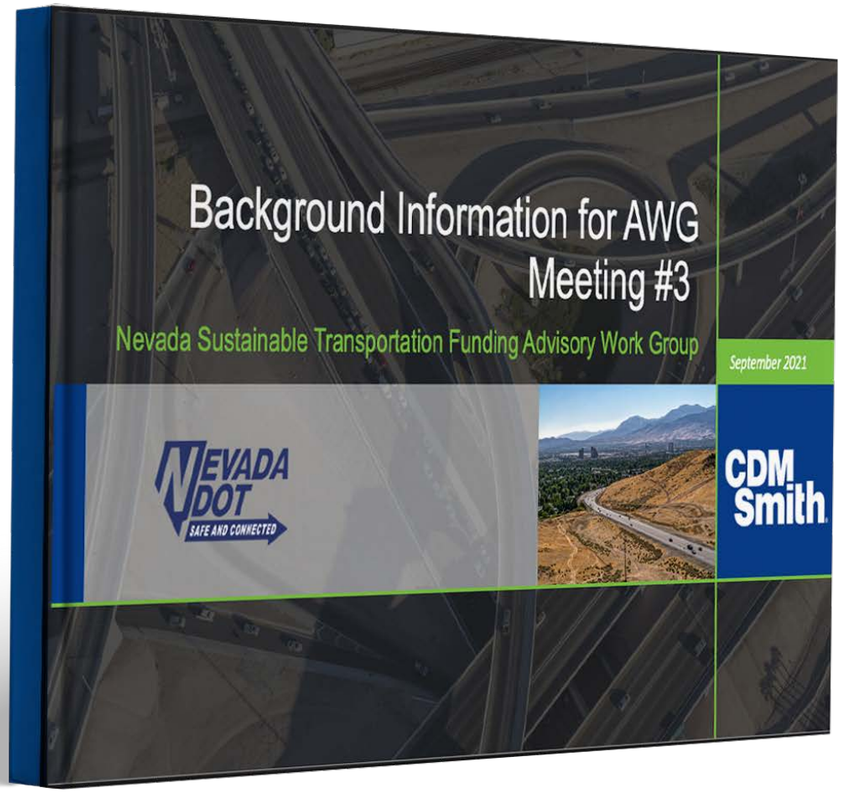
Background Information for AWG Meeting #3

Nevada Sustainable Transportation Funding Advisory Work Group

September 2021

Contents

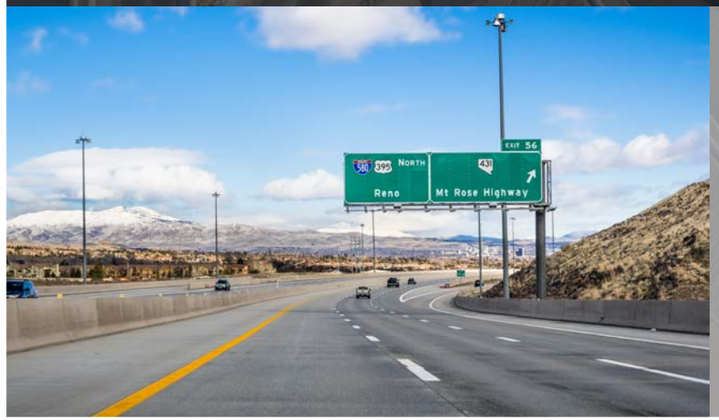
How to use this briefing book



This briefing book is provided to Advisory Working Group members as background for the September 14, 2021, meeting. These materials are aligned with the Agenda for the meeting and provide background information on several of the topics to be reviewed and discussed.

During the meeting, slide presentations will summarize each of these topics (but not repeat everything), so it will be helpful to read the content of the briefing book prior to the meeting.

The project team is happy to answer any questions that arise prior to or during the meeting.



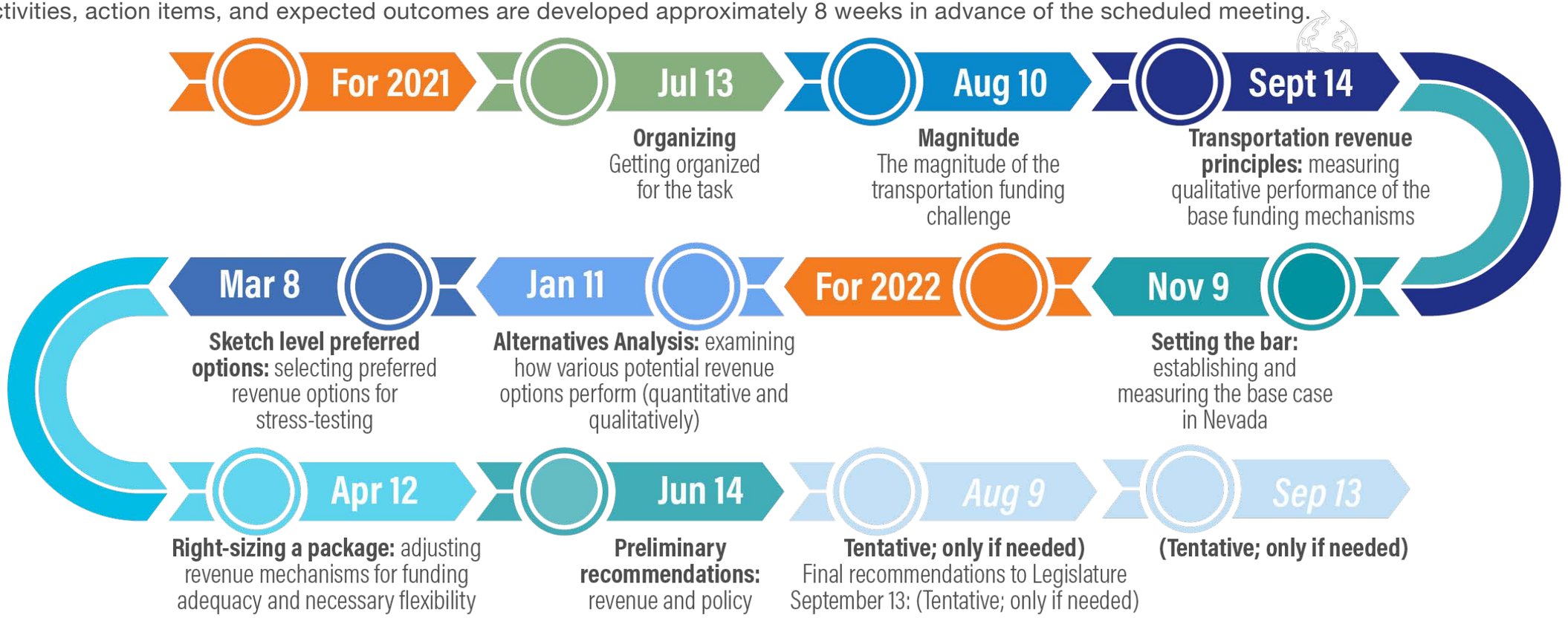
Section 1

Advisory Working Group meeting roadmap

AWG MEETINGS

Looking ahead, each AWG meeting has an overall theme, with specific agenda items and outcomes to support that theme.

The meeting information provided below is a roadmap of what is planned for coverage. Meetings that are several months out are planned only in low-fidelity, keeping the agenda more open to respond to issues raised during earlier meetings, or to adjust to new information. More detailed agendas, presenters, activities, action items, and expected outcomes are developed approximately 8 weeks in advance of the scheduled meeting.



8-WEEK AGENDA BUILD

The September AWG meeting agenda was developed in August. The November AWG meeting agenda is under development now.

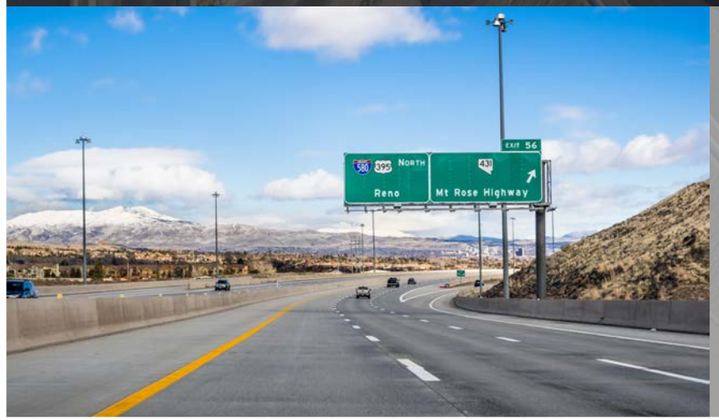
About eight (8) weeks ahead of an AWG meeting, we begin building the draft meeting agenda in greater detail. The September and November 2021 AWG meetings shown below illustrate how the meeting topics, activities and expected outcomes come into sharper focus as the dates approach.

For September 14 AWG Meeting:

- Transportation taxes, fees, charges, and assessments used in other states
- Brief history of this sustainable transportation revenue proposals (including SCR 3 and subsequent legislative action and local efforts like county fuel revenue indexing)
- The future of motor fuel tax revenue collections in Nevada
- State of play: transportation electrification in the U.S.
- Development of Guiding Principles for considering new transportation revenue sources in Nevada

For November 9 AWG Meeting:

- Examine results of base case analysis: motor fuels tax
- Review fuel tax rate indexing in Nevada and elsewhere: advantages, drawbacks, and alternatives
- Application of AWG-selected principles to existing Nevada transportation revenue mechanisms
- Presentation on two funding models: Utah road usage charge program and NRDC-proposed road usage charge concept
- Examine flexible funding sources for non-highway projects



Section 2

Transportation revenue sources in the U.S.

SUMMARY OF MECHANISMS

Transportation tax and fee mechanisms suit a wide range of objectives

The Oxford English Dictionary defines the word tax as a noun meaning “a compulsory contribution to the support of government, levied on persons, property, income, commodities, transactions, etc., now at fixed rates, mostly proportional to the amount on which the contribution is levied.”

Most transportation taxes are more properly viewed as user or usage fees, whereby the fee assessed on a service or activity aims to generate funding to support the public sector’s provision of that service or activity. User fees have as their primary aim the generation of revenue to recover costs, in part or in whole.

Transportation taxes and user fees often serve as attractive tools to achieve other objectives unrelated to revenue generation or cost recovery. In general, these other objectives involve the deployment of tax and fee mechanisms as pricing tools to encourage or discourage certain behaviors or activities. For example, sufficiently high tax or fee rates can discourage activities like driving at peak times, excessive automobile ownership, and emitting harmful tailpipe pollutants and greenhouse gases. Discouraging these activities through taxation can reduce the undesirable external costs (externalities) they produce, like congestion and emissions. Likewise, relatively low tax or fee rates can encourage desirable activities like off-peak driving, usage of public transportation, and more efficient commercial fleet operations.

Often the objectives of generating revenue and addressing external costs come into conflict. A tax or fee mechanism well suited to revenue generation may be poorly suited to addressing external costs, and vice versa. Below are two columns of examples of revenue-related objectives (left) and externality-related objectives (right).

Mechanisms for generating revenue may aim to fund:

- A bridge, tunnel, or highway segment
- A highway network
- A road network
- Active transportation infrastructure
- Public transportation infrastructure
- Public transportation operations
- Non-surface transportation

Mechanisms for addressing external costs may aim to:

- Reduce congestion and delays
- Reduce emission of harmful pollutants and greenhouse gases
- Encourage transit usage
- Discourage driving
- Encourage ownership of low- or zero-emission vehicles

In the subsequent review of transportation funding mechanisms contained in this briefing book, consider the stated purpose of each mechanism and its suitability to achieving various, and sometimes conflicting, objectives.

SUMMARY OF MECHANISMS

Dozens of distinct tax and fee mechanisms produce revenues that fund transportation investments at the federal, state, and local levels.

Most transportation taxes and fees in the U.S. have been enacted as fiscal policy tools with the primary or exclusive aim of revenue generation. For purposes of this briefing material, we categorize transportation **revenue generating mechanisms** as follows:

Fuel taxes. The most common form of indirect usage charging, taxes on fuels used to proper motor vehicles have been enacted at the federal level and in all 50 states, 49 of them with the exclusive purpose of generating revenue primarily or entirely to fund roads and bridges. Various forms of fuel taxation exist.

Vehicle related fees. Vehicle related fees aim to recover the costs of vehicle licensing but can also serve as a convenient tool for revenue generation. Numerous types of vehicle fees exist.

Direct usage fees. Increasingly common are a variety of direct usage-based fees which assess charges on system users based on actual consumption of or impacts on the transportation system.

Freight related fees. As a key user of the transportation system, freight businesses can contribute through revenue mechanisms in addition to fuel taxes, vehicle fees, and direct usage fees.

Indirect usage fees. Other proposed forms of indirect usage fees beyond fuel taxes include taxes and fees on materials and products that serve as inputs to the use of the transportation system, such as tires, electricity, and batteries.

In addition, transportation systems often benefit from **general funding**. The primary mechanisms for general tax revenue are sales, property, income, and payroll taxes. The policy choice to appropriate funds from general revenue to transportation purposes is almost always available to lawmakers and, when taken, often temporary. Many examples exist of state or local governments appropriating general fund revenue to transportation or even dedicating a defined proportion of general fund revenue (or of a specific general fund mechanism) to transportation at least temporarily.

Less common but often discussed are a range of tax and fee **mechanisms to address externalities**. Examples of such taxes and fees include:

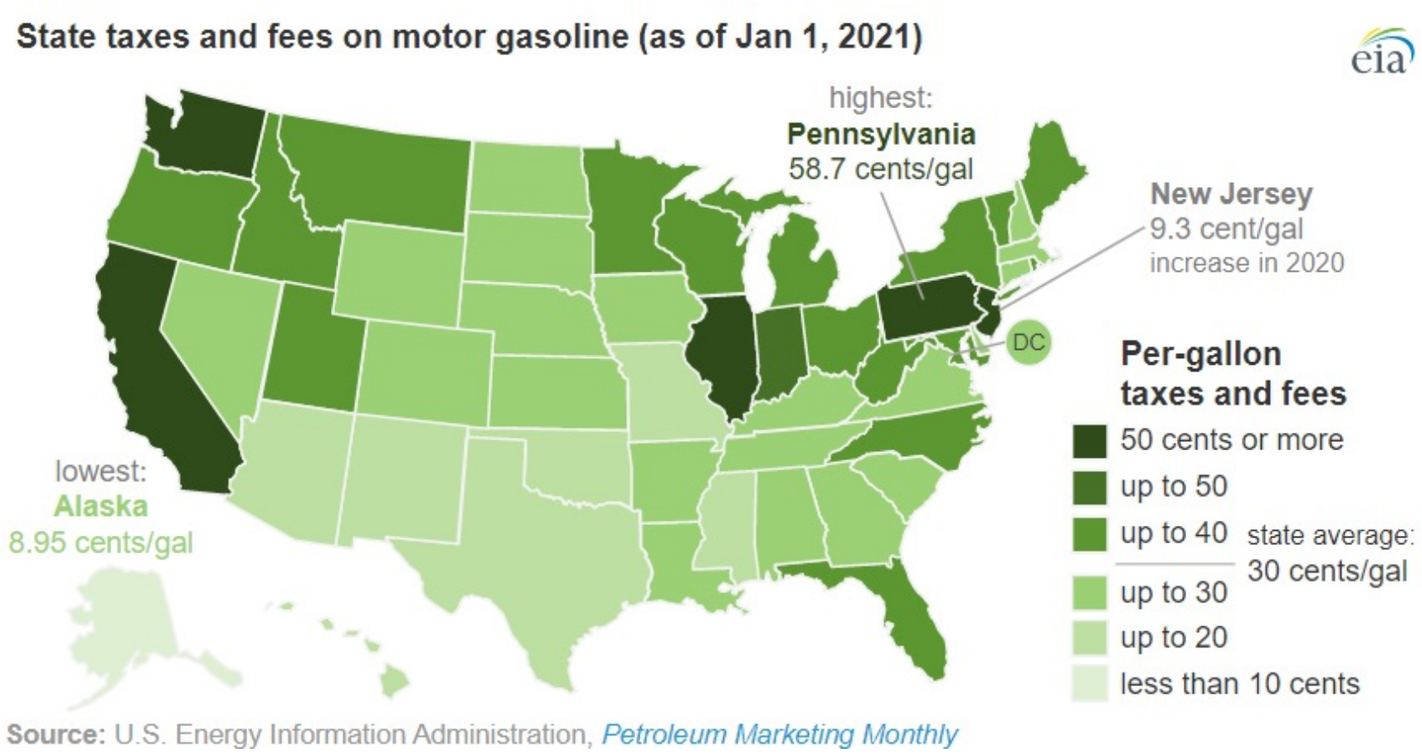
- **Congestion pricing such as express toll lanes and cordon pricing.** The primary purpose of congestion pricing on roadway systems is to manage demand across a corridor or network to reduce congestion and delays. This is achieved by increasing the price to temporarily suppress demand, thereby increasing flow and speeds of vehicles.
- **Certain vehicle related fees.** Some countries assess high taxes on the purchase of undesirable vehicles such as those with low fuel economy.
- **Carbon taxes.** Taxation of carbon emissions has been introduced in other countries with the purpose of discouraging emissions from burning fossil fuels in general, including from transportation sources. Similar to carbon taxes, cap-and-trade programs have been enacted in California, Washington, and 11 states in the Northeast.

MOTOR FUEL TAXES

Motor fuel taxes are the largest source of transportation revenue in the U.S., generating $89 billion at federal, state, and local levels in 2019

Every state and the District of Columbia imposes a per-gallon fuel excise tax. All but Alaska dedicate all or most fuel tax revenue to roads and bridges. In addition, a variable fuel tax rate based on percentage of price is employed by 13 states. This is distinct from a state retail sales tax on fuel, which is imposed by four states. The District of Columbia and 13 states index their per-gallon fuel excise tax rate to inflation, and five states allow local-option fuel taxes, such as counties. One state (Georgia) indexes the fuel tax rate to vehicle fleet fuel economy and inflation. Cumulative fuel-based taxes are highest in Pennsylvania (59 cents per gallon), lowest in Alaska (9 cents per gallon), and average 30 cents per gallon nationally. In addition, the federal government taxes gasoline at 18.4 cents per gallon and diesel at 24.4 cents per gallon to fund the federal Highway Trust Fund.

Note: image at right does not include local-option fuel taxes such as Nevada's county fuel revenue indexing.



MOTOR FUEL TAXES

Fuel tax rate formulas and points of taxation vary, but the purpose is to recover costs proportional to usage

Type of fuel tax	Description	Examples
Flat per-gallon excise fuel tax	The most common form of fuel taxation, flat per-gallon excise taxes impose a tax that does not vary unless the rate is adjusted by legislation. At the federal level, the gasoline tax has been 18.4 cents per gallon since 1993 (24.4 cents per gallon for special fuels).	Federal + all 50 states
Excise tax with inflation index on per-gallon rate	Although the precise statutory constructions vary, inflation-indexed fuel taxes effectively adjust the flat per-gallon excise fuel tax rate by increasing automatically it in proportion to a measure of inflation such as consumer price index (CPI) or producer price index (PPI).	AL, DC, FL, GA, IL, IN, MD, MI, NV (Clark & Washoe only), NY, NC, RI, UT, VA
Variable-rate tax based on the price of fuel	Variable-rate taxes based on the price of fuel can be considered a hybrid between per-gallon excise taxes and sales taxes. The tax is formulated as a per-gallon tax rate (rather than a percent of price), but the rate itself is updated periodically based on fuel prices.	AR, CA, CT, KY, MD, NE, NJ, NY, OH, PA, UT, VT, WV
Excise tax with fuel efficiency index on per-gallon rate	In 2016, Georgia became the first state to automatically adjust its per-gallon fuel tax rate automatically for fleet fuel economy. Georgia also has an inflation index.	GA
County-option fuel taxes	Several states allow counties and/or municipalities to impose fuel taxes distinct from the state fuel tax. Typically, the tax is collected from the distributor on taxes destined for fueling stations in the subject county. County fuel taxes, as in Florida and Nevada, can have variable rates.	FL, HI, IL, NV, OR
Sales tax on fuel	Distinct from variable-rate excise taxes, several states impose a general retail sales tax on fuel. However, revenue from these sales taxes are not dedicated to transportation.	HI, IL, IN

VEHICLE RELATED FEES

Vehicle registration fees are the second largest category of transportation funding mechanism. Basic fees to cover licensing costs are sometimes accompanied by taxes on characteristics like vehicle weight, age, or value.

All states but 7 and the District of Columbia collect vehicle related fees, most commonly title fees and periodic licensing fees to cover the cost of administering the licensing and registration service and system. In addition, many states collect vehicle related taxes and fees at the time of annual registration in a range of formats. These include flat fees, excise taxes (based on vehicle value), weight taxes, and propulsion-specific taxes (currently only electric vehicles face specific special charges in some states, engine displacement taxes have been proposed but not adopted at this point). Licensing fees are typically dedicated funding streams necessary for the operation of the vehicle registry and often safety (e.g., state patrol), with additional taxes funding roads, transit, and other transportation investments.

Weight taxes: Fourteen states asses a weight tax due at time of vehicle licensing or registration. The fees are assessed based upon classification or in a graduated manner. For example, Maryland imposes a $135 fee for vehicles up to 3,700 lbs. and $187 for those over. In contrast, New York collects a $26 fee on the first 1,650 lbs. then $1.50 for each 100 lbs. after. The fees are assessed annually or biennially, with multi-year purchase options available in some states.

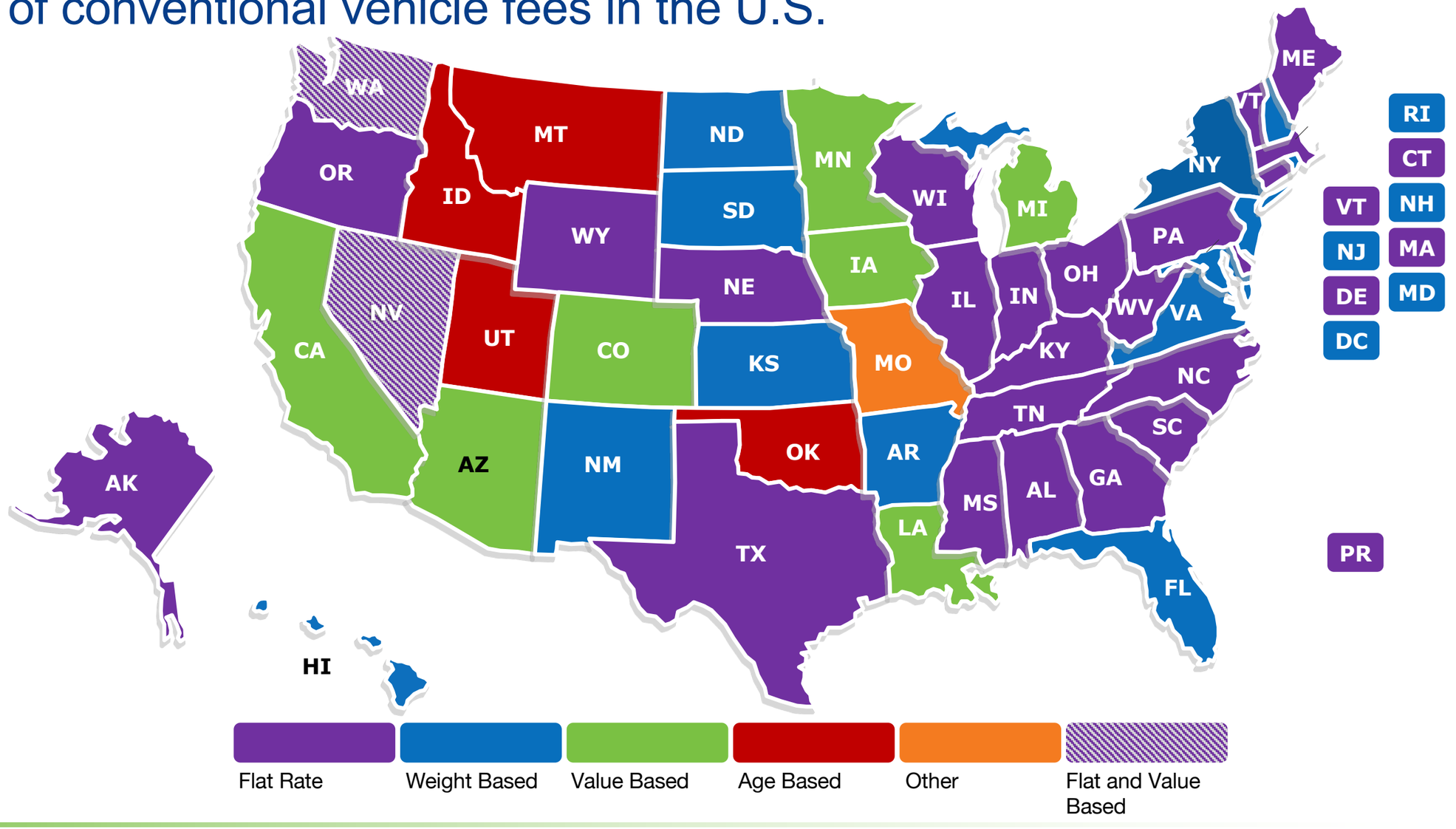
Age-based fees: Four states employ age-based registration fees: Idaho, Montana, Utah, and Wyoming. Fees range significantly with those 0-4 years paying $217 in Montana while vehicles one to two years of age in Idaho pay $69.

Motor vehicle excise taxes (MVETs): MVETs, also referred to as property taxes, are typically paid based upon the depreciated value of the vehicle. They are assessed at multiple levels of government in the United States including state, county, municipal, and special jurisdictional boundaries. For example, Sound Transit, the Regional Transportation Authority in metropolitan Seattle, assesses a 1.1% tax on the current value of vehicles, within the three-county area of its jurisdiction. Indiana and Massachusetts authorize counties and municipalities to assess MVETs. Vehicles in 27 states are subjected to a "Property Tax," the highest rate being in Virginia at 4.05%. Nevada assesses a governmental services tax based on vehicle value, with revenue currently dedicated in part to transportation purposes and split between the state and counties.

Heavy vehicle registration fees: Nearly every state imposes registration fees on heavy vehicles. For interstate carriers over 26,000 pounds, registration fees are “apportioned” among all states and provinces in which the fleet operates based on miles driven in each state, similar to how the International Fuel Tax Agreement (IFTA) collects and allocates fuel taxes among heavy vehicles across jurisdictions.

VEHICLE RELATED FEES

Map of conventional vehicle fees in the U.S.

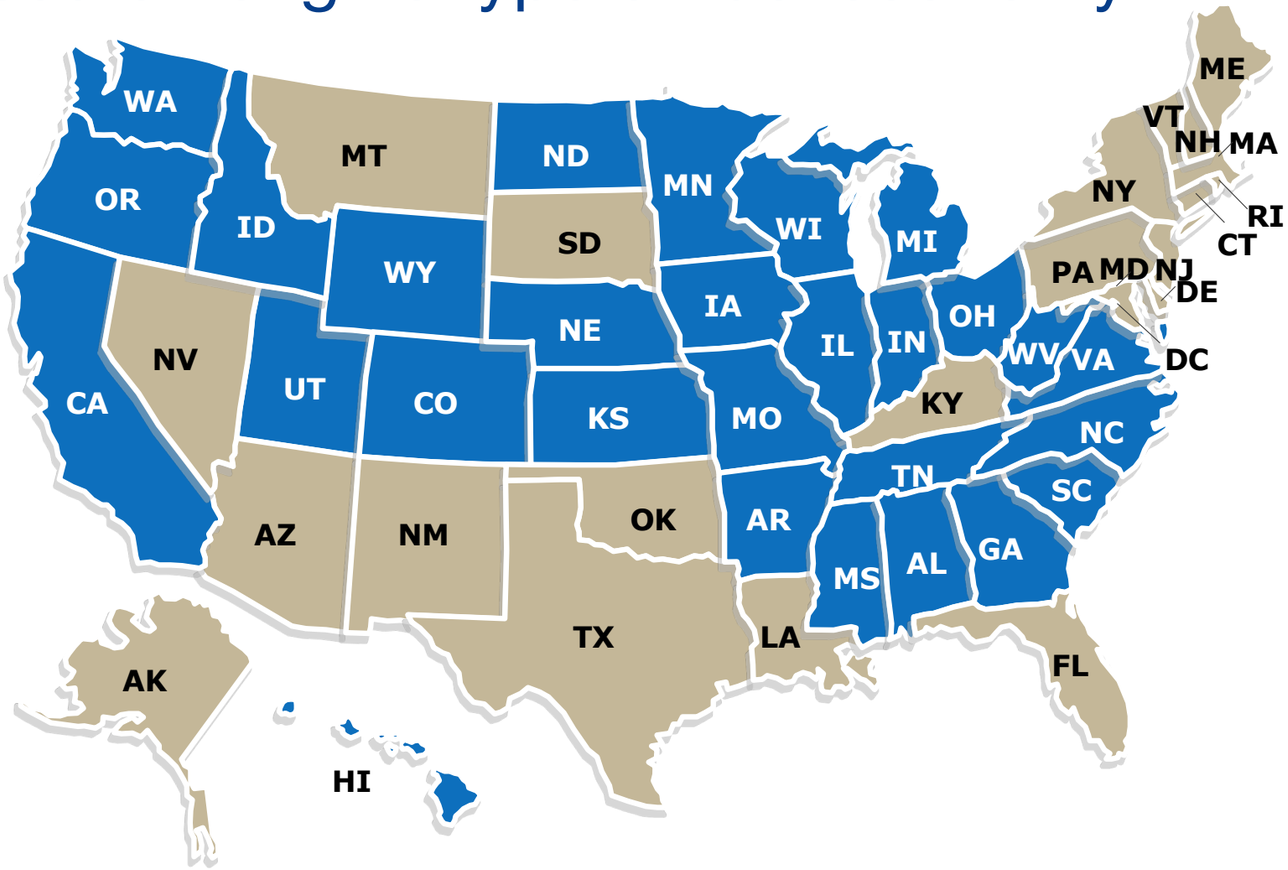


VEHICLE RELATED FEES

Increasingly, vehicle fees are based on engine type or fuel economy

As of early 2021, 28 states have enacted special fees for plug-in electric vehicles (EVs), and of these half also assess fees on plug-in hybrid vehicles and/or hybrid vehicles. The fees range from $50 in Colorado and Hawaii to $225 for electric vehicles in Washington. The fees, typically assessed at annual registration, are designed to compensate for the loss of fuel tax revenue represented by road usage of these vehicles. However, several states assess an additional EV fee to support the construction of charging stations.

Oregon is the first state to adopt a tiered registration fee based on miles per gallon (MPG), based on the rationale that higher MPG vehicle owners should pay more to make up for road usage costs they avoid by paying less gas tax. Vehicles under 20 MPG pay $61 per year, while vehicles 20-39 MPG pay an additional $10 per year ($71 total), vehicles 40 MPG and higher pay a $15 surcharge per year ($76 total), and all-electric vehicles pay a $92 surcharge per year ($153 total). Electric vehicles and vehicles rated 40 MPG and higher enjoy a lower cost of registration ($43, $18 less than the base charge) per year if they enroll in the state's distance-based charging program. Missouri and New Hampshire have also explored tiered registration fees based on MPG, but neither has enacted the policy.

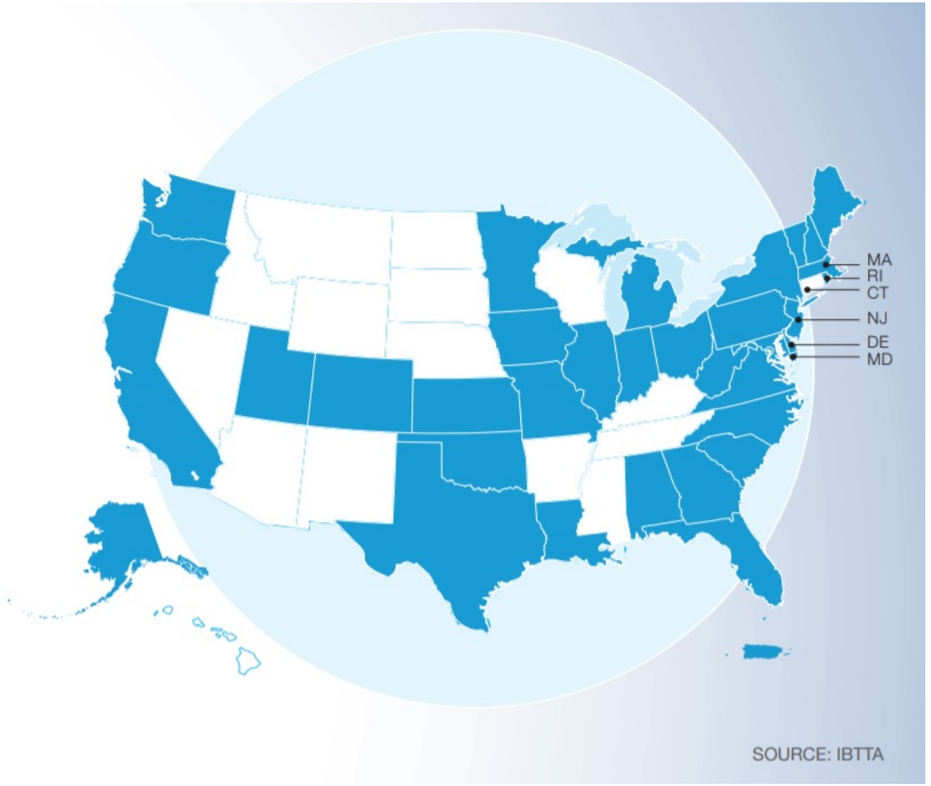


DIRECT USAGE FEES

Tolling is the most common form of direct usage charging in the U.S., but its application is limited to high-volume highway segments, bridges, and tunnels

Puerto Rico and 34 states have at least one tolled highway, bridge or tunnel, covering a combined 5,998 miles. The growth and extent of toll facilities is slow, despite exceptions to the federal ban on tolling on the vast majority of projects receiving federal-aid highway funds. Exceptions to the general ban include new facilities or the reconstruction or replacement of existing facilities. Overall, 58% of tolled miles nationally are part of the Interstate system, and the Northeast accounts for the highest concentration of facilities.

The three largest operators of tolled roads by mileage are The Oklahoma Turnpike Authority (605 miles), Florida Turnpike Authority (594 miles), and New York State Thruway Authority (570 miles), while the three largest agencies by revenue are the New Jersey Turnpike Authority ($1,444 million, 2019), The Port of New York and New Jersey ($1,668 million, 2019), and New York MTA Bridges and Tunnels ($2,071 million, 2019). Flat toll amounts per toll point are the most common, with some facilities tolled based on mileage between toll points. Variable rates are increasingly prevalent in order to modulate demand, with a secondary purpose of generating revenue. HOV to High-Occupancy Toll lane conversions are one major growth area of tolling. Conversions typically occur where HOV lanes are not meeting performance criteria and variable rates coupled with increased occupancy requirements are implemented to increase travel speeds.



DIRECT USAGE FEES

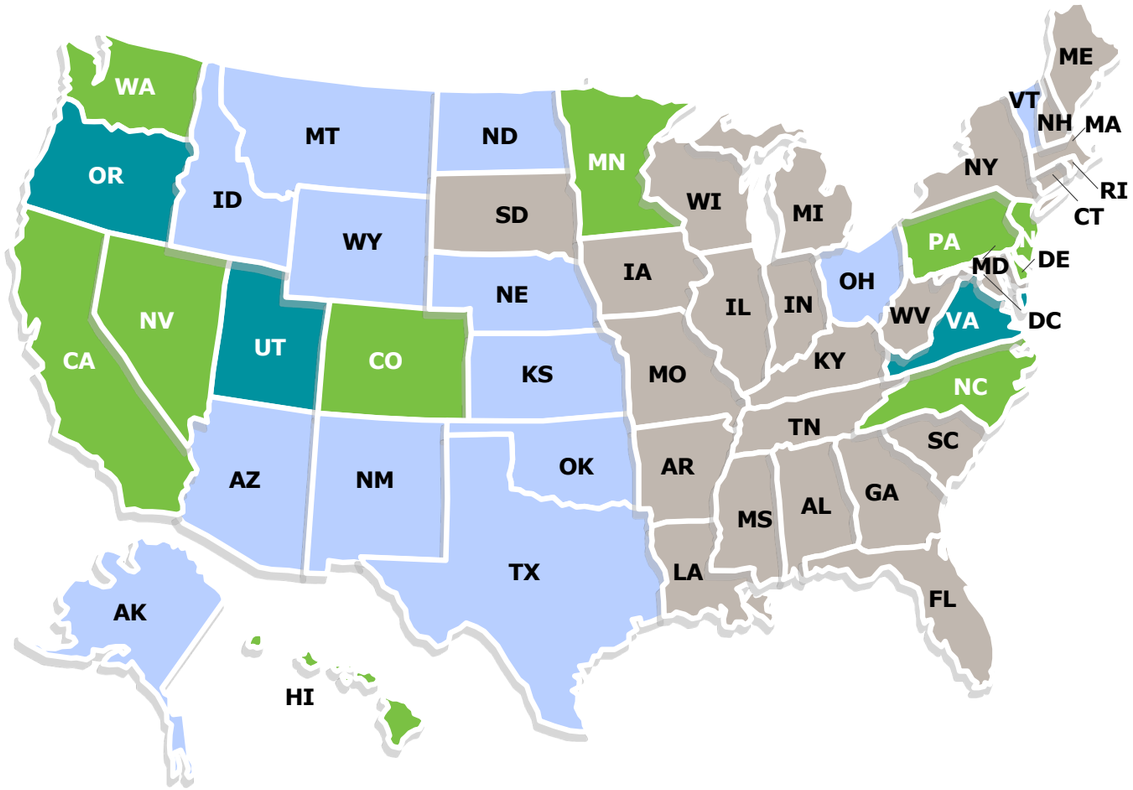
Distance-based usage charging has emerged in several states, with pilot tests of the mechanism in 10 others.

Oregon began investigating road usage charging (RUC) in 2001, enacted a law in 2013, and launched the ORe*GO* program July 1, 2015. Today, ORe*GO* is eligible to any vehicle over 20 miles per gallon. Participants pay 1.8 cents per mile and receive credits for fuel taxes paid. They also avoid registration surcharges for high-MPG and electric vehicles. Users can choose between multiple account managers and reporting methods, including GPS and non-GPS options. GPS users receive exemptions for out-of-state miles traveled.

Beginning in 2020, electric and hybrid vehicle owners in Utah have the option to pay a 1.5 cent per-mile fee in lieu of annual registration surcharges. Fees are capped at what the annual flat fee would be for the vehicle at the time of registration. Participants report miles via a plug-in device that counts miles driven or in-vehicle telematics.

Virginia enacted a mileage-based fee on all vehicles over 25 MPG slated to begin July 1, 2022. Vehicles may pay a flat fee, which increases with MPG, or opt to enroll in the mileage-based system.

The Surface Transportation System Funding Alternatives Program (STSFA) provides grants to states to demonstrate user fee mechanisms like RUC. To date over a dozen states and regional consortia have received funding to conduct demonstration projects.



3 Enacted programs 10 Pilots/demonstrations 13 Active research

Charging for heavy vehicle usage based on distance and weight exists in four states, with a fifth enacted in 2021

Four states currently collect weight-distance taxes: Oregon, New York, Kentucky, and New Mexico. Weight-distance or weight-mile taxes are assessed on a per-mile basis, with the rate varying by vehicle weight and number of axles. The tax is intended to compensate for additional damage done to roadways by heavier vehicles. For example, Oregon (illustrative tax tables pictured at right) assesses a distinct rate for every 2,000 pound weight increment between 26,001 and 80,001 lbs. going from 6.54 cents per mile (cpm) to 21.5 cpm. Vehicles over 80,001 lbs. pay between 17.01 cpm and 30.25 cpm depending on the number of axels.

Other states' rates and subject vehicle definitions differ. in Oregon and New Mexico, vehicles over 26,000 pounds must report and pay weight-mile taxes, whereas vehicles over 18,000 pounds are subject in New York and only those over 59,999 are subject in Kentucky. Oregon's weight-mile tax is the most mature program and collects the greatest amount of revenue (over $400 million per year). Notably, trucks paying the weight-mile tax in Oregon do not pay taxes on diesel fuel.

In the mid-20th century over 20 states collected weight-distance or ton-mile taxes. Many states eliminated their programs in favor of diesel taxation owing to uneven enforcement and challenges from the trucking industry. Nevada repealed its weight-distance tax in 1989. More recently, Oregon has added an electronic reporting option (2015), Rhode Island has implemented a truck-only toll on all major highways and bridges (2019), and Connecticut has enacted a weight-mile tax (2021) scheduled to begin operating in 2023.

TABLE "A" FOR ALL TYPES OF FUEL (OVER 26,000 LBS)

COLUMN A WEIGHT GROUP	COLUMN B MILLS (1/10 OF 1 CENT) PER MILE	COLUMN C DOLLARS PER MILE* DECIMAL FRACTION	COLUMN A WEIGHT GROUP	COLUMN B MILLS (1/10 OF 1 CENT) PER MILE	COLUMN C DOLLARS PER MILE * DECIMAL FRACTION
26,001 - 28,000	65.4	.0654	52,001 - 54,000	109.3	.1093
28,001 - 30,000	69.3	.0693	54,001 - 56,000	113.4	.1134
30,001 - 32,000	72.4	.0724	56,001 - 58,000	118.1	.1181
32,001 - 34,000	75.7	.0757	58,001 - 60,000	123.5	.1235
			60,001 - 62,000	129.9	.1299
34,001 - 36,000	78.6	.0786			
36,001 - 38,000	82.7	.0827	62,001 - 64,000	137.1	.1371
38,001 - 40,000	85.8	.0858	64,001 - 66,000	144.9	.1449
40,001 - 42,000	88.9	.0889	66,001 - 68,000	155.2	.1552
			68,001 - 70,000	166.2	.1662
42,001 - 44,000	92.2	.0922	70,001 - 72,000	177.1	.1771
44,001 - 46,000	95.3	.0953			
46,001 - 48,000	98.4	.0984	72,001 - 74,000	187.3	.1873
48,001 - 50,000	101.6	.1016	74,001 - 76,000	196.9	.1969
50,001 - 52,000	105.4	.1054	76,001 - 78,000	206.4	.2064
			78,001 - 80,000	215.0	.2150
			80,001 AND OVER	USE TABLE B	

*NOTE - Column C converts mills per mile to dollars per mile by moving the decimal point three places to the left. Multiply the decimal fraction by the Oregon Taxable Miles for the amount of tax due for each weight.

TABLE "B" AXLE - WEIGHT MILEAGE TAX RATES

COLUMN A	5 AXLES		6 AXLES		7 AXLES		8 AXLES		9 AXLES or more	
	COLUMN B	COLUMN C*	COLUMN B	COLUMN C*	COLUMN B	COLUMN C*	COLUMN B	COLUMN C*	COLUMN B	COLUMN C*
DECLARED COMBINED WEIGHT GROUPS (POUNDS)	MILLS	$ PER MILE DECIMAL FRACTION	MILLS	$ PER MILE DECIMAL FRACTION	MILLS	$ PER MILE DECIMAL FRACTION	MILLS	$ PER MILE DECIMAL FRACTION	MILLS	$ PER MILE DECIMAL FRACTION
80,000 AND UNDER	USE TABLE A		USE TABLE A		USE TABLE A		USE TABLE A		USE TABLE A	
80,001 to 82,000	222.1	.2221	203.1	.2031	189.9	.1899	180.4	.1804	170.1	.1701
82,001 to 84,000	229.3	.2293	206.4	.2064	193.0	.1930	182.7	.1827	172.4	.1724
84,001 to 86,000	236.1	.2361	211.1	.2111	196.1	.1961	185.0	.1850	174.8	.1748
86,001 to 88,000	244.1	.2441	215.7	.2157	199.2	.1992	188.2	.1882	177.1	.1771
88,001 to 90,000	253.6	.2536	221.3	.2213	202.5	.2025	191.3	.1913	180.4	.1804
90,001 to 92,000	264.6	.2646	227.6	.2276	205.4	.2054	194.5	.1945	183.5	.1835
92,001 to 94,000	276.5	.2765	233.8	.2338	208.7	.2087	197.6	.1976	186.0	.1860
94,001 to 96,000	289.1	.2891	241.0	.2410	212.6	.2126	200.8	.2008	188.9	.1889
96,001 to 98,000	302.5	.3025	249.7	.2497	217.3	.2173	204.1	.2041	192.2	.1922
98,001 to 100,000			259.0	.2590	222.1	.2221	207.9	.2079	195.3	.1953
100,001 to 102,000					226.8	.2268	212.6	.2126	198.5	.1985
102,001 to 104,000					231.5	.2315	217.3	.2173	202.5	.2025
104,001 to 105,500					237.8	.2378	222.1	.2221	206.4	.2064

*NOTE - Column C converts mills per mile to dollars per mile by moving the decimal point three places to the left. Multiply the Oregon Taxable Miles by the decimal fraction for the amount of tax due for each weight.

FREIGHT RELATED FEES

Other freight-specific taxes have been proposed but remain rare in practice

Freight can be subjected to a range of specific fees due to higher degree of regulation and monitoring of freight related trips. User fees applicable to freight are container fees, bulk cargo fees, and combined license fees. Container fees and bulk cargo fees typically have restrictions on their spending, targeting the movement of containers or the bulk good. Most container fees are assessed on a flat rate to fund maintenance and operations, like Indiana's $10 per container fee, while others are intended to induce behavioral changes like The Port of Los Angeles and Long Beach, where fees are assessed only during peak congestion periods to shift movements to off-peak hours.

Other fees proposed, but not yet enacted on freight in the United States, are higher per mile fees on freight traffic as Germany does. A surcharge on the value of commercial activity conducted on roadways, alternatively a value added tax on road freight, has also been proposed but not enacted in any state.

INDIRECT USAGE FEES

Several states have examined indirect usage fees on driving

Indirect usage fees are fees that attempt correlate taxes with the amount of road consumption (driving). Fuel taxes are the most notable indirect usage fee, since they have historically served as a proxy for road usage taxes, at a lower cost to assess than taxing drivers directly for actual road usage. Like fuel taxes, fees on batteries, tires, and electricity have been proposed as indirect usage fees since they represent essential vehicle components for driving.

Batteries: California assesses a $1 fee on the sale of lead-acid batteries to finance the clean up of lead battery acid recycling facilities. However, no state taxes car batteries (whether internal combustion or electric) to fund transportation. Electric or hybrid vehicles could theoretically be taxed based upon the presence of battery technology or based on battery capacity.

Tires: Many states assess a tax on the sale of tires at the time of purchase primarily to fund tire recycling and disposal, ranging from $0.25 to $5 per tire. States that tax tires (other than general retail sales taxes) charge flat rates or vary rate based upon tire weight or diameter. The federal government applies the tax only on heavy truck tires as a funding mechanism for the federal Highway Trust Fund.

Electricity: Oklahoma and Iowa have both enacted a tax on electricity, measured in kilowatt-hours (kWh) at electric vehicle charging stations. The purpose of these taxes is to assess road usage fees on EVs. In Oklahoma, the tax applies only on public charging stations, ostensibly to capture revenue from EVs visiting from other states, under the presumption that resident EV owners charge their vehicles primarily at their homes and business. In Iowa, the tax applies to all non-residential EV chargers. Oklahoma will charge 3 cents per kWh, while Iowa will charge 2.6 cents per kWh.

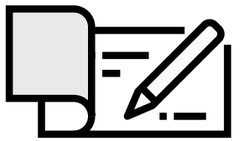
GENERAL TAXES

General Fund appropriations to transportation are especially common at the local level

The federal government and most states employ general fund revenues to cover transportation funding shortfalls. Every year since 2008 the gap between the spending authorized by Congress and the revenues collected in the Highway Trust Fund are covered by Treasury general fund transfers. **Through late FY2021 these outlays will have totaled $143.6 billion.**

Of the 50 states and District of Columbia, 38 employed General Fund revenues to fund transportation funding in 2019. However, among those 38 states, general fund transfers accounted for only 5.8% of total transportation outlays. New Mexico, the District of Columbia, and Alaska accounted for the highest proportion of general fund outlays at 27.1%, 25.9%, and 19.4%, respectively. The three highest in absolute terms were New York, Pennsylvania, and Texas at $1.79 billion, $1.145 billion, and $651 million, respectively.

Local governments employ general funds to a higher degree in roadway and transportation spending than state and national bodies**. In 2018 highways and roads accounted for the 5th largest general fund outlay for state and local government general expenditures nationally totaling 6% of all direct spending or $187 billion.** Local governments also rely on general fund revenue for transit operations, largely funded through sales, property, income, and payroll taxes. For example, Oregon assesses a payroll tax on residents within the Trimet service district (metropolitan Portland), and a statewide transit payroll tax on all Oregon works. Both taxes are paid by the employer.



$143.6 B

Federal outlays through FY2021

5.8%

Across the 38 states making general fund transfers, average percent of total transportation outlays

27.1%	25.9%	19.4%
NM	DC	AK

States with highest percent of general funding for transportation

$1.79B	$1.15B	$651M
NY	PA	TX

States with highest absolute terms

MECHANISMS THAT AIM TO INFLUENCE BEHAVIOR

Charging for congestion, a form of Pigouvian tax, is rare in the U.S.

Emissions and congestion are two major negative impacts or “external costs” of roads. Taxing emissions and congestion are two forms of tax known as a Pigouvian taxes, or sin taxes. The concept is simple: tax undesirable activities or behaviors in order to reduce their occurrence.

Congestion pricing comes in several categories. Cordon-based charges like those found in Stockholm and Milan charge for entering a defined area. Most commonly, *cordon charges* impose a fee upon entrance to or exit from a defined geographic area. *Area charges* assess a fee on all vehicles within an area whether the trip originated there or not. Finally, *zonal charges* are collections of smaller zones with differentiated rates being assessed upon each entry or exit into the sub-zones. The second major category is facility or network specific: priced lanes (also known as express lanes or managed lanes), variably tolled roadways, and system wide charges. High-occupancy/toll (HOT) lanes are an example of priced lanes, while users of Singapore’s ‘strategic-road-network’ are subject to variable rates dependent upon the time of day.

Other than express toll lanes, now common across the U.S., congestion pricing has not found favor. To date only New York has enacted a congestion charge for lower Manhattan. Implementation will occur following an environmental review process.

MECHANISMS THAT AIM TO INFLUENCE BEHAVIOR

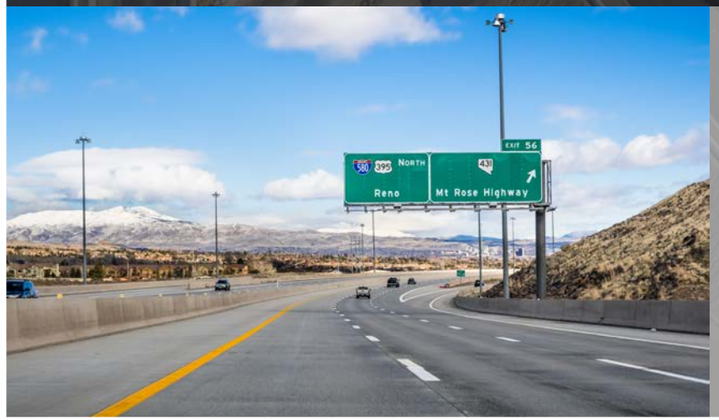
Carbon pricing to discourage emissions likewise remains rare in the U.S.

Cap and Trade: Cap-and-trade establishes costs for carbon emissions by limiting the overall units of carbon allowed to be admitted within a jurisdiction and charging for the privilege to do so. Emissions are reduced over time by decreasing the annual allowance of credits, which correspondingly increase the cost to emit.

Cap-and-trade has largely been applied to stationary emitters such as power plants and industrial plants rather mobile emitters. However, cap-and-trade systems have been extended to the transportation system in California by extending coverage to large distributors of natural gas and petroleum. Washington enacted a cap-and-trade program set to begin in 2023, while an 11-state consortium of Northeastern states launched the Regional Greenhouse Gas Initiative (RGGI) in 2020. Unlike a carbon tax, cap-and-trade does not generate revenue for collection by government.

Low Carbon Fuel Standard (LCFS): Although not a revenue mechanism, LCFS seek to reduce the carbon intensity of fuel production and use through regulation. The standards look at the production as well as consumption of fuels and through regulations and fees induce suppliers to reduce intensity. Suppliers can reduce intensity by improving the efficiency of their production processes; produce and/or blend low-carbon biofuels; purchase credits generated by low-carbon fuel providers.

Carbon Tax: A carbon tax sets a price on one metric ton of carbon dioxide which is approximately the amount of societal harm that ton will cause if emitted. The quantity of foregone emissions is therefore determined by the market, not a hard cap. Governments may levy the tax at any point in the supply chain, from the point of fuel production (upstream) through distribution (midstream) to the ultimate emitter (downstream). Historically, applying the fee upstream was considered the most feasible technically and administratively. The major drawback of this approach is the cost of the fee is not transparent to the end consumer, becoming masked in the per gallon price of fuel. A transparent downstream tax introduces a personal responsibility element that is nonexistent when price changes are observed at the pump. Visible taxes with attributable purposes are more likely to cultivate behavioral changes than purely economic factors. To date, no U.S. jurisdiction has enacted a carbon tax at any point in the supply chain.



Section 3

Transportation Revenue Sources in Nevada

PRIOR TRANSPORTATION REVENUE PROPOSALS

Prior efforts to reform transportation revenue found success in Washoe and Clark Counties

- **Roads to the Future Blue Ribbon Commission (2006).** To fund a package of identified investments and mega-projects, the commission recommended general fund transfers, indexing state fuel tax to inflation, adjusting GST depreciation schedule, redirecting sales tax to highway fund permanently, and allowing P3s, tolling, congestion pricing, and HOT lanes. None of these were acted on.
- **Senate Concurrent Resolution 3 (2019).** Examined funding needs, energy priorities, and alternative funding models, leading to the recommendation to create the AWG.
- **Fuel Revenue Indexing (FRI)**. Washoe (by referenda in 2002/2008 and enacted in 2003/2010) and Clark (initiated 2014, extended for 10 years by referendum in 2016) enacted FRI, which provide a major source of new funding to their respective Regional Transportation Commissions. Voters in all other counties rejected referenda to impose FRI in 2016.
- **Local and regional revenue alternatives explorations**.
  - Carson Area MPO recently undertook an examination of eight revenue alternatives across 10 evaluation criteria (presented at August AWG meeting).
  - Douglas County (2013-14) created a Road Funding Task Force to develop solutions to road funding challenges.

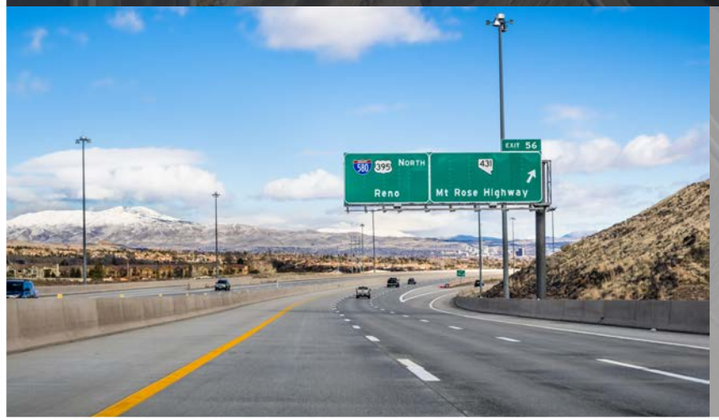
Advisory Working Group Charter

An examination of the financial sustainability of the State Highway Fund must be undertaken and the recommendations must be included in the final report due to the Legislature by December 31, 2022. This must include an assessment of at least two alternative transportation funding approaches that have been identified.

Consistent with AB 413, new approaches to multimodal transportation funding for all users must take into account the need to improve social equity, user equity, and reduce GHG emissions. Finally, the role that land use and smart growth strategies can play must be considered.

The range of transportation revenue mechanisms currently used in Nevada is similar to many other states

Category	Type of tax	Used in Nevada?	States used in
Fuel taxes	Flat per-gallon excise fuel tax	Yes	50
	Excise tax with inflation index on per-gallon rate	Yes (Washoe & Clark Counties only)	7
	Variable-rate tax based on the price of fuel	No	13
	Sales tax on fuel	No	4
	Local-option (county) fuel taxes	Yes	5
	Excise tax with fuel efficiency index	No	1
Vehicle fees	Basic license fees	Title & registration	50
	Value	Yes (GST)	27
	Weight	Heavy vehicles only	14
	Fuel economy	No	2
	Engine type	No	28
	Age	No	4
Direct usage-based fees	Tolls	No	35
	Road usage charge (light vehicles)	No	3
	Weight-distance tax	Repealed in 1989	5
Other freight sector fees	Container fees, value-added tax on freight traffic	No	2
Indirect usage fees	Batteries, tires, electricity	No	2 (kWh)
General fund transfers	General fund transfers	Yes	38
Pigouvian taxes	Congestion charges	No	1
	Carbon taxes	No	0



Section 4

State of Play: Transportation Electrification in the U.S.

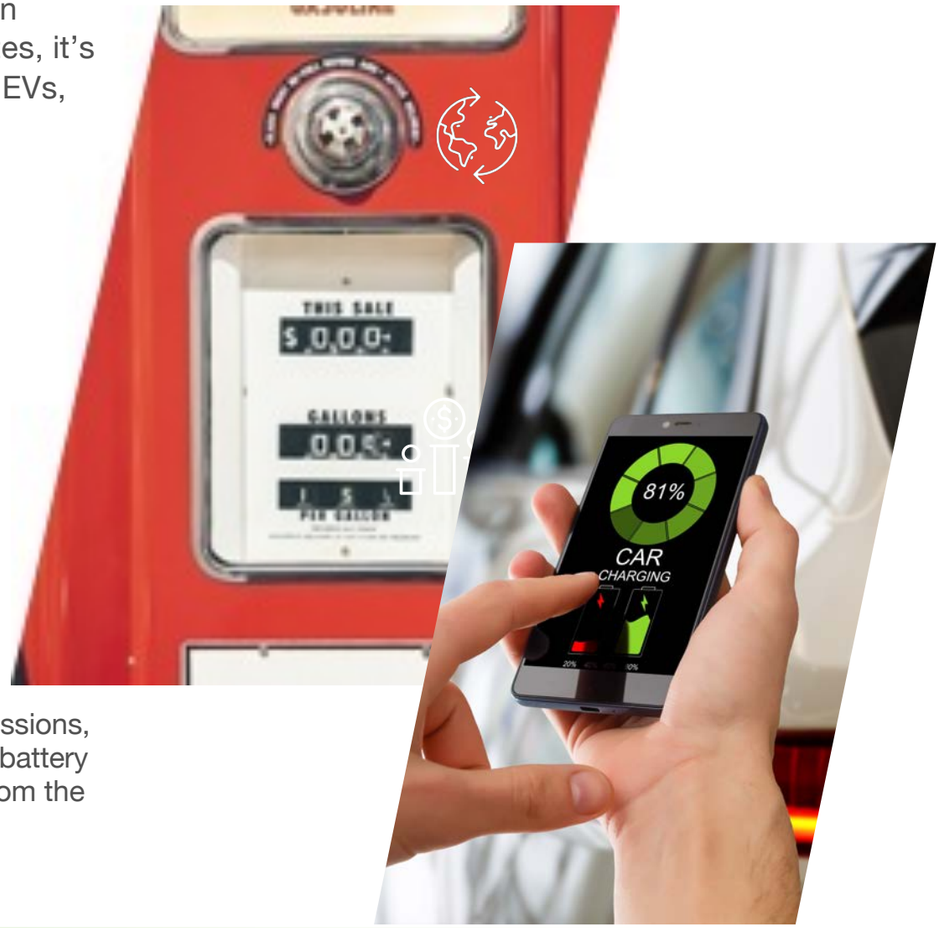
SECTION OVERVIEW

The rate of the passenger vehicle fleet's transition to electric drive will determine the rate of decline in gas tax revenue per mile.

Advance technology vehicles – especially plug-in electric vehicles – are key to reducing carbon emissions from the transportation sector. As the transition to zero-emission vehicles accelerates, it's important to understand the pace of the transition, potential barriers to consumer adoption of EVs, and which public policy measures are effective and necessary to facilitate this transition.

Section contents:

- **Deadlines** for phasing out internal combustion engine vehicles and **targets** for adoption of zero-emission vehicles[1]
- Electric vehicle **sales trends** and forecasts in the U.S. and Nevada
- **Challenges** to consumer adoption of electric vehicles
- **Public policies** and programs to incentivize adoption and support electric miles traveled



[1]Zero-emission vehicles refers to the classification of vehicle engine technologies that have no tailpipe emissions, except perhaps a small amount of water. Practically speaking, this refers to electric drive vehicles: plug-in battery electric vehicles (zero tailpipe emissions), and hydrogen fuel cell vehicles (small amount if residual water from the tailpipe). For the remainder of this Section, the term "electric vehicles" will be used.

DEADLINES AND TARGETS

Currently, the transition to an all-electric passenger vehicle fleet requires new car buyers to choose electric vehicles over of gas-powered vehicles.

Since the launch of the Nissan Leaf to the mass consumer market in 2011, the pace of transition to an all-electric vehicle fleet has depended entirely on consumer choice.

Except for a limited number of municipal fleets, there are no current requirements in the U.S. for consumers to purchase an electric vehicle. Rather, consumers must be *enticed* to choose an electric vehicle – just like other products in a competitive marketplace.

Governments all over the world have set targets for consumer adoption of electric vehicles. Some have set market share goals, where adoption is measured by the percentage of new EVs sold. Others set goals for the overall percentage of registered EVs in their jurisdiction. A few governments set unit targets for raw number of EVs purchased -- including the initial U.S. goal of 1 million EVs on the road by 2015.

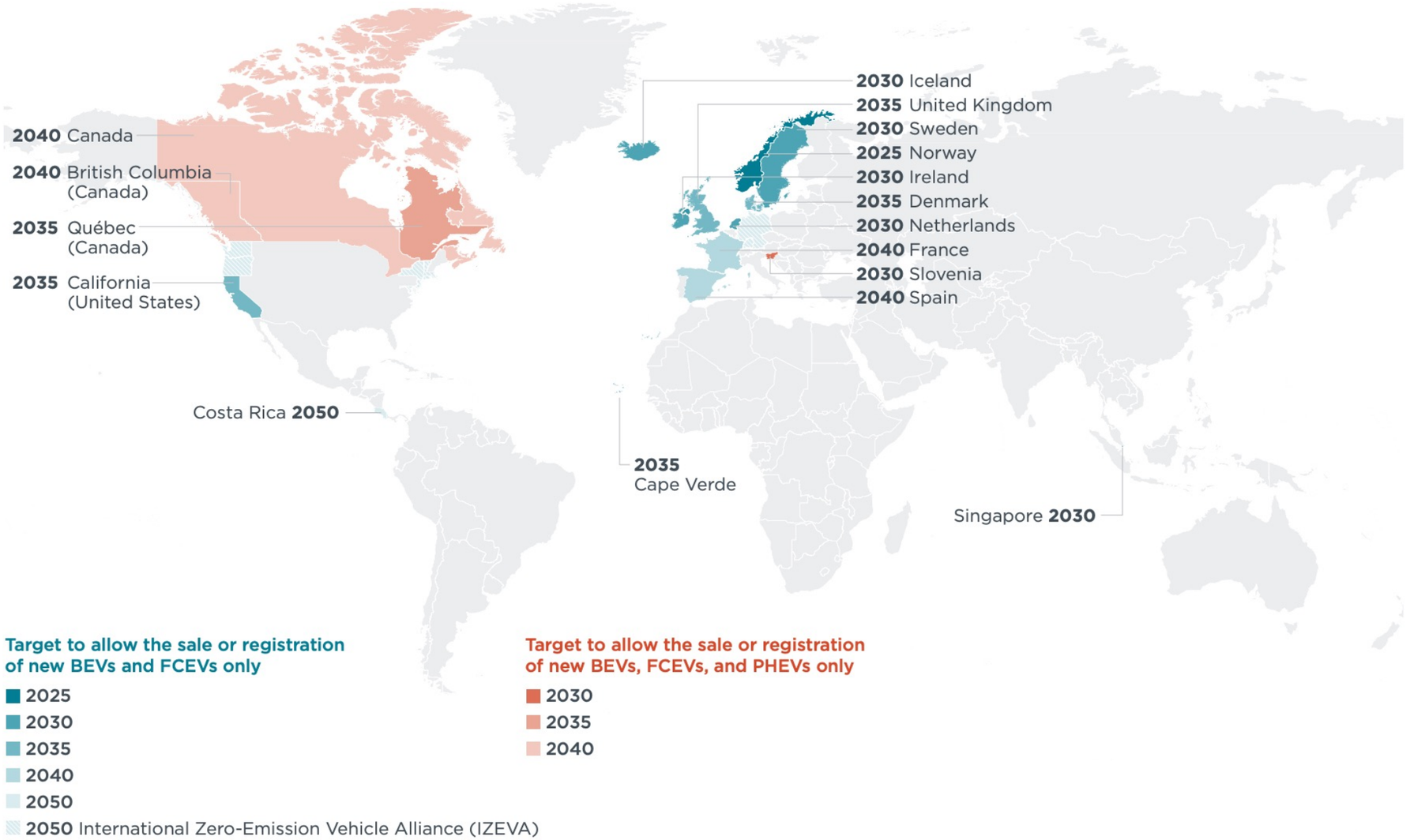
Another way of measuring penetration of electric vehicles is by number of ”electric miles” traveled, or eVMT. This measure places greater emphasis on using EVs as the primary means of driving, with gas-powered vehicles relegated to second-car position, thereby displacing carbon emissions.

Jurisdiction	2015	2025	2030	2035	2040	2050
United States	1 million[U]		50%[M]			75%[eVMT]
Norway		100%[M]				
Israel					100%[F]	
U.K.					100%[M]	
China			40%[M]			
California		1.5 million[U]	5 million[U]			
ZEV States		15%[M]				
Los Angeles		25%[F]		80%[F]		100%[F]
Nevada	28% total GHG reduction by 2025					

M = Market share goal. F = EVs as % of entire vehicle fleet.
U = Units sold goal. eVMT = electric miles as % of total VMT

To expedite the transition to electric vehicles, many countries have set deadlines for ending the sale of gas-powered passenger vehicles. Some U.S. states are following suit.

Governments with official targets to 100% phase out sales or registrations of new internal combustion engine cars by a certain date* (Status: June 2021)



* Includes countries, states, and provinces that have set targets to only allow the sale or registration of new battery electric vehicles (BEVs), fuel cell electric vehicles (FCEVs), and plug-in hybrid electric vehicles (PHEVs). Countries such as Japan with pledges that include hybrid electric vehicles (HEVs) and mild hybrid electric vehicles (MHEVs) are excluded as these vehicles are non plug-in hybrids.

Source: ICCT (August 2021)

SALES TRENDS AND FORECASTS

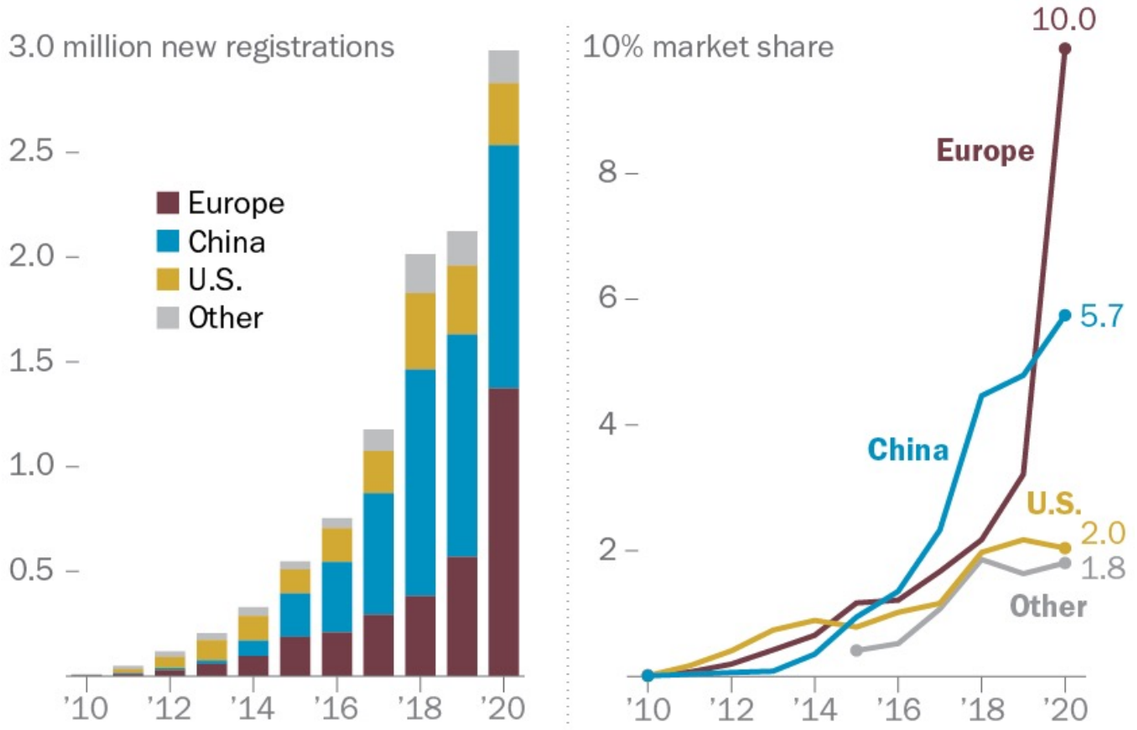
Setting a target (or goal) for the adoption of EVs is the easy part. Hitting the targets have proven more difficult than originally hoped.

By the end of 2020, sales of plug-in electric vehicles (which includes plug-in hybrid, battery electric, and hydrogen fuel cell vehicles) stood at over 1.8 million in the U.S. Worldwide, over 10 million EVs are in operation.

The first national goal for EV sales was announced in 2008 by President Barrack Obama, who set the target of 1 million EVs on the nation's roadways by 2015. However, EV registrations in the U.S. did not reach the 1 million mark until Fall, 2018.

On August 5, 2021, President Biden announced a new goal for electrifying the nation's passenger vehicle fleet: by 2030, 50% of all new cars sold should be zero-emission vehicles. To put this goal in perspective, current electric vehicle sales are only 2.11% of of all passenger vehicles sold.

Unlike when the first national goal was announced in 2008, this time, major automakers support this goal, have several new vehicle models already in production or near release, and have publicly stated that achieving 40 – 50% new vehicle market share for EVs is feasible.



SALES TRENDS AND FORECASTS

Through 2019, California led the nation in EV adoption, with several western states near the top. Nevada's EV sales ranked 10th, slightly above the U.S. average.

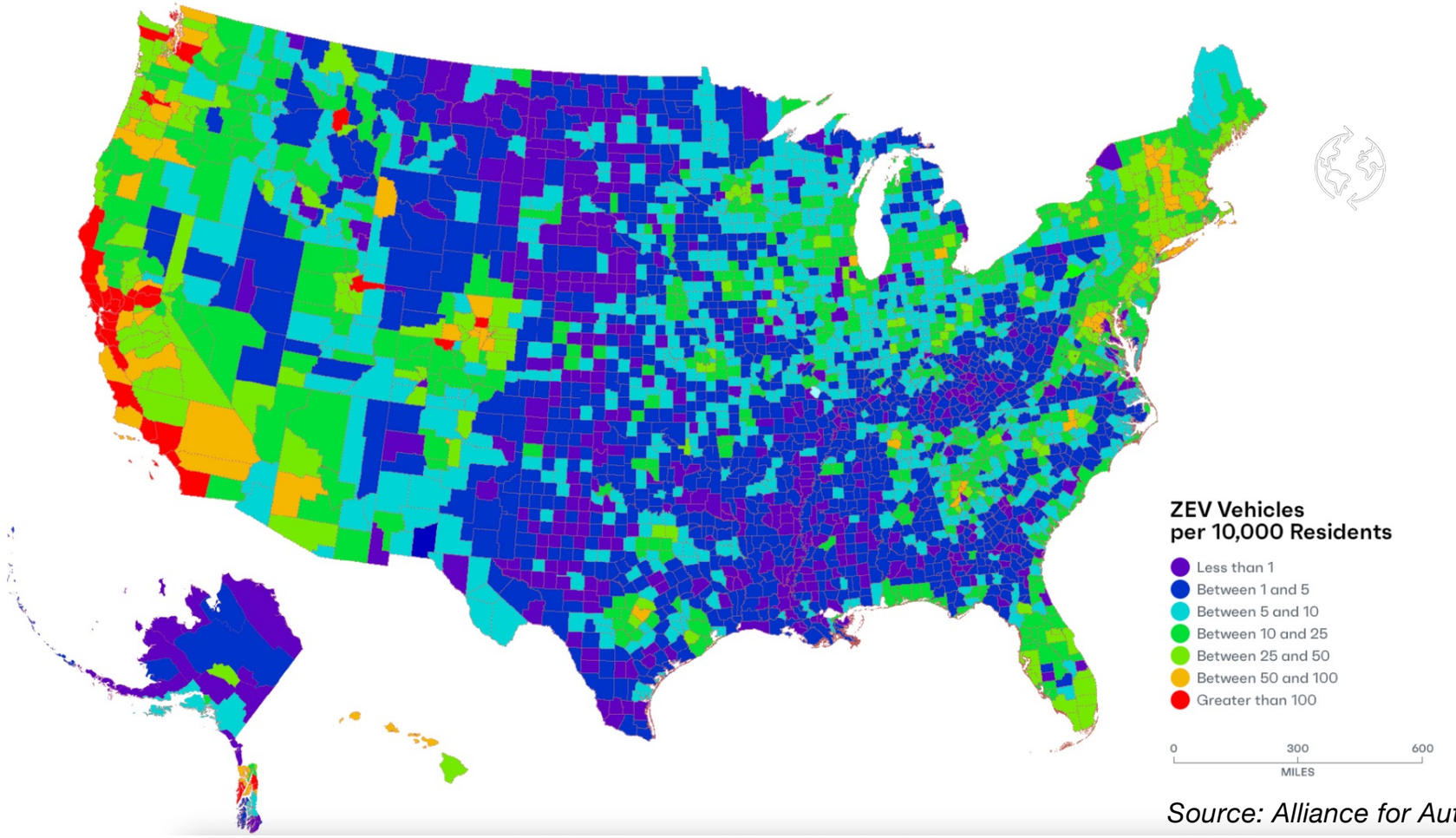
Since the launch of the Nissan Leaf to the mass consumer market in 2011, the pace of transition to an all-electric vehicle fleet has depended entirely on consumer choice.

Prior to the pandemic, **Nevada ranked 10th in the nation in EV sales for the full year of 2019, with 2.3% of new passenger vehicles sold in the state being an electric vehicle.**

Jurisdiction	Annual EV Sales (2019)	EV market share (new vehicles)
California	145,020	7.44%
District of Columbia	1,105	5.41%
Oregon	7,063	4.37%
Washington	12,172	4.26%
Hawaii	3,117	3.17%
Colorado	9,007	2.85%
Arizona	7,591	2.52%
Maryland	6,806	2.49%
Vermont	1,005	2.34%
Nevada	**3,227**	**2.30%**
Total U.S.	320,866	2.11%

SALES TRENDS AND FORECASTS

The western U.S. is leading the nation in EV registrations per capita. About half of EV sales are concentrated in California.

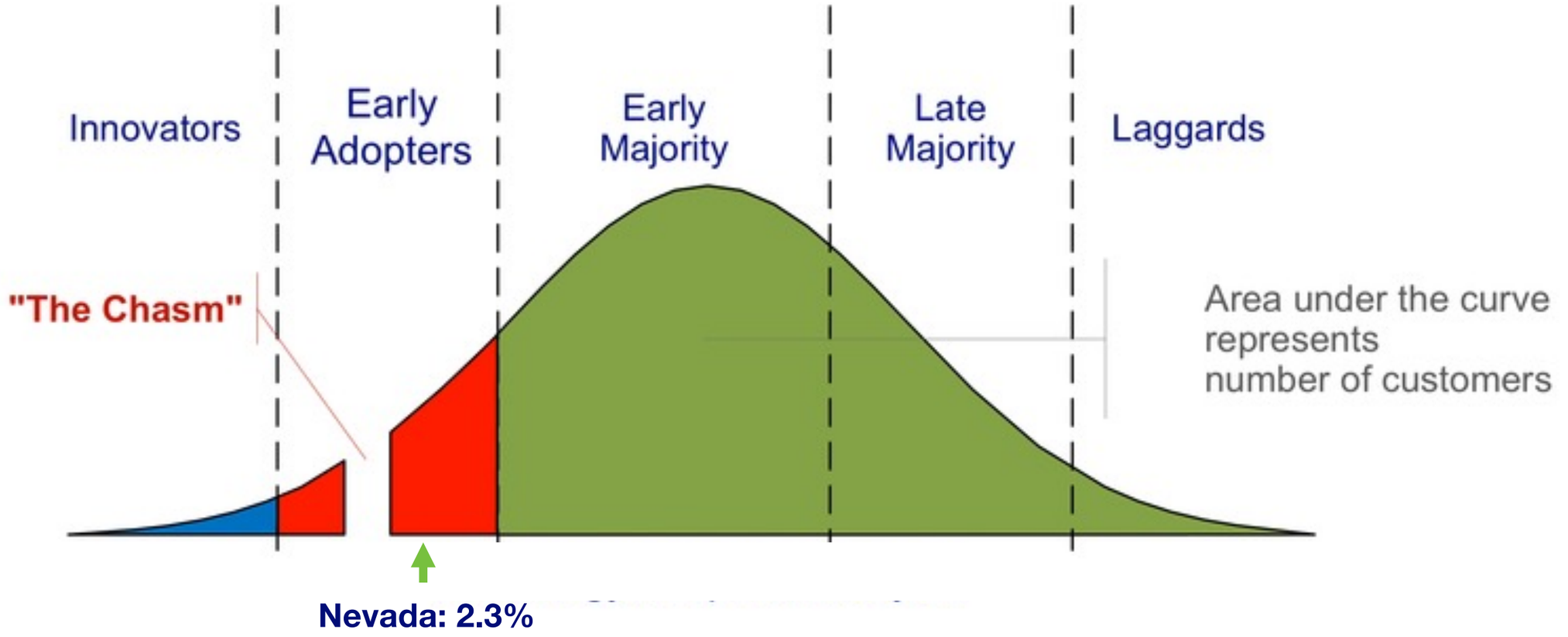


Source: Alliance for Automotive Innovation

EV PURCHASER PROFILES

Absent a ban on new gas-powered vehicle sales, adoption rates for EVs still depend on consumer adoption of a relatively new technology.

Innovation Adoption Curve

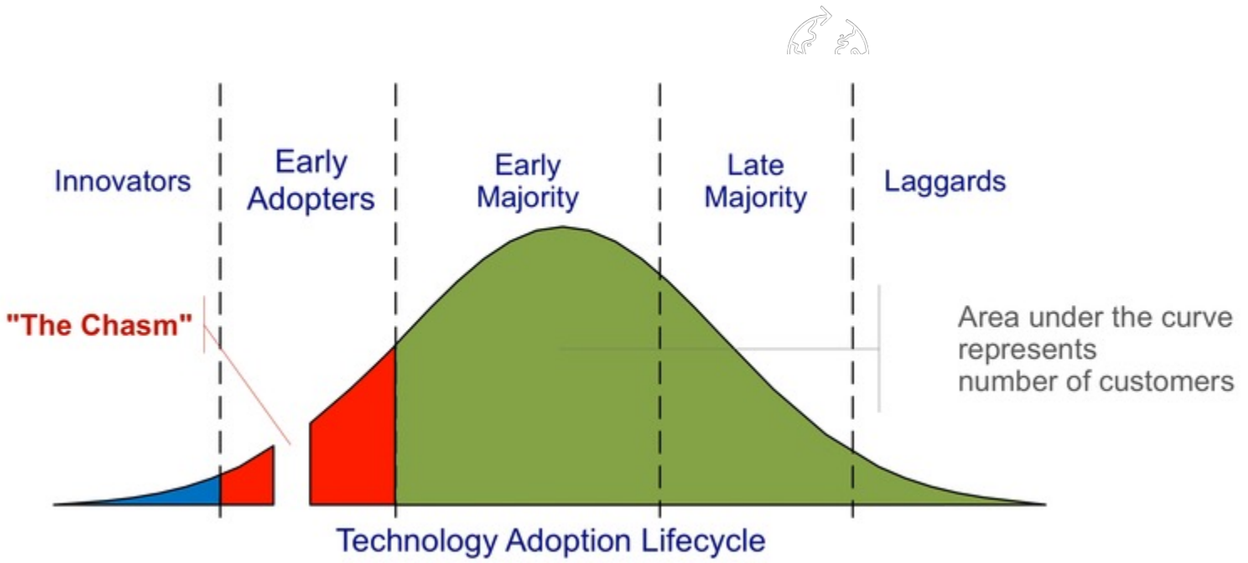


EV PURCHASER PROFILES

Although critical for launch, Innovators are not a large enough market segment to sustain a new technology.

Innovators (or enthusiasts)…

- Are technology enthusiasts or lovers,
- Are willing to buy early release versions even if product quality or reliability are not yet proven or established.
- Want to work with developers and infrastructure providers to improve new products, as source of pride in their own techno-intelligence.
- Are important segments for endorsement about viability of the new innovation category.
- Are not a large enough market segment to be a long-lived or significant source of revenue.



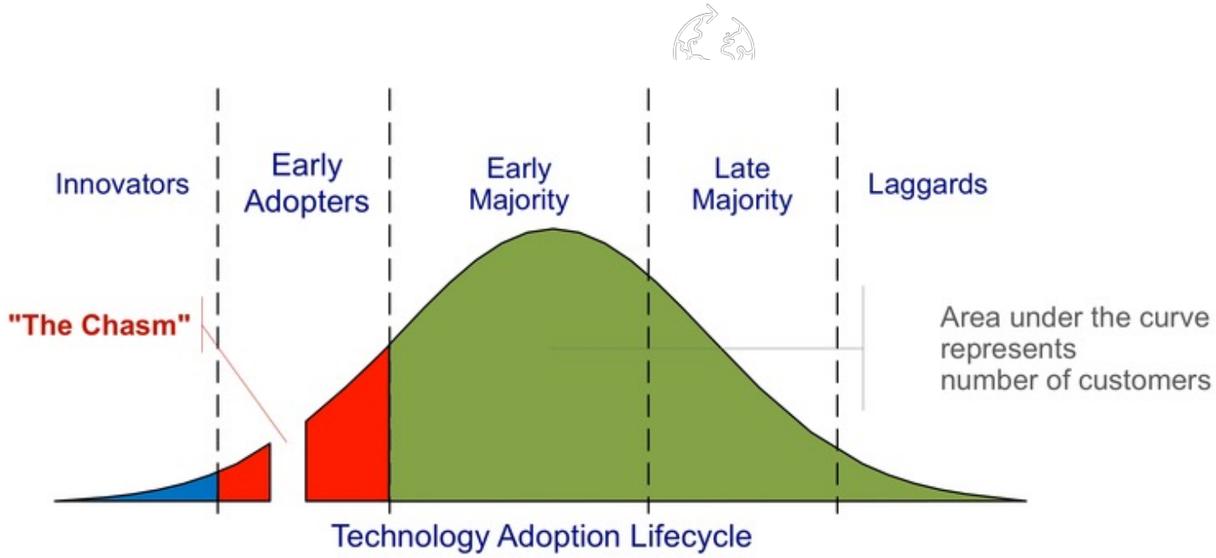
Source: *Overcoming Barriers to Deployment of Plug-in Electric Vehicles, Chapter 3, Understanding the Customer Purchase and Market Development Process for Plug-in Electric Vehicles*. National Academies of Science Press (2015)

EV PURCHASER PROFILES

Early Adopters have different motivations for their purchase – what experts refer to as “psychological benefits”. Price of the product is of less importance than what the product represents.

Early adopters…

- Are less concerned about price and more motivated by psychological benefits, such as visibility of their purchase in their peer group.
- Are more affluent, cosmopolitan, and, typically younger than other categories.
- Are willing and motivated to address early market development problems, including service and infrastructure challenges, which when solved, become a source of pride.
- Are generally considering or comparing purchases not within the product category (for example, with a different vehicle make or model) but with some other major purchase.



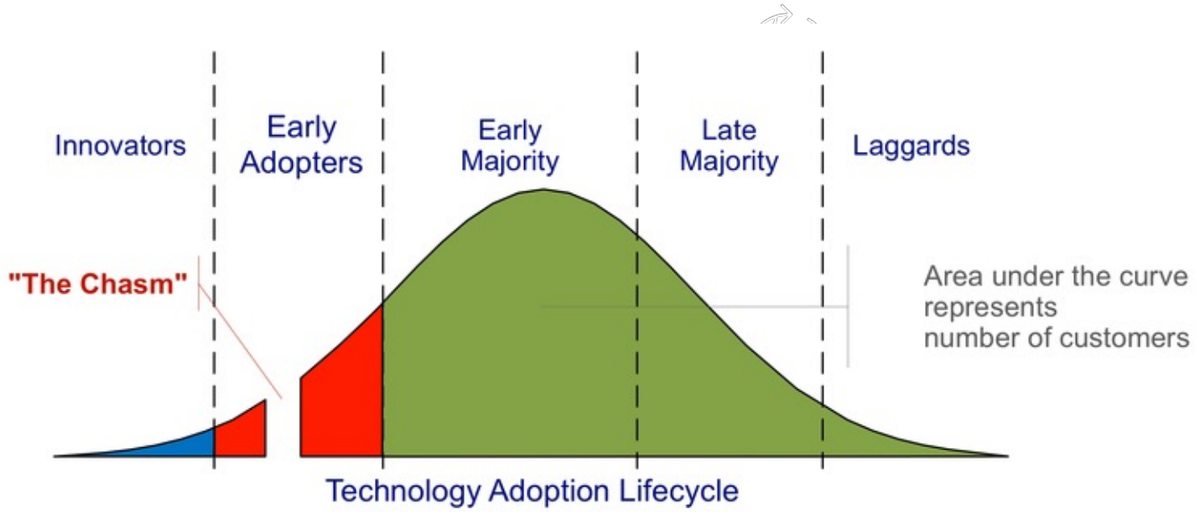
Source: *Overcoming Barriers to Deployment of Plug-in Electric Vehicles, Chapter 3, Understanding the Customer Purchase and Market Development Process for Plug-in Electric Vehicles*. National Academies of Science Press (2015)

CHALLENGES TO CONSUMER ADOPTION

Early Majority consumers are the first sizeable segment of the market. They are pragmatists. If persuaded to adopt the new technology, success will likely follow.

Early majority (pragmatists)…

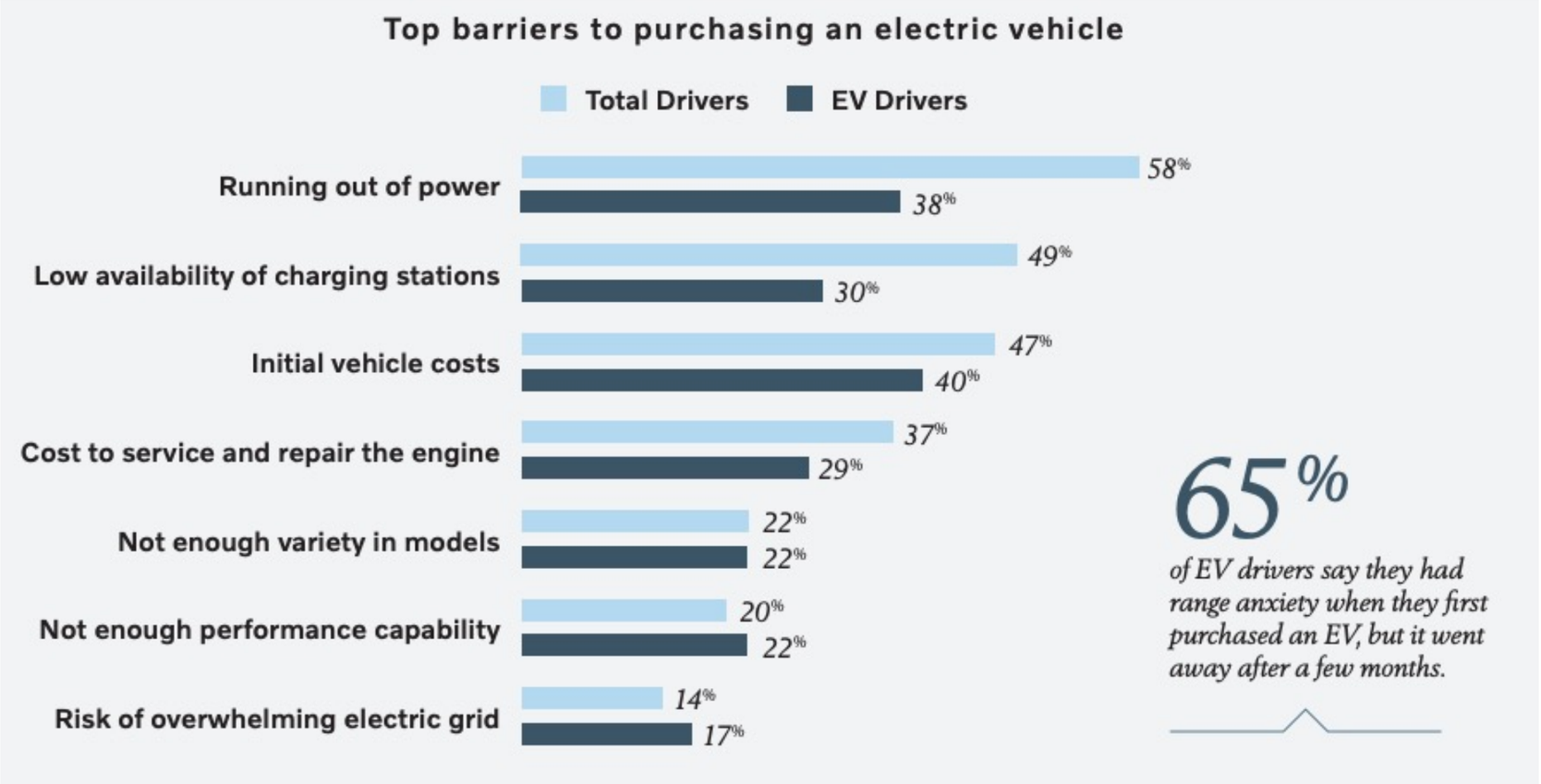
- Are very concerned about value (benefits received relative to price paid).
- Want to evaluate several different models or options within the product category.
- Are willing to purchase only when all elements of the requisite infrastructure are in place.
- Want a hassle-free solution that performs as promised.
- Are not willing to tolerate anxiety or doubt.
- Are first sizable segment of the market by volume.



Source: *Overcoming Barriers to Deployment of Plug-in Electric Vehicles, Chapter 3, Understanding the Customer Purchase and Market Development Process for Plug-in Electric Vehicles*. National Academies of Science Press (2015)

CHALLENGES TO CONSUMER ADOPTION

When polled, potential EVs buyers were most concerned about “range anxiety” – fear of running out of power with no nearby charging station.

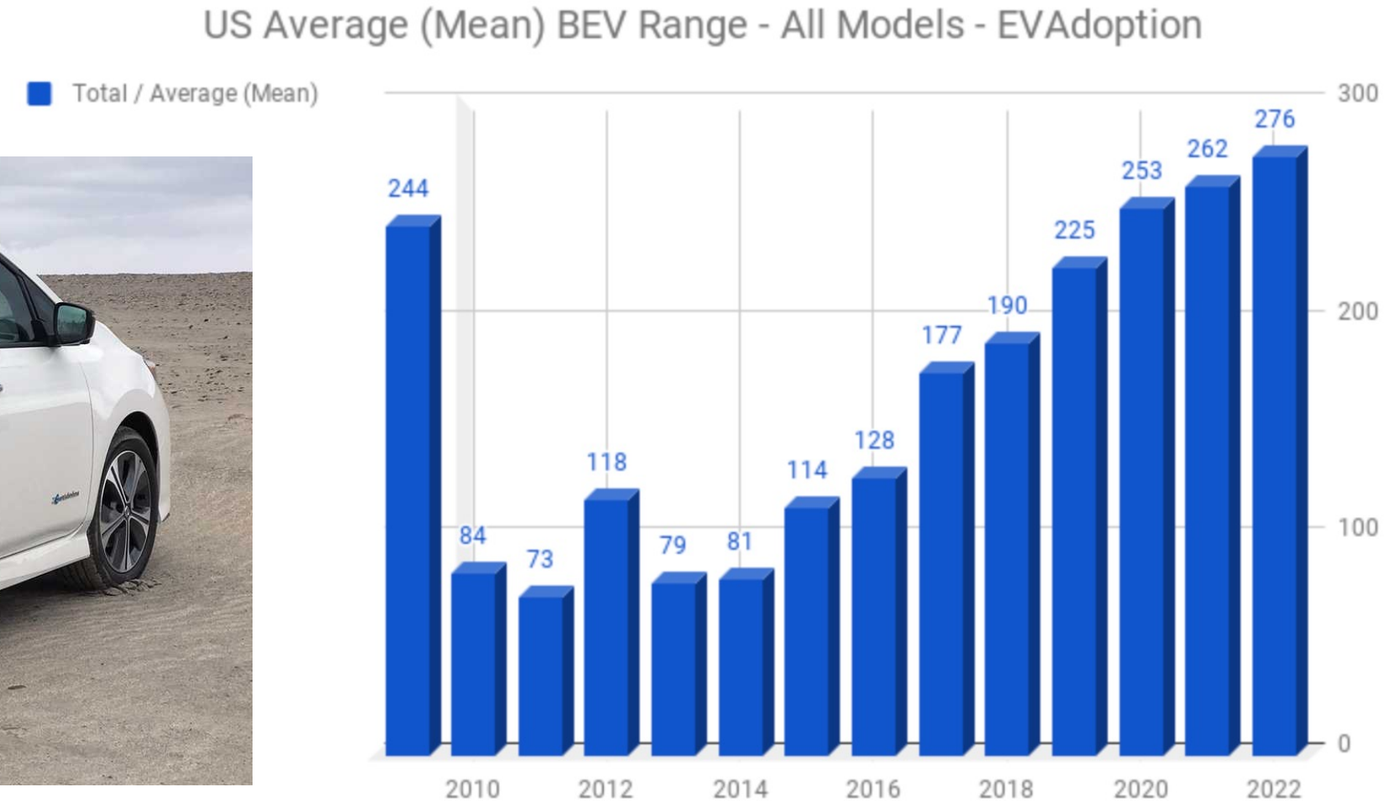


Source: Harris Poll commissioned by Volvo USA, October 11-17, 2018, of 1,510 US drivers ages 18 and older.

BARRIER: FEAR OF RUNNING OUT OF POWER

“**Running out of power**”: battery capacity and EV range is steadily increasing.

Photo by Bradley Berman



- Average EV range increased from 81 miles in 2014 to 190 miles in 2018 (**2019-21 LEAF: 226 miles**)
- Battery range increases average 17% per year
- Each EV model update provides an averages 38 miles of additional range

BARRIER: LOW AVAILABILITY OF CHARGING STATIONS

"**Low availability of charging stations**": a case of Range Anxiety.

- Public charge stations are increasing substantially. Beyond public access chargers, there are many other tools aimed at "reassurance" for those experiencing range anxiety:
  - tow trucks that can charge EVs
  - Small, portable chargers that can provide a little extra juice to get the EV to the nearest charge point
  - Smartphone and dashboard apps that show nearby, available charge points and whether the EV has sufficient battery charge to get there

BARRIER: LOW AVAILABILITY OF CHARGING STATIONS

Strategically located fast charging stations can alleviate range anxiety. The Nevada Electric Highway (and other fast-charging highway corridors) are an important remedy.

Many states have created “electric highway” corridors – including Nevada. In 2017, Nevada helped form the Regional Electric Vehicle (REV) West coalition (CO, UT, ID, WY, NM, AZ, MT) to promote priority corridors and multi-state standards.

Lead: Governor’s Office of Energy

Electric utility partners:
- NV Energy (13 stations)
- Harney Electric Coop (2 stations)
- Mt. Wheeler Power (3 stations)
- Lincoln County Power District (2 stations)
- Overton Power District (2 stations)
- Wells Rural Electric Company (3 stations)
- Valley Electric Association (1 station)
- Raft River Rural Electric Coop (1 station)

State agency partners:
- Nevada DOT (NDOT)
- Nevada Division of Environmental Protection (NDEP)

BARRIER: LOW AVAILABILITY OF CHARGING STATIONS

Essential components for public access Fast Charging stations

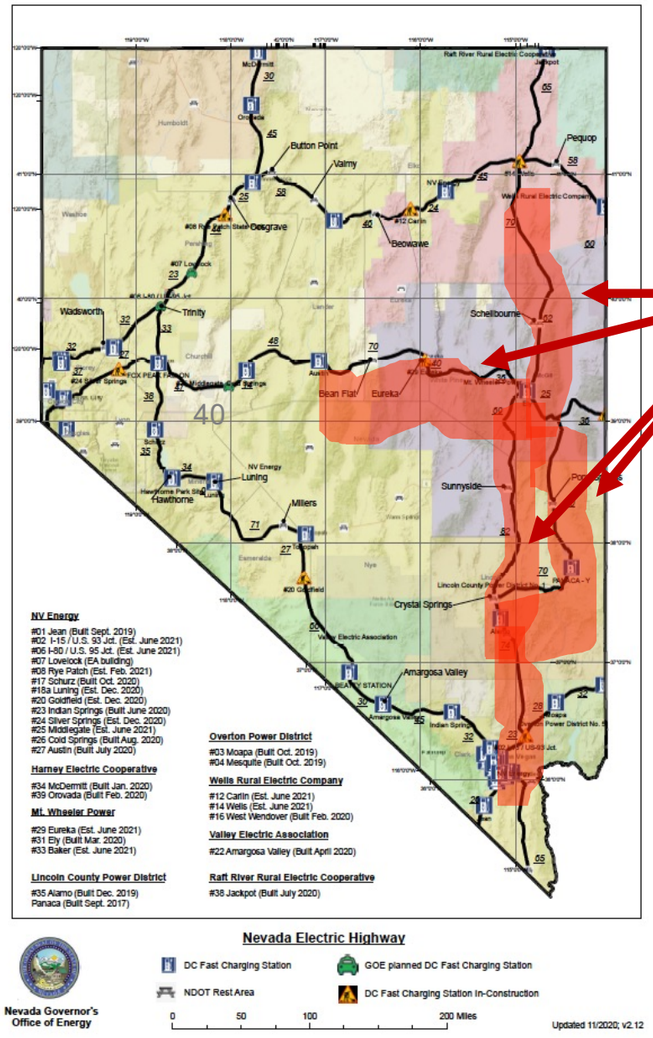
Three most important components:

1 a host site less than 5* miles from the highway exit;

2 reasonable access to 3-phase power supply;

3 transformer capacity.

** Criteria applied from FHWA Interstate oasis program*



Major challenge:

Finding a willing host site with all three essential components every ~50 miles along the highway corridor.

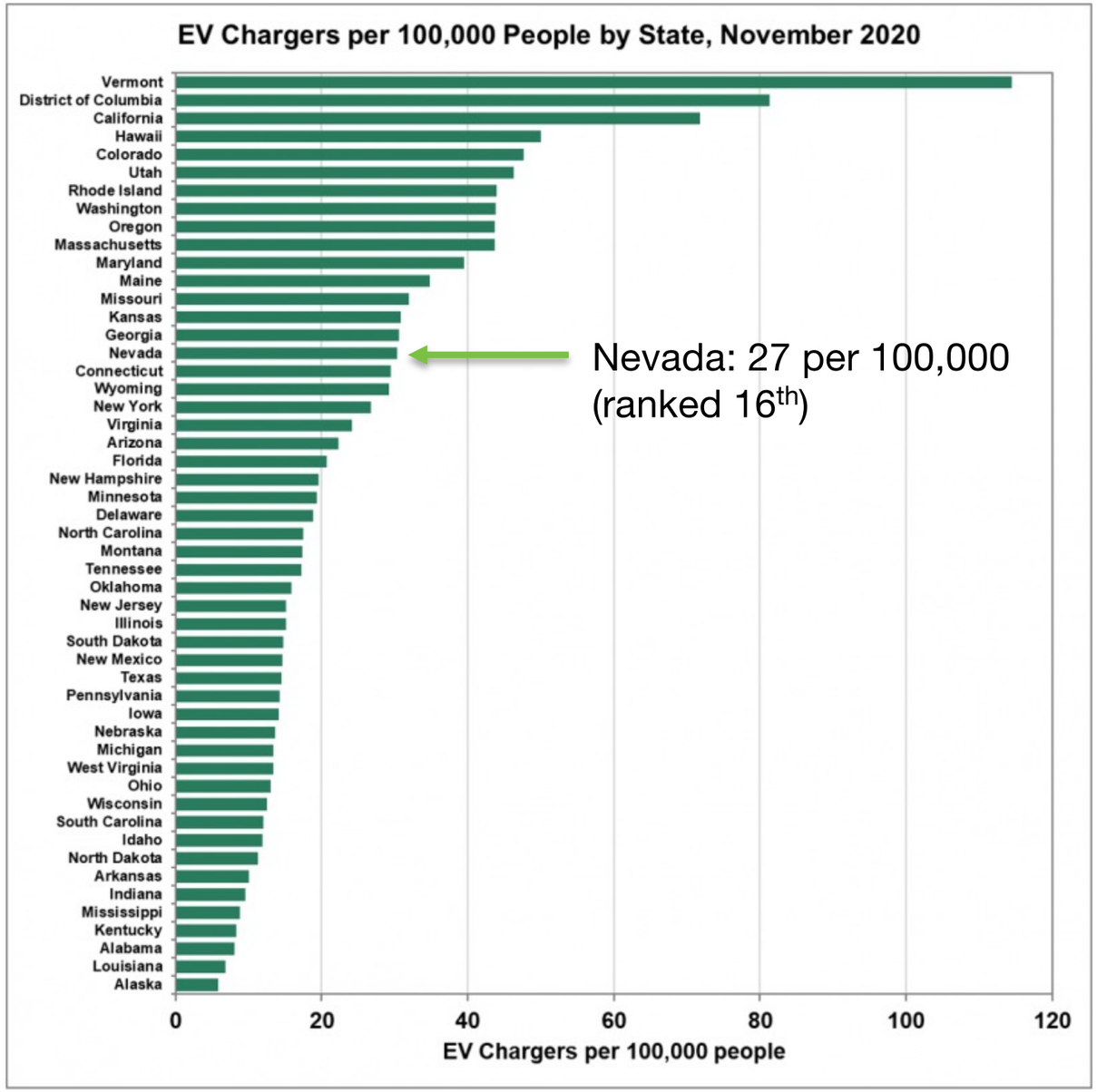
Other challenges:

- Not running afoul of federal law prohibiting the use of ROW along federal aid highways for “commercial purposes.”
- Cost of any required utility upgrades

BARRIER: LOW AVAILABILITY OF CHARGING STATIONS

More public-access charging stations are needed, but progress is being made.

The number of public-access EV charging stations has been growing steadily. As of August 2021, there are over 110,000 public access EV charging stations in the U.S. However, to support the transition of the vehicle fleet to electric by 2030, it is estimated that between 500,000 – 1 million stations will be needed. The recent federal bipartisan infrastructure proposal that has passed both houses of Congress would make substantial investment in public EV charging stations – current figures indicate $7.5 billion that would be made available for EV charging infrastructure.



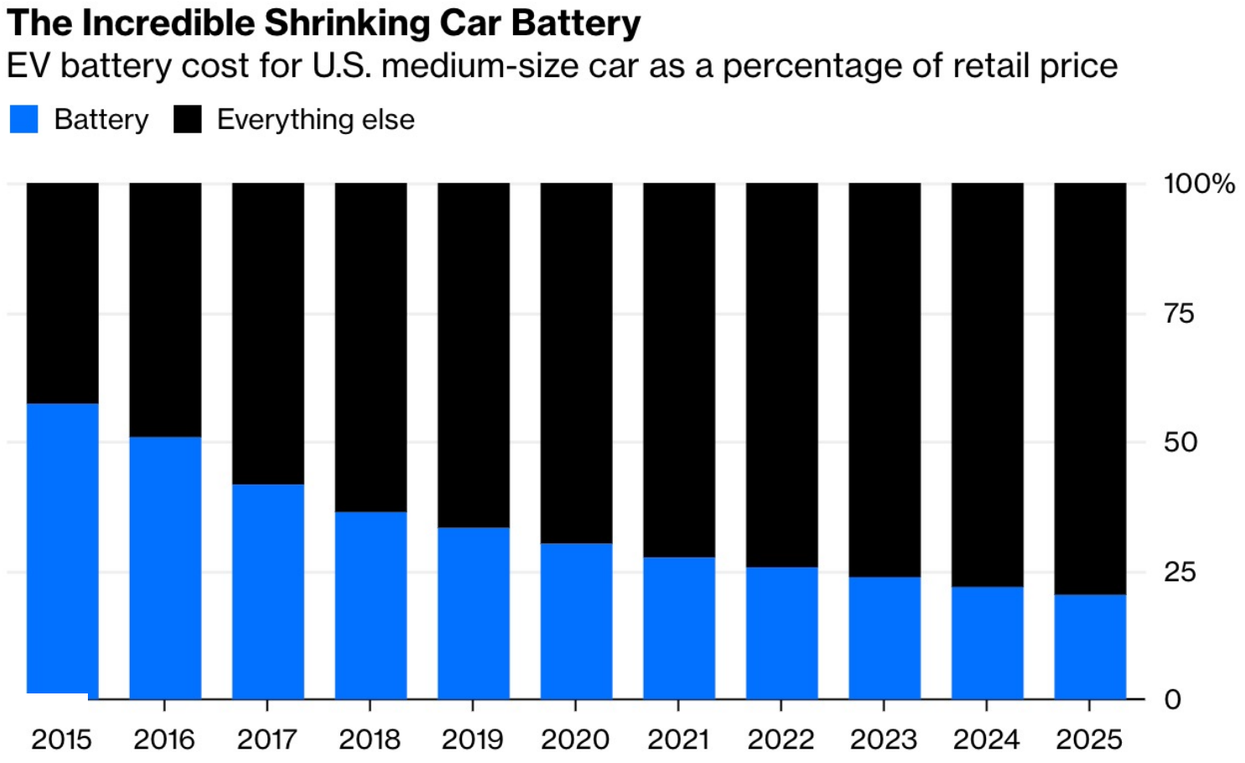
BARRIER: INITIAL VEHICLE COST

"**Initial vehicle cost**": the purchase price difference between EVs and comparable gas vehicles has narrowed.

2022 Ford F-150: $29,290 MSPR (estimated)

2022 Ford F-150 Electric (Lightning): $32,474* MSRP

**after $7,500 federal tax credits*



Source: BloombergNEF
Note: Includes profit margins and costs other than direct manufacturing costs.

BARRIER: INITIAL VEHICLE COST

The “crossover point” is when the cost to purchase an electric vehicle will be less than the cost of a gas-powered vehicle. Credible forecasts show this could occur within 5 years (by 2026).

Segment	Examples
B	Renault Clio
C	VW Golf
D	BMW 3 Series
SUV-B	Honda HR-V
SUV-C	Toyota RAV4
SUV-D	Volvo XC60
Light van	Renault Kangoo
Heavy van	Ford Transit

Figure 28: Estimated pre-tax retail prices for C segment vehicles

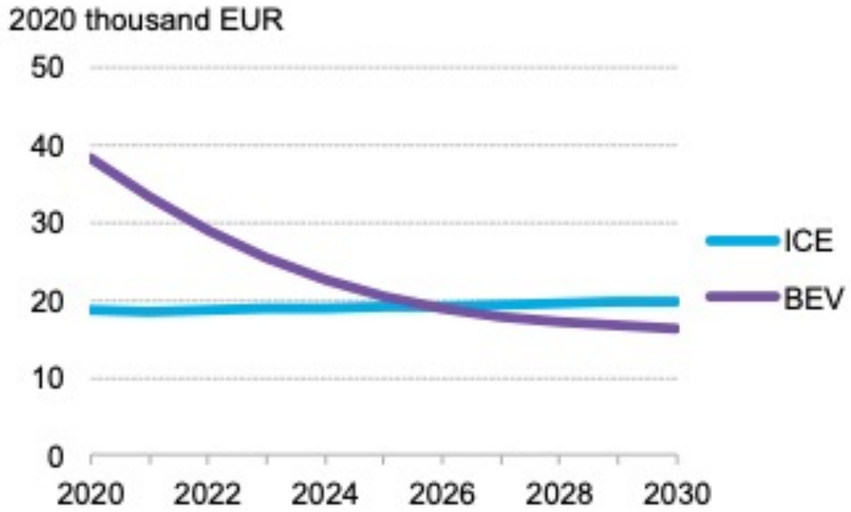
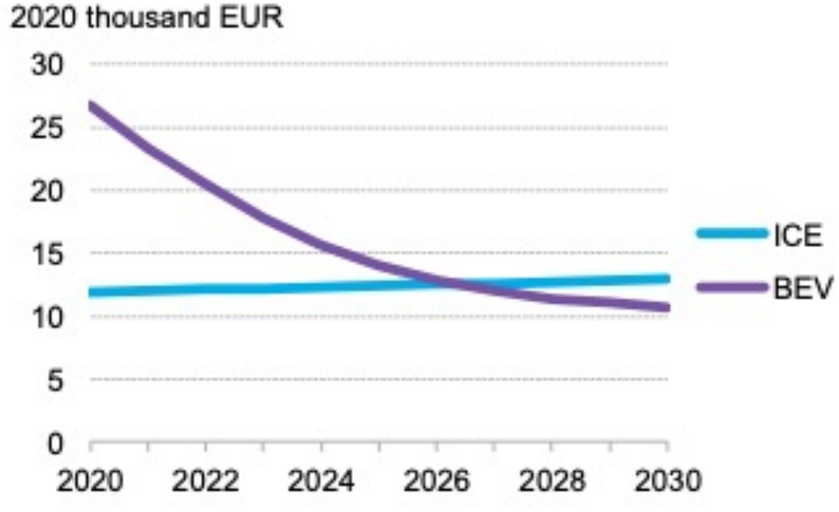


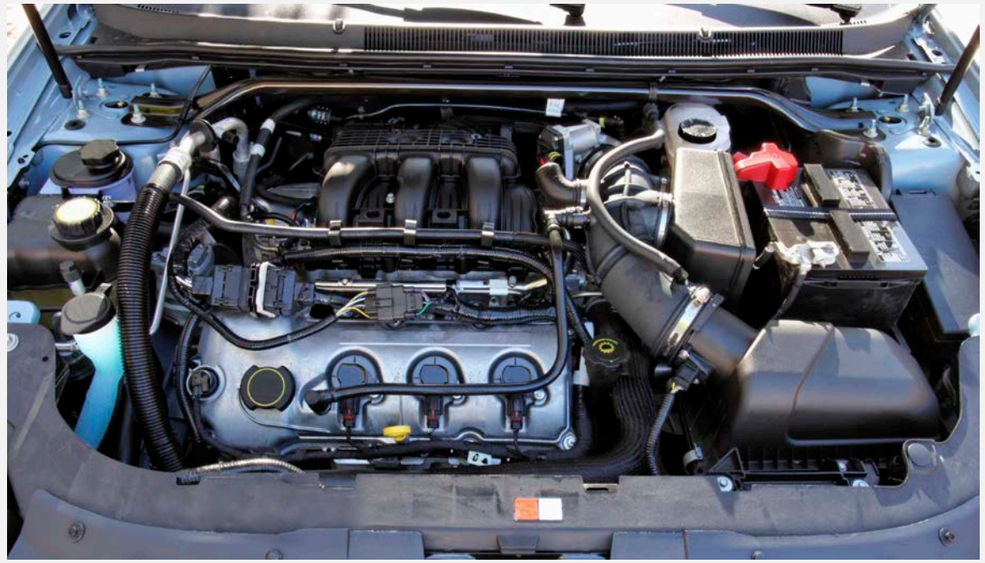
Figure 29: Estimated pre-tax retail prices for B segment vehicles



Source: BloombergNEF Note: ICE is internal combustion engine vehicle and BEV is battery electric vehicle

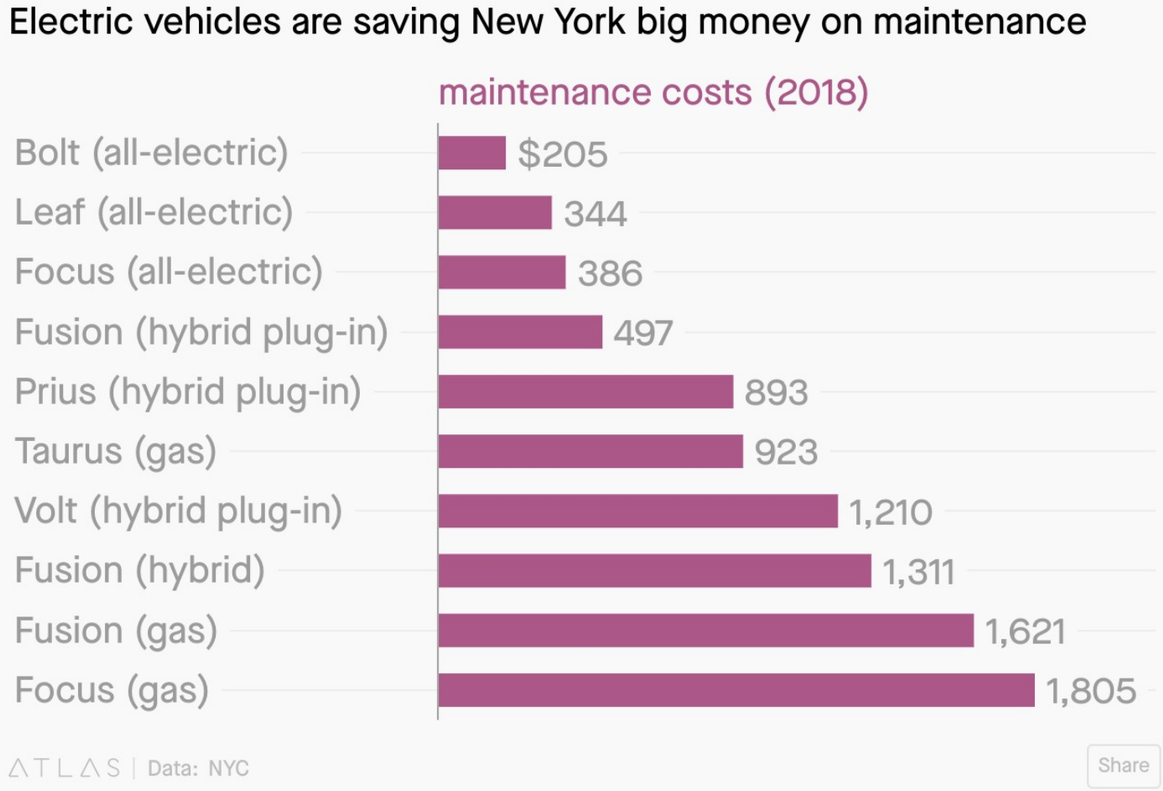
BARRIER: COST TO SERVICE AND REPAIR

"**Cost to service and repair**": a common concern – and misperception – about EVs is that maintenance costs will be higher. In fact, the opposite has proven true.



PEVs don't require:

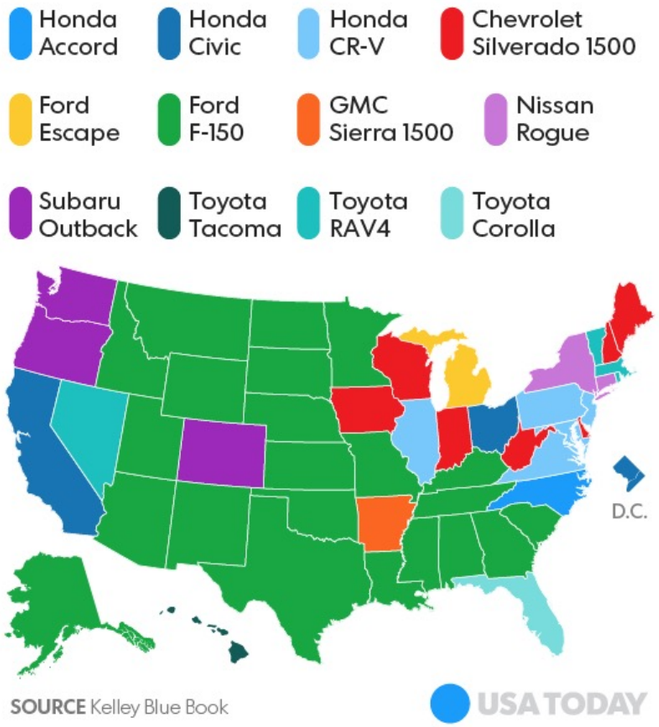
- Oil changes
- Fan belt replacements
- Air filter replacements
- Timing belt replacements
- Head gasket repairs
- Cylinder head repairs
- Spark plug replacements



Data from City of New York; graphics published in *Quartz*, March 18, 2019

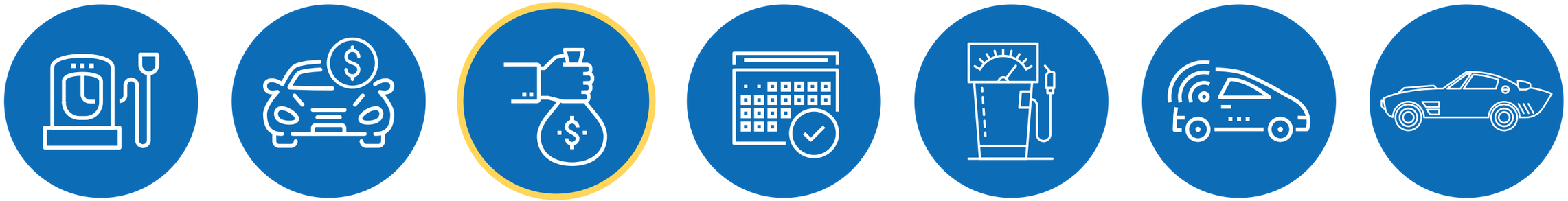
BARRIER: NOT ENOUGH VARIETY IN EV MODELS

"**Not enough variety in available models**": Pickup trucks, SUVs, and crossover utility vehicle accounted for 70% of all sales in 2018. Pickup trucks remain the most popular vehicle sold in 31 states. The arrival of electric pickups from Ford, Tesla, and Rivian are expected to address this concern.



EV ADOPTION: WHAT BUYERS WANT

Non-EV drivers were asked: What would increase your likelihood to purchase an electric vehicle? What mattered most to them:



34%
More charging stations

57%
Same price as a traditional vehicle

41%
Government financial incentives

40%
Trying it for 30 days before buying it

32%
Manufacturer providing a gasoline or hybrid car to switch out

XX%
Charging the vehicle wirelessly

26%
Styling similar to traditional vehicles

Source: Harris Poll commissioned by Volvo USA, October 11-17, 2018, of 1,510 US drivers ages 18 and older.

EV ADOPTION: WHAT BUYERS WANT

Government financial incentives: federal incentives exist in the U.S. and leading countries, but states, municipalities and electric utilities also play a major role. Unlike its western U.S. neighbors, Nevada offers no state-level financial incentives for EV purchases.

China and Japan each have federal purchase subsidies for EVs:

- **China**: tax incentives range between $5,000 to $8,500 USD; in addition, local authorities can offer up to 50% of the national incentives, bringing cost parity between a PEV and ICE vehicle.
- **Japan:** gradually higher subsidies are offered based on increases in a vehicle models's improvements in battery range. Japan's subsidy tops out at $7,700 USD.

U.S. federal government provides EV tax credits for consumers:

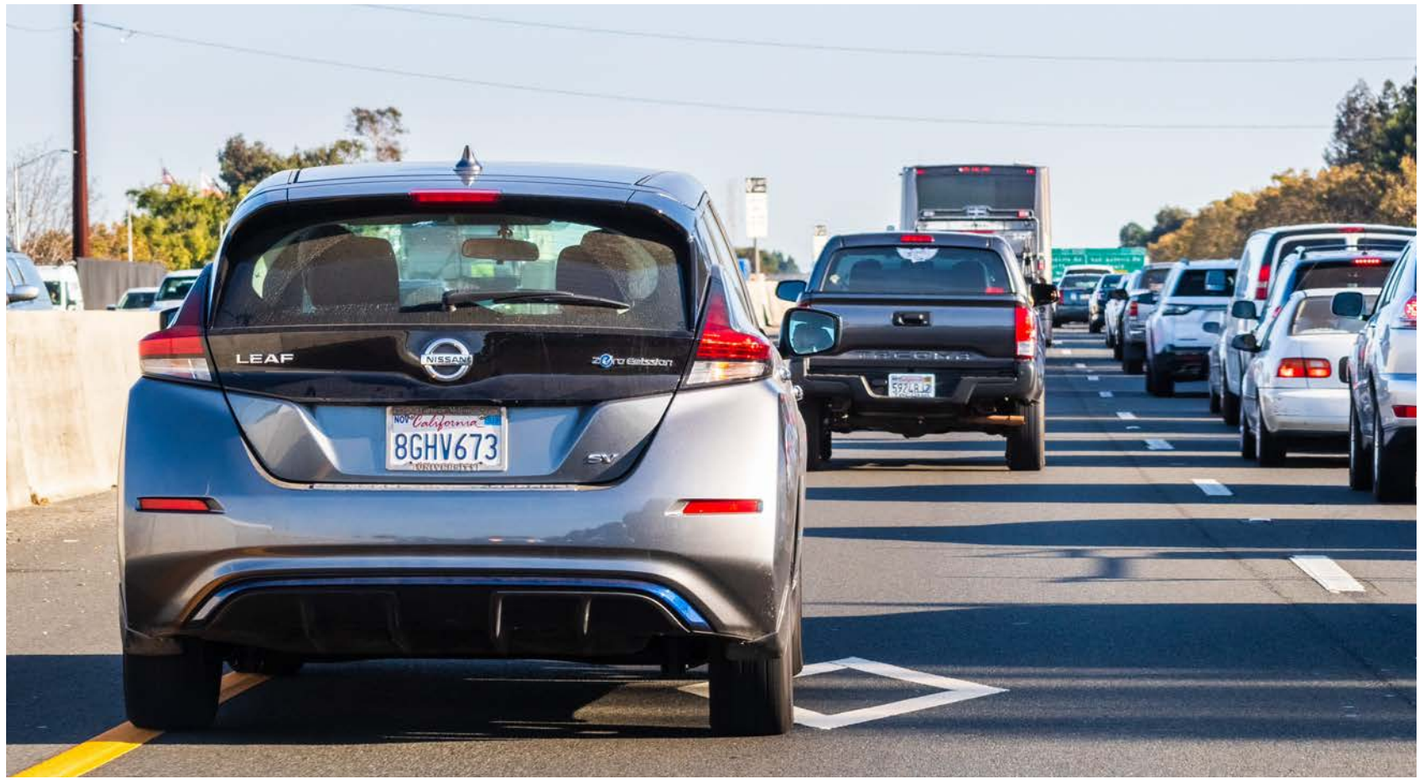
- $2,500 to $7,500, based on the EV's size battery capacity. An auto manufacturer's credit is phased out once total sales reach 200,000 PEVs.

Unlike other states, **Nevada** currently offers no rebate or tax incentive for purchasing an EV.

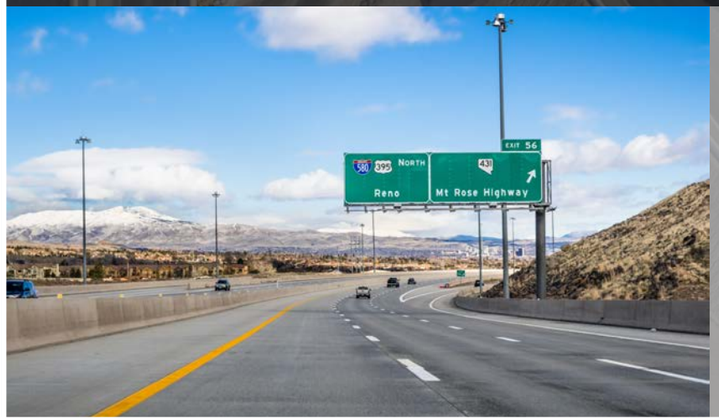
Nevada Energy (NV Energy) offers a Time of Use rate to residential and customers in the northern and southern service territories who charge EVs during off-peak hours (this rate is also available for all off-peak electricity use). The utility also provides rebates for purchasing and installing Level 2 chargers and DC fast-charging stations. Eligible projects include installing chargers for fleets, workplaces and multi-unit dwellings.

EV ADOPTION: WHAT BUYERS WANT

Aside from purchase subsidies, other public policies can also help spur consumer adoption of electric vehicles.



- **HOV lane access**: available in some form in 12 states. Found to be a top reason for EV purchase by CA drivers. Regulated or pared back in CA, VA and NJ over concerns about HOV lane efficiency.
- **Free on-street parking**: offered by many cities and towns
- **Preferred parking spots**: offered at many government buildings, shopping centers, stadiums, etc.
- **Free public charging**: many public-access charging stations are offered at no cost
- **Free toll bridges and roads**: free toll roads/ferries more common in other countries (Norway is now curtailing this).
- **Free HOT lane access** offered in CA (limited) and GA. NJ and NY offer 10% HOT lane discount.



Section 5

Principles to Guide Future Transportation Revenue Systems in Nevada

AWG CHARTER

AB 413 and the charter for this Working Group provide the starting point for objectives and guiding principles for new revenue mechanisms in Nevada

The AWG-adopted charter directly reflects the requirements and policy parameters established by the Nevada legislature in AB 413 (2021):

> "An examination of the **financial sustainability** of the **State Highway Fund** must be undertaken and the recommendations must be included in the final report due to the Legislature by December 31, 2022. This must include an assessment of at least **two alternative transportation funding approaches** that have been identified.
>
> Consistent with AB 413, new approaches to **multimodal** transportation funding **for all users** must take into account the need to improve **social equity, user equity**, and reduce **GHG emissions**. Finally, the role that **land use and smart growth** strategies can play must be considered."

AWG CHARTER

The Working Group charter contains the rudiments of *objectives*, *solutions*, and *guiding principles*

The Objective

"An examination of the financial sustainability of the State Highway Fund must be undertaken and the recommendations must be included in the final report due to the Legislature."

This opening sentence of the charter reflects the fundamental objective of the Working Group: to recommend strategies to the legislature for sustainable transportation funding in Nevada, focusing on the State Highway Fund. This core objective is not to the exclusion of other, secondary objectives. In exploring and working to find a viable long-term, sustainable funding strategy for Nevada transportation, the Working Group may discover additional areas of consensus worthy of recommendations that support or complement the core objective of sustainable transportation funding.

Solutions

"This must include an assessment of at least two alternative transportation funding approaches [6] that have been identified."

This second sentence of the charter provides the Working Group with direction for exploring possible solutions that achieve the objective of long-term sustainable transportation funding. Specifically, AB 413 references two funding models for exploration by the Working Group: the Utah model and the National Resources Defense Council model, each of which contains a form of fuel tax indexing and a form of distance-based road usage charging. The Working Group can explore the ability of these two funding models, and others it formulates, to meet Nevada's core objective. In addition, the Working Group can consider the role of land use and smart growth strategies as components of the long-term funding solution.

Guiding Principles

"Consistent with AB 413, new approaches to multimodal transportation funding for all users must take into account the need to improve social equity, user equity, and reduce GHG emissions."

This second paragraph of the charter explicitly reflects several guiding principles as expressed in AB 413. These guiding principles include the need to consider multimodal investment priorities, the needs of all transportation users, social equity, user equity, and GHG emissions reductions. In evaluating possible solutions, it will be essential to consider not only how well they meet the core objective and secondary objectives, but also the degree to which they reflect guiding principles.

GUIDING PRINCIPLES

Principles will help guide the AWG's consideration and selection of preferred revenue mechanisms (methods of taxation)

The AWG has an important role in formulating and advancing long-term tax policy mechanisms for sustainable transportation funding. The solution or solutions put forward by the AWG, if adopted, could serve Nevada for decades if not generations to come. Therefore, consideration and selection of revenue mechanisms should be guided by equally strategic principles. For example, AB 413 asks that the Working Group consider "social equity" in devising transportation revenue policy recommendations. By elaborating on this two-word phrase, "social equity," the AWG can articulate a more precise, meaningful, long-term principle related to social equity for assessing tax policy alternatives. The AWG may even decide to craft more than one principle related to social equity.

2. The Advisory Working Group shall study during the 2021-2022 interim:

(a) The needs of all users of different modes of transportation, including bicyclists, pedestrians, drivers of motor vehicles and public transit users;

(b) Social and user transportation equity;

(c) The reduction of greenhouse gas emissions;

(d) The sustainability of the State Highway Fund including, without limitation, an analysis of the Natural Resources Defense Council funding model presented to the Legislative Committee on Energy on August 24, 2020, and Utah's Road Usage Charge Program; and

(e) The role of land use and smart growth strategies in reducing transportation emissions and improving system efficiency and equity.

Guiding principles for transportation revenue mechanisms can be derived from many sources. AB 413 offers one starter set of principles. Classical economics literature offers another; it emphasizes fairness, certainty, convenience, and efficiency. More recent literature, such as the Association of International Certified Professional Accountants (AICPA), has expanded the classical list to include modern concepts such as information security, as well as more detailed concepts such as simplicity, neutrality, and transparency. Given the strong linkages between transportation and other policy priorities such as climate change, economic development, and land use, and given the long-term nature of the funding solution the AWG seeks to assemble, guiding principles for transportation taxes may go beyond the conventional.

Guiding principles selected by the AWG will not serve as "pass/fail" criteria for assessing prospective solutions. Moreover, principles do not necessarily result in a scoring or quantification of solutions. Rather, principles aim to guide the AWG's qualitative evaluations when presented with a range of choices. In some cases, there will be tension between two or more principles that require the AWG to consider tradeoffs or to frame the tension in a manner that is complementary (or at least not directly conflicting).

GUIDING PRINCIPLES

Examples of guiding principles for transportation revenue mechanisms: Classical principles

The principles below succinctly summarize four conceptual principles from classical economics that pertain to taxation. At right are eight additional principles from the AICPA's tax policy primer. These 12 examples are presented as illustrative of the of the type of guiding principles available to the AWG.

Classical Principles (from Adam Smith's *Wealth of Nations*)

- **Equity and fairness** — Similarly situated taxpayers should be taxed similarly.
- **Certainty** — The tax rules should clearly specify how the amount of payment is determined, when payment of the tax should occur, and how payment is made.
- **Convenience of payment** — Facilitating a required tax payment at a time or in a manner that is most likely convenient for the taxpayer is important.
- **Effective tax administration** — Costs to collect a tax should be kept to a minimum for both the government and taxpayers.

Modern Principles (from AICPA's *Guiding principles of good tax policy*)

- **Information Security** — Tax administration must protect taxpayer information from all forms of unintended and improper disclosure.
- **Simplicity** — Simple tax laws are necessary so that taxpayers understand the rules and can comply with them correctly and in a cost-efficient manner.
- **Neutrality** — Minimizing the effect of the tax law on a taxpayer's decisions as to how to carry out a particular transaction or whether to engage in a transaction is important.
- **Economic growth and efficiency** — The tax system should not unduly impede or reduce the productive capacity of the economy.
- **Transparency and visibility** — Taxpayers should know that a tax exists and how and when it is imposed upon them and others.
- **Minimum tax gap** — Structuring tax laws to minimize noncompliance is essential.
- **Accountability to taxpayers** — Accessibility and visibility of information on tax laws and their development, modification and purpose are necessary for taxpayers.
- **Appropriate government revenues** — Tax systems should have appropriate levels of predictability, stability and reliability to enable the government to determine the timing and amount of tax collections.

GUIDING PRINCIPLES

Examples of Guiding Principles for transportation revenue mechanisms: Other states' transportation revenue commissions

The four examples at right represent a range of principles adopted by transportation revenue-related studies and/or task forces in four states, including Indiana (2014-2015), Washington (2012-2021), North Carolina (2020-2021), and Pennsylvania (2021). Although the examples are brief, each set of principles contained more elaborate definitions and discussions of the meaning of each and how it would be applied. For example, the Pennsylvania TROC defined user pays as follows: "Direct users of the transportation system should generally bear most of the burden of funding that system. Historically this has been an overarching principle, as reflected in the gas tax."

In each case the efforts reflected at right used the guiding principles to assess revenue alternatives. The core objective of sustainable revenue must be met, but many revenue mechanisms and proposals can accomplish that. The key is to craft a solution or set of solutions that does so in a way that is consistent with many or all of the guiding principles articulated at the outset.

North Carolina Future Investment Resources for Sustainable Transportation Commission (2020-2021)

- Avoid near-term harm
- Develop durable options
- Diversify and broaden funding streams
- Support user pays principle
- Adhere to principles of fundamental fairness

Pennsylvania Transportation Revenue Options Committee (2021)

- User Pays
- Be Fair
- Diversify the Revenue Base
- Build in Predictability and Stability
- Index to Inflation
- Reduce Funding Restrictions
- Ensure Near-Term Feasibility
- Simplify Administration
- Learn from Other States

Washington Road Usage Charge Committee (2012-2021)

- Transparency
- Complementary policy objectives
- Cost-effectiveness
- Equity
- Privacy & data security
- Simplicity
- Accountability
- Enforcement
- User options
- System flexibility and interoperability
- Phasing

Indiana Transportation Revenue Alternatives Study (2014-2015)

- Potential revenue yields
- Ease of implementation and enforcement
- Revenue sustainability and predictability
- Public support
- Business climate friendliness

GUIDING PRINCIPLES

Drawing on background, examples, and local knowledge and interests, the Advisory Working Group will craft guiding principles for Nevada's sustainable transportation funding solution.

During the September AWG meeting, members will participate in a facilitated work session to identify guiding principles. Starting from concise words or phrases (listed below), the project team will invite AWG members to elaborate on their thoughts, views, and preferences regarding each guiding principle. In addition, members are invited to express thoughts regarding the relative importance (or non-importance) of any given principle, and to introduce additional principles not already listed here for consideration.

Identifying Principles

- Mobility needs of all users
- Social equity
- User equity
- Greenhouse gas emissions
- User pays
- Revenue diversification
- Efficiency and ease of compliance
- Near-term sufficiency
- Long-term viability
- Transparency
- Flexibility

Below are several factors that impact the AWG's ability to efficiently and collaboratively develop guiding principles:

- **Sometimes principles appear to conflict with each other.** When both are important, the specific language can be accommodating and/or complementary, so that both principles are reflected in proper proportion.
- **Not every example provided in this briefing book qualifies as a guiding principle.** Some, such as "index to inflation," are solution components. Others, such as "public support" will be assessed by the legislature.
- **Some guiding principles are simpler to assess in a Working Group**, such as revenue yields, ease of implementation, and user pays, while subjective topics like "fairness" require more precision to be useful.

During September's meeting, project team members will present background information and facilitate an interactive discussion among members about guiding principles. The aim is not to make final selections and finely tune the language of each guiding principle, but rather to collect as much qualitative feedback as possible. The project team will return to the AWG in November with proposed language for guiding principles for further discussion and adoption.