant organizations or individuals.

- **Site visits** to entities that are under review.
- **Document reviews**, including applicable laws and regulations, agency policies and procedures pertaining to study objectives, and published reports, audits or studies on relevant topics.
- **Data analysis**, which may include data collected by agencies and/or data compiled by JLARC staff. Data collection sometimes involves surveys or focus groups.
- **Consultation with experts** when warranted. JLARC staff consult with technical experts when necessary to plan our work, to obtain specialized analysis from experts in the field, and to verify results.

The methods used in this study were conducted in accordance with Generally Accepted Government Auditing Standards.

More details about specific methods related to individual study objectives are described in the body of the report under the report details tab or in technical appendices.

Appendix F: Audit authority

The Joint Legislative Audit and Review Committee (JLARC) works to make state government operations more efficient and effective. The Committee is comprised of an equal number of House members and Senators, Democrats and Republicans.

JLARC's nonpartisan staff auditors, under the direction of the Legislative Auditor, conduct performance audits, program evaluations, sunset reviews, and other analyses assigned by the Legislature and the Committee.

The statutory authority for JLARC, established in **Chapter 44.28 RCW**, requires the Legislative Auditor to ensure that JLARC studies are conducted in accordance with Generally Accepted Government Auditing Standards, as applicable to the scope of the audit. This study was conducted in accordance with those applicable standards. Those standards require auditors to plan and perform audits to obtain sufficient, appropriate evidence to provide a reasonable basis for findings and conclusions based on the audit objectives. The evidence obtained for this JLARC report provides a reasonable basis for the enclosed findings and conclusions, and any exceptions to the application of audit standards have been explicitly disclosed in the body of this report.

Appendix G: Study process

View guide to JLARC Tax Preference Reviews **here**.

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