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VIA ELECTRONIC FILING

March 10, 2023

Public Utility Commission of Oregon
Filing Center
201 High Street SE, Suite 100
P.O. Box 1088
Salem, Oregon 97301

RE: UM 2035 – Idaho Power Company's 2023-2025 Transportation Electrification Plan

Attention Filing Center:

Attached for electronic filing in the above-referenced matter is Idaho Power Company's 2023-2025 Transportation Electrification Plan.

If you have any questions, please do not hesitate to contact me.

Very truly yours,



Matthew T. Larkin

MTL/sg
Enclosure

2023–2025 Transportation Electrification Plan

March 2023

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Executive Summary

Idaho Power’s 2023 – 2025 Transportation Electrification (“TE”) Plan (“TE Plan” or “Plan”) presents a strategy for addressing market barriers to electric vehicle (“EV”) adoption in the Company’s Oregon service area. This Plan, focused primarily on education, outreach, and technical assistance, is intended to build a solid foundation of understanding and awareness upon which future efforts may be built.

The TE Plan begins with describing the current TE landscape in Idaho Power’s Oregon service area, including existing market barriers to EV adoption. It then discusses the Company’s EV forecast and analysis of needed charging infrastructure according to a range of EV forecast scenarios. The Company then details the specific components of its TE Plan, including how it plans to track program performance. Lastly, the Company provides an anticipated budget for the 2023 – 2025 planning period, as well as associated cost/benefit analyses.

Procedural Background

Executive Order 20-04, issued on March 18, 2020, directed the Oregon Public Utility Commission (“OPUC”) to “encourage electric companies to support transportation electrification infrastructure that supports GHG reductions, helps achieve the transportation electrification goals set forth in Senate Bill 1044, and is reasonably expected to result in long-term benefit to customers.” Enacted in 2021, House Bill 2165 introduced new provisions related to TE and amended existing rules to further accelerate investment in TE infrastructure and programs.

In response to this new legislation, OPUC Staff (“Staff”) and stakeholders engaged in workshops throughout 2021 to develop a new approach to transportation electrification planning and to create a new TE investment framework. These efforts culminated in permanent changes to the Division 87 of the Oregon Administrative Rules (“OAR”) addressing utility transportation electrification plans¹, as well as a guidance document from Staff².

The adopted TE plan rules and guidelines direct utilities to file updated TE plans every three years that include the utility’s portfolio of future TE actions. In addition, utilities are directed to file an annual report that evaluates the most recently accepted TE Plan.

¹ *In the Matter of Revisions to Division 087 Administrative Rules*, Docket No. AR 654, Order No. 22-336 (Sep. 8, 2022).

² Docket No. AR 654, Order No. 22-158 (May 10, 2022).

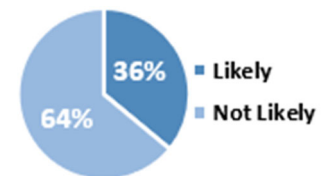
CURRENT CONDITIONS OF THE TE MARKET IN THE COMPANY'S OREGON SERVICE AREA

OAR 860-087-0020(3)(a)

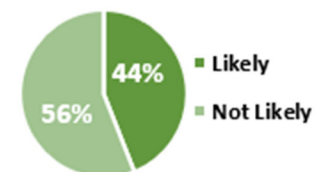
Although awareness has grown in recent years, interest in transportation electrification continues to be limited in the region of eastern Oregon. Barriers such as vehicle availability, driving range, access to public charging, and price all contribute to relatively slow EV adoption and even some uncertainty surrounding TE across the area. These barriers and the specific characteristics of Idaho Power's Oregon service area are discussed in more detail later in this report.

In July 2022, Idaho Power conducted a survey ("Idaho Power 2022 EV Survey") with Oregon residential customers to better understand current sentiment towards EVs³. When asked if some of the barriers to purchasing or owning an EV were removed, would customers elect to purchase the electric powered version of the vehicle of their choice, more than half of respondents answered negatively.

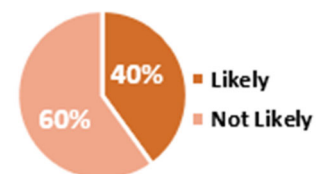
If available in your area and the **purchase price** of a new vehicle of your choice was the same for an EV and a traditional gas- or diesel-powered vehicle, how likely would you be to purchase the electric powered version of the vehicle of your choice?



If available in your area and the **distance you could drive** on a tank of gas or battery charge was the same for an EV and a traditional gas- or diesel-powered vehicle, how likely would you be to purchase the electric powered version of the vehicle of your choice?



If there were **more public charging stations** located in your area, or along highways, how likely would you be to purchase the electric powered version of the vehicle of your choice?



In addition, out of all respondents that do not currently own an EV, 38 percent of respondents were not familiar with them, 46 percent were somewhat familiar, and only 16 percent responded as being very familiar. This reflects an increase in familiarity from 2019 respondents.

³ Complete survey results provided as Appendix 3.

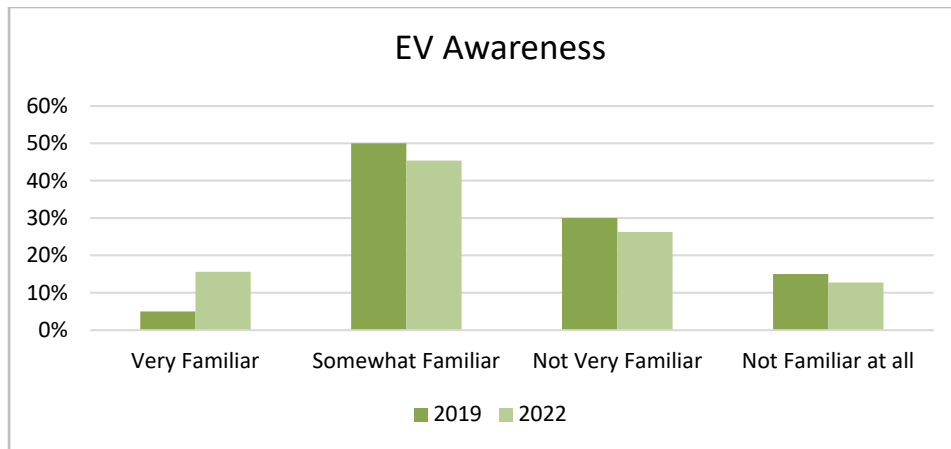


Figure 1

EV awareness

As will be discussed later in this report, the responses to these and other questions throughout the survey informed the need to continue to focus on education and outreach programs, as well as continue to support commercial EV adoption and infrastructure projects in order to further transportation electrification in the region.

As of October 2022, the Oregon Department of Environmental Quality (“DEQ”) reported that 52 light-duty EVs, including 37 Battery Electric Vehicles (“BEVs”) and 15 Plug-in Hybrid Electric Vehicles (“PHEVs”), were registered in Idaho Power’s Oregon service area, up from 25 EVs as of June 2019.⁴ These make up 0.09 percent of all EVs in the state of Oregon.

As of March 2023, Plugshare.com reported 8 locations to charge EVs in the Company’s Oregon service area. Two of these locations are public fast charging sites (Electrify America and Tesla), and one is a level 2 charging station in downtown Vale. The remaining stations include a hotel, RV parks, and campgrounds, and consist of level 1 or level 2 charging ports.

New State Policies and Programs

OAR 860-087-0020(3)(a)(A)

There are several new policies and programs enacted or in development that will further transportation electrification in Idaho Power’s Oregon service territory. These include the Infrastructure Investment and Jobs Act, the Inflation Reduction Act, the Oregon Community EV Charging Rebate Program, Clean Fuels rebates for the purchase of EVs, and more. Idaho Power will continue to track opportunities and share them with customers.

⁴ <https://www.oregon.gov/energy/Data-and-Reports/Pages/Oregon-Electric-Vehicle-Dashboard.aspx>

Infrastructure Investment and Jobs Act

The Infrastructure Investment and Jobs Act (“IIJA”)⁵, enacted on November 15, 2021, offers opportunities to increase TE in Idaho Power’s eastern Oregon service area through the federal National Electric Vehicle Infrastructure (“NEVI”) Program. The primary goal of the NEVI program is to increase access to EV charging with new or improved direct-current (“DC”) fast charging stations along designated alternative fuel corridors. The NEVI program is administered by state Departments of Transportation.

In Idaho Power’s Oregon service area, four highways have been identified for NEVI funding over the next five years. According to the Oregon Department of Transportation’s (“DOT”) NEVI plan, the state will focus fiscal year 2023 funding on I-84 and U.S. Route 20 and fiscal year 2024 funding on U.S. Route 26. These roadways connect most towns in Idaho Power’s service area with Boise and Portland. Should funding be available in fiscal years 2025-26, Oregon DOT plans to electrify U.S. Route 95, which covers a small part of Idaho Power’s Oregon service area.

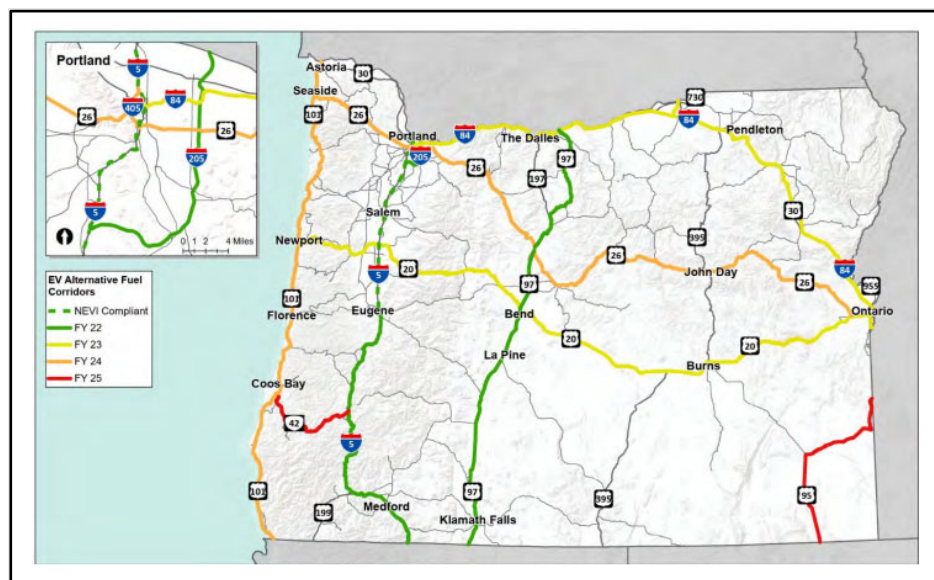


Figure 2

Map showing the alternative fuel corridors in Oregon and the fiscal year in which they are expected to receive NEVI funding

Inflation Reduction Act of 2022

Enacted on August 16, 2022, this federal legislation (P.L. 117-169) includes about \$370 billion in new spending that includes tax incentives for the purchase of new and used EVs and for the installation of charging infrastructure. These tax incentives, coupled with the existing Oregon

⁵ The Infrastructure Investment and Jobs Act of 2021 (P.L. 117-58), aka the Bipartisan Infrastructure Law, appropriated \$550 billion for new infrastructure investments including electric vehicle supply equipment (EVSE), alternative fuel infrastructure, electric vehicle (EV) batteries, electricity grid upgrades, and light-, medium-, and heavy-duty zero emission vehicles (ZEVs).

DEQ's Clean Vehicle Rebate Program, should help to reduce market barriers, such as the cost to purchase an EV and availability of charging stations.

Community EV Charging Rebate Program

Currently under development, the community EV charging rebate program is described on the Oregon DOT website⁶ as the following.

“The Oregon Climate Office is developing a community EV charging rebate program that will provide cash incentives for public and private entities to install level 2 EV charging in parking areas, and near multi-unit dwellings. Dubbed “Plugging in Oregon,” the program’s rebates will cover about 75% of the cost of charger equipment and installation. The majority of funds will be spent in communities identified as “priorities” for more accessible public EV charging.”

When this program launches, Idaho Power expects it to provide additional funding to support EV charging options for customers in the Company's Oregon service territory.

Market Barriers

OAR 860-087-0020(3)(a)(B)

Common barriers to EV adoption include driving range, price, access to public charging, and vehicle availability. Each of these barriers exist for Idaho Power's Oregon customers and are further exacerbated by the characteristics of the service area.

Idaho Power's Oregon service area spans some of the most remote landscapes across eastern Oregon. The service area encompasses 4,744 square miles and is largely comprised of rural and frontier communities. The largest town in Idaho Power's Oregon service area is Ontario, which has a population of roughly 11,600. The next largest towns are Nyssa, with a population of approximately 3,000, and Vale with a population of approximately 2,000⁷. Most of the remaining towns in Idaho Power's Oregon service area have populations of less than 300. As of year-end 2022, Idaho Power's Oregon service area consisted of approximately 20,000 total customers, about 14,000 of which are residential customers.

Market Barrier: Driving Range

Idaho Power's Oregon service area is located in a remote part of eastern Oregon. The distance between Ontario and Nyssa, the two largest towns in the Company's Oregon service area, is 13 miles. The closest metropolitan statistical area is Boise, Idaho, which is 56 miles east of

⁶ <https://www.oregon.gov/odot/climate/Pages/Transportation%20Electrification.aspx>

⁷ U.S. Census Bureau (2020).

Ontario, Oregon. The closest metropolitan statistical area within Oregon is Bend, which is 260 miles west of Ontario⁸.

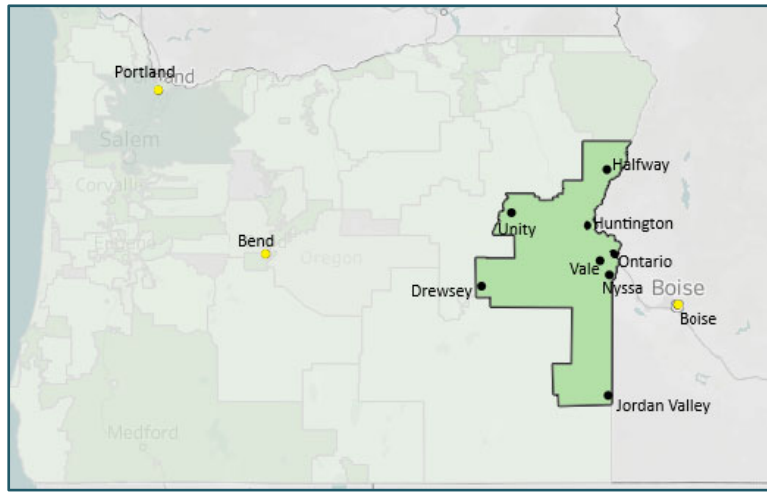


Figure 3

Map of Idaho Power's Oregon service area

The rural and frontier nature of Idaho Power's Oregon service area presents a challenge to the range capabilities of mid-level EVs. In order to travel outside the area, or even between many of the towns within this area, customers would likely need a newer model EV with longer range capabilities, which comes at a higher cost, or access to public charging, which is limited. While the average travel time to work in Malheur County is just 18.5 minutes, drivers in rural towns need to travel to city centers for other services including major hospitals, airports, and retail. In addition, many towns are separated by mountain passes.

Table 1

Distance (miles) between towns in Oregon service area and services

Start	Ontario	Boise, ID	Bend	Portland
Ontario	0	56	260	375
Nyssa	13	51	264	388
Vale	17	71	244	389
Huntington	30	85	287	346
Drewsey	90	145	174	326
Unity	81	136	201	351
Jordan Valley	90	82	267	419
Halfway	126	182	285	352

⁸ "September 2018 Office of Management and Budget Bulletin No. 18-04." U.S. Census Bureau. <https://www.whitehouse.gov/wp-content/uploads/2018/09/Bulletin-18-04.pdf>.

In the Idaho Power 2022 EV Survey, the Company received several comments regarding driving range and terrain-specific concerns, including:

- *“Not made for heavy hauling trailers transporting animals, 4x4 not enough power and just a pain”*
- *“Power needed for hauling and traveling in hills/mountains”*
- *“Not realistic for my location and driving habits”*
- *“Concerns on traveling distances”*
- *“Can't be driven long distance without recharging”*

However, Idaho Power is encouraged by the improvements in battery technology and driving range in newer model EVs, specifically in trucks and SUVs. The Company believes continued improvement in this area will ease this market barrier for its Oregon customers so long as the EV itself is not cost prohibitive.

Market Barrier: Public Charging

Public charging station availability is limited within Idaho Power’s Oregon service area. As of March 2023, Plugshare.com, a website that allows users to find and review charging stations, reported eight locations to charge EVs in the Company’s Oregon service area. Of these eight locations, the Electrify America DC Fast Charging site located in Huntington, the Tesla Supercharger site located in Ontario, and the Level 2 station located in Vale, are the only EV stations designed for EV fast charging. The other locations, including a hotel, RV parks, and campgrounds, consist of electrical outlets that EV drivers can use. Below is a table showing charging station availability in Idaho Power’s Oregon service area.

Table 2
EV charging sites in Oregon service area

Type	Location	Site	Ports	County
DCFC	Huntington	1	8	Baker
Level 2	Halfway	1	1	Baker
Level 2	Vale	1	2	Malheur
DCFC (Tesla)	Ontario	1	8	Malheur
Level 1	Ontario	1	1	Malheur
Level 1	Huntington	1	1	Baker
Level 1	Jordan Valley	1	1	Malheur
Level 1	Adrian	1	1	Malheur
Total	-----	8	23	-----

Market Barrier: Availability

As of October 2022, 52 EVs were registered in Idaho Power’s Oregon service area. A contributing factor to the absence of EV’s in eastern Oregon is the lack of EV availability for purchase. Local dealerships have limited new EVs on the lot, if any. However, they may acquire a used EV as a trade in and can special order EVs from another dealership or direct from the manufacturer, although supply chain issues may delay product availability for both EVs and electric vehicle supply equipment (“EVSE”).

Boise, Idaho is the closest location to the Company’s Oregon service area that offers a variety of EVs, including BEVs.

Market Barrier: Price

Although the range and cost of EVs are improving as technology advances, the price of EVs remains a barrier to adoption. This barrier is amplified when considering the income levels of Idaho Power’s Oregon customers. According to the United States Census Bureau,⁹ the median household income for Ontario, Oregon is \$42,568, compared to \$68,373 for Boise, Idaho and \$78,476 for Portland, Oregon. In addition, 20.0 percent of people in Malheur County, where most of the Company’s Oregon customers reside, live in poverty, as defined by the US Census Bureau.

Furthermore, in a report released in January 2018¹⁰, the Oregon Department of Human Services identified Malheur County as a “high poverty hotspot,”¹¹ or a geographic concentration of poor residents. The report states that Malheur County has three high poverty locations: Ontario, Nyssa, and Vale, the three largest towns in Idaho Power’s Oregon service area.

In the Idaho Power 2022 EV Survey, customers selected price as being their biggest barrier to entry. Out of six options, 23.31 percent of respondents selected price as being one of the least desirable aspects of EVs.¹²

Table 3

Survey results: least desirable aspects of EVs

Barrier to Entry	Percent Selected
Price	23%
Not good for long trips	21%
Not very many public EV charging stations	17%

⁹ Median Household Income (in 2021 dollars). U.S. Census Bureau (2020).

¹⁰ “High Poverty Hotspots – Malheur County”. Oregon Department of Human Services Office of Forecasting, Research, & Analysis.

¹¹ Hotspot: The U.S. Census Bureau’s definition of a poverty area is a tract with a poverty rate of 20 percent or more.

¹² Asked of respondents who do not own an EV but are somewhat or very familiar with EVs and say they love them, wish they owned one, or like them but have questions or concerns.

Barrier to Entry	Percent Selected
Needs special equipment to charge at home	16%
Needs special equipment for roadside assistance of emergencies	12%
Too small for what you need to do	6%
Other	5%

The below are comments regarding EV prices from the survey:

- *“Would love to have one, but unfortunately limited income makes it hard to even think [about] buying one. Could never afford one.”*
- *“Too expensive.”*

The following table represents current estimated prices of EVs. Longer range EVs needed to access services in the Company’s rural Oregon service area are at the upper end of the price range. Most vehicles can be purchased with larger ranges, however at an additional cost. State and federal incentives for the purchase of new and used EVs should help to address this barrier over time.

Table 4

Estimated EV prices (December 2022)

Vehicle	Base Model Range (miles)	Base MSRP (2023)
Tesla Model 3	272	\$42,990
Chevy Bolt	259	\$25,600
Ford Lightning	240	\$55,974
Hyundai Ioniq	220	\$41,450
Nissan Leaf	212	\$28,040

Market Barriers: Impact on TE Plan

In evaluating its 2023 - 2025 TE Plan, Idaho Power was mindful of these barriers and the characteristics of its Oregon service territory, particularly the financial impact that program expenditures and infrastructure investments can have on its Oregon customers.

Due to the Company’s Oregon customers’ limited exposure to TE, limited accessibility to EVs and EV charging infrastructure, income levels, and the remote location of the Oregon service area, the Company expects that EV adoption will take longer than that of other areas in Oregon.

Idaho Power’s current strategy for addressing the identified barriers primarily involves increasing EV awareness and education and providing technical assistance to commercial customers interested in installing public charging or fleet and workplace charging.

Idaho Power believes a long-term strategy focused on awareness and education and ensuring early adopters are successful is the best way to tackle market barriers to EV adoption.

Availability, Reliability, and Usage Patterns of Charging Stations

OAR 860-087-0020(3)(a)(C)

There are currently eight locations to charge EVs in the Company’s Oregon service area. Because all but one of these are not Company-owned charging stations, Idaho Power cannot report on the usage patterns of these charging stations. However, Plugshare.com does report the number of voluntary customer “check-ins” at these locations. These are included in Table 5 below.

Table 5
Plugshare.com voluntary check-ins at EV charging sites

Type	Location	Site	Ports	County	Check-Ins
DCFC	Huntington	1	8	Baker	346
Level 2	Halfway	1	1	Baker	2
Level 2	Vale	1	2	Malheur	1
DCFC (Tesla)	Ontario	1	8	Malheur	117
Level 1	Ontario	1	1	Malheur	32
Level 1	Huntington	1	1	Baker	1
Level 1	Jordan Valley	1	1	Malheur	4
Level 1	Adrian	1	1	Malheur	12
Total	-----	8	23	-----	515

For comparison purposes, Plugshare.com reported 1,671 customer check-ins at a single location sited near the Portland city center.

In 2021, Idaho Power installed a public dual-port Level 2 charging station at its Copperfield Park campground. The non-networked station is behind the facility meter and therefore usage data is not available.



Figure 4
Copperfield Campground Level 2 EV charging port

From 2016 to 2022, Idaho Power offered a shareholder-funded charging incentives program to commercial customers for workplace fleet or public charging. In that time, the Company awarded funding to 47 projects. Program funding levels for 2016 - 2019 were up to 50% of the project costs up to \$7,500 for Level 2 charging. Funding levels for 2020 – 2021 were up to 50% of project costs up to \$20,000 for public or fleet fast charging. Projects were awarded on a first-come, first-served, and competitive basis. Despite marketing to customers throughout the Oregon service area, the Company only received one application from an Oregon customer.

In 2021, the Company awarded an EVSE incentive to the Drexel H Foundation¹³ in Vale, Oregon to install a public Level 2 fast charger. While it was not able to raise the matching funds needed to move forward in 2021, the Drexel H Foundation reapplied and was awarded funding in 2022. Construction was completed in 2022, and a ribbon cutting ceremony was held on November 5, 2022. Idaho Power TE Staff was in attendance, as well as Sandijeon Fuson, the President of the Drexel H Foundation.

The charging station, equipped for two EVs, also includes a bike repair station as well as exterior displays of untold stories of Basque families, and women’s contributions to the community.¹⁴

¹³ “[Drexel H. Foundation’s] mission is to enrich the lives of youth & families by providing art, humanities, and multicultural experiences; to restore & preserve historical buildings in rural eastern Oregon.”
<https://thedrexelfoundation.org/>

¹⁴ https://www.argusobserver.com/news/recharge-your-e-vehicle-or-fix-your-bike-in-downtown-vale/article_782c4a46-54be-11ed-9722-fb1bae54cbab.html



Figure 5

Ribbon cutting ceremony for new Level 2 public charger in downtown Vale, Oregon

At this time, it is unclear if the shareholder offering will continue. Idaho Power does not have current plans for additional investments in EV charging infrastructure in its Oregon service area due to the limited number of registered EVs and the potential financial impact on its Oregon customers.

Current and Forecast Number of EVs in the Company's Service Area

OAR 860-087-0020(3)(a)(D)

Actual and forecasted EV adoption rates in Idaho Power's Oregon service area remain relatively low. Idaho Power continues to monitor battery technology advancement, EV prices, EV range, charging rates, and charging station availability, all of which influence EV adoption rates.

Idaho Power forecasted the adoption of EVs for its entire service area (Idaho and Oregon), as described on pages 18-19 of the Company's Distribution Planning Report – Part 2.¹⁵ This forecast was, in part, based on EV registration data from the Oregon Department of Transportation. The finest level of resolution in the data was city-level registration, which provided a basis for determining EV inventory in Idaho Power's Oregon service area.

Idaho Power then determined forecast EV adoption in Oregon from the system-level forecast. Based on current registrations, a proportionate share of the overall systemwide EV forecast was allocated to the Oregon service area. High, medium, and low EV growth scenarios were developed, with factors including the cost of EVs, consumer trends, and potential policy

¹⁵ Docket No. UM 2196, Idaho Power Distribution System Planning Report Part 2, pages 18-19 (Aug 15, 2022).

changes driving different adoption rates in the three scenarios. The EV forecast scenarios are shown below.

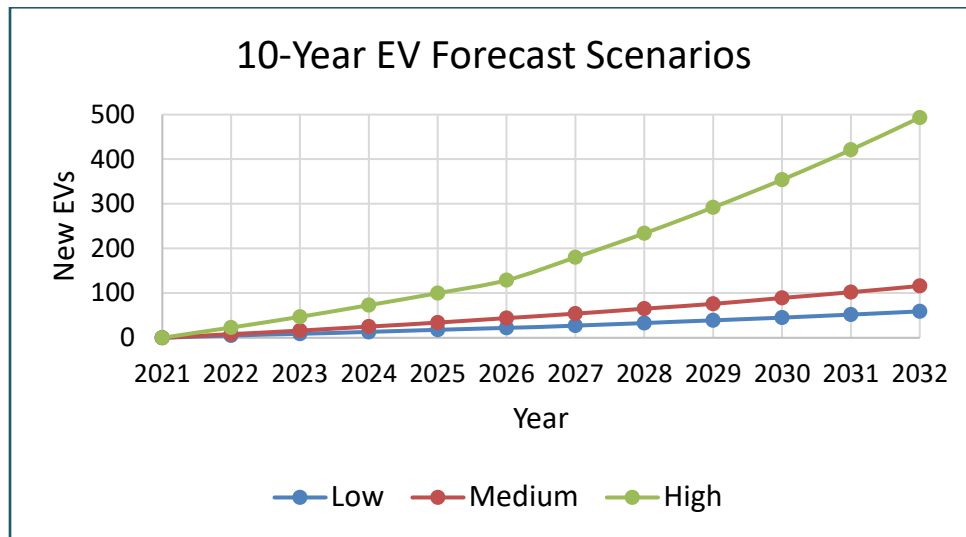


Figure 6
Idaho Power Oregon EV forecast scenarios

Other TE Infrastructure, if Applicable

OAR 860-087-0020(3)(a)(E)

Not applicable.

Forecast of Public and Private Charging Infrastructure

OAR 860-087-0020(3)(a)(F)

Idaho Power used the Transportation Electrification Investment Needs Assessment (“TEINA”) model developed by the Oregon DOT to forecast EVSE charging needs from 2020 – 2035 for light-duty vehicles in all census tracts that fall in the Company’s Oregon service territory.¹⁶ Idaho Power has also incorporated the TEINA corridor model into its analysis, which calculates charging infrastructure need from traffic passing through the service area.

The Company ran three scenarios using TEINA. Each scenarios used TEINA default values for all inputs with the exception of electric light-duty vehicle (“e-LDV”) Targets¹⁷, Median Household Income, and Home Charging Access¹⁸, which were adjusted to better reflect Idaho Power’s

¹⁶ While some census tracts fall only partially in Idaho Power’s service area, the port totals in each scenario are for the entirety of each census tract.

¹⁷ E-LDV Targets: Percentage of total LDVs in Oregon electrified by a given year.

¹⁸ Home Charging Access: Percentage of drivers assumed to have access to home charging in 2035.

Oregon service area. Each of these scenarios assumes corridor charging will serve the needs of both local residents and corridor traffic.

Full model outputs are available in Appendix 1.

- Starting Forecast: 1.36 percent of light duty passenger vehicles are electric by 2035.
- Aggressive Forecast: 25 percent of light duty passenger vehicles are electric by 2035.
- TEINA default: 50 percent of light duty passenger vehicles are electric by 2035.

Starting Forecast

Currently, EVs in the Company’s Oregon service area make up 0.09 percent of EVs in the state of Oregon. The Company’s high adoption rate EV forecast shows 0.36 percent of vehicles will be electric by 2030, and 1.36 percent electric by 2035. At adoption rates this low, the TEINA model results in negative additional port counts in the early years because the default 2020 infrastructure values loaded into the model are higher than actual EV needs in 2025. Idaho Power discussed these results with modeling experts at Oregon DOT and confirmed that the Company set up the model correctly, and the negative results are due to DOT-estimated existing infrastructure lacking sufficient modeling granularity to accommodate the relatively low adoption rates in the early years of the forecast period. It should also be noted that the default assumptions in the Oregon DOT-developed TEINA model will not tie to Idaho Power’s prior discussion of existing charging infrastructure in Oregon because the TEINA model’s assumptions are based on an allocation of total Oregon infrastructure rather than an actual count of charging stations within Idaho Power’s service area.

Notwithstanding these modeling issues, the results below show today’s actual port counts and the needed number of additional ports based on expected adoption rates by 2025, 2030, and 2035.

Table 6

Starting Forecast Results

Type	Current Total	Additional Ports Required			Ending Total
	2022	2025	2030	2035	2035
Level 1/2	7	0	0	33	40
DCFC/Corridor	16	0	0	7	23

Based on the starting forecast results, the region exceeds the needs forecasted for 2025 and is on target to meet or exceed needs for 2030 if anticipated corridor charging from NEVI funding is considered.

Aggressive Forecast

The Company also modeled a more aggressive adoption rate than its current forecast by assuming EV registrations in the Company’s Oregon service area match the current Oregon state average of 2% by 2025. Next, Idaho Power assumed 10% EV adoption by 2030, and 25% EV adoption by 2035.

Table 7

Aggressive Forecast Results

Type	Current Total		Additional Ports Required		Ending Total
	2022	2025	2030	2035	2035
Level 1/2	7	40	233	479	759
DCFC/Corridor	16	18	66	139	239

The aggressive scenario identifies 40 additional Level 2 charging ports and 18 additional DCFC or corridor charging ports needed by 2025. The Company also analyzed which census tracts show the greatest charging infrastructure need through 2025 according to this scenario. In Table 8 below, the Company has highlighted the census tracts with the highest need in in 2025.

Table 8

Aggressive Forecast Results

Census Tract ID	City	County	POP_SQMI	Current Total		Add'l Ports Required		Ending Total
				2022	2025	2030	2035	2035
41001950100*	Greenhorn	Baker	2.5	0	4	16	36	56
41001950300*	Huntington	Baker	4.1	8	0	9	31	48
41001950600*	Halfway	Baker	1.9	1	2	18	36	57
41023960100*	Granite	Grant	0.7	0	3	12	27	42
41025960200*	Undefined	Harney	0.2	0	3	14	26	43
41045970200	Ontario	Malheur	170.5	0	7	33	68	108
41045970300	Ontario	Malheur	609	0	5	23	46	74
41045970400	Ontario	Malheur	1183.6	9	0	31	69	109
41045970500	Nyssa	Malheur	78.1	0	7	33	70	110
41045970600	Vale	Malheur	31.1	1	5	34	72	113
41045970700	Adrian	Malheur	14.3	1	2	11	23	37

Census Tract ID	City	County	POP_SQMI	Current Total		Add'l Ports Required		Ending Total
				2022	2025	2030	2035	2035
41045970900*	Jordan Valley	Malheur	0.6	0	6	31	64	102
41063960100*	Joseph	Wallowa	1.2	0	3	17	33	53

*Census tract falls only partially in Idaho Power's Oregon service area

Excluding the census tracts where the majority of the population is outside of Idaho Power's Oregon service area (Greenhorn, Granite, and Joseph), the census tracts with the biggest charging infrastructure need by 2025 are in Malheur County.

Each of the major population centers in the highlighted census tracts are located along a designated alternative fuel corridor according to Oregon DOT's NEVI Plan. In addition, town footprints are small in eastern Oregon such that a corridor charging station is easily accessible to the local community. While the respective roadways in this area will likely be prioritized for funding in the later years of Oregon's NEVI plan, the Company anticipates that the anticipated corridor charging stations built in accordance with the NEVI program could serve a majority of the charging needs for both local use and corridor travel in this area.

TEINA Defaults

Idaho Power modeled EVSE needs using the TEINA default values to achieve a 50% adoption rate by 2035. This matches the goals set by the Oregon Legislative Assembly during the 2019 Regular Session, which established comprehensive policies to encourage aggressive adoption of zero emission vehicles ("ZEV") to achieve the state's greenhouse gas reduction goals: 50,000 registered ZEVs by 2020; 250,000 registered ZEVs by 2025; 25 percent of registered vehicles and 50 percent of new motor vehicle sales be ZEVs by 2030; 90 percent of new motor vehicle sales be ZEVs by 2035.¹⁹

Table 9

TEINA Default Results

Type	Current Total		Additional Ports Required		Ending Total
	2022	2025	2030	2035	2035
Level 1/2	7	142	549	824	1,522
DCFC/Corridor	16	66	159	227	468

Under the TEINA Default scenario, EVSE requirements by 2025 are over three times that of the Aggressive Scenario modeled by the Company.

¹⁹ Senate Bill 1044, Section 2 (3)(b). Signed into law effective January 1, 2020.

Costs

Idaho Power evaluated the costs to achieve the three scenarios of EV charging by 2025 using PacifiCorp’s Commercial Oregon Site Assessment and National Renewable Energy Laboratory (“NREL”) cost data. As discussed previously, based on the Company-developed forecast of EV adoption in its Oregon service area, no additional investment is required to meet the EVSE targets resulting from the TEINA model. The Aggressive and TEINA Default scenarios would require estimated incremental investment of \$3.66 million and \$13.3 million, respectively.

Table 10

Investment required to meet each scenario target

Port Type	Port Cost	Stations Needed			Costs		
		Starting	Aggressive	TEINA Default	Starting	Aggressive	TEINA Default
Level 2	\$24,000	0	40	142	\$0	\$960,000	\$3,408,000
DCFC/Corridor	\$150,000	0	18	66	\$0	\$2,700,000	\$9,900,000
Total	-----	0	58	208	\$0	\$3,660,000	\$13,308,000

Based on these results and the market barriers discussed earlier in this report, Idaho Power’s TE Plan focuses on support for customers that choose to install charging through education, technical assistance, and connecting customers to state and federal funding sources.

IDAHO POWER’S TRANSPORTATION ELECTRIFICATION PLAN (2023–2025)

OAR 860-087-0020(3)(b)

Idaho Power’s 2023 – 2025 Transportation Electrification Plan is intended to address market barriers by building a solid foundation of understanding and awareness upon which future efforts may be built. As market barriers to adoption decline due to technological improvements in range, larger vehicle sizes (including pickup trucks), as well as greater availability, Idaho Power wants to support its customers’ awareness and adoption of this technology.

In developing its Plan, Idaho Power is balancing its goals of supporting electrification with supporting its customers by ensuring prices stay low and program expenditures do not place an undue burden on its small Oregon customer base. Therefore, Idaho Power’s strategy to accelerating TE in its Oregon service area is focused on three key areas:

- Conducting at least **three outreach activities per year**.
- Providing **resources to customers**.
- Providing targeted **technical assistance** to those interested in learning more about EVs, installing charging, or converting their fleet.

The Company believes that these are the most efficient and cost-effective channels to further transportation electrification in eastern Oregon at this time.

Outreach Activities

Idaho Power will conduct at least three outreach activities per year, with a goal of raising awareness of electric transportation and engaging with customers. Activities may include but are not limited to:

- Displaying an EV at county fairs or community events
- In person or on-line trainings and webinars
- Bill inserts and/or bill messaging

Activity formats and locations will be chosen based on visibility, audience, reach, location, safety, and opportunities to engage with the community. The Company will first look for in-person activities, however, will be ready to pivot to on-line in order to reach a larger audience or due to safety (public health) concerns.

Topics of focus could include general EV education, or more specific items like electric school buses, fast charging, agricultural equipment, and more. Topics will be chosen based on relevance, opportunities (such as federal funding), and customer interest.

Activities will be promoted through targeted social media and/or direct invitation from Idaho Power’s energy advisors and industry associations. Idaho Power also maintains an EV Network that customers can opt into.²⁰ Idaho Power sends notifications to EV Network customers letting them know about events and opportunities that may be of interest.

Table 11

Past EV networking activities

In Person Events/Trainings	Webinars
Malheur County Fair	Electrifying City Fleets
Ontario Alive After Five	EVs Beyond the Road
Student Day: Treasure Valley Community College	Bridging the Gap: Rural Electrification Transportation
Ontario Classic Car Show	The Business Case for Workplace Charging
First Responder Training	Dealership Informative Session

Idaho Power’s outreach activities to date have provided the Company with valuable information and takeaways that will be applied to its 2023 – 2025 TE Plan in order to improve customer offerings and overall experience. Primary project learnings include:

²⁰ <https://www.idahopower.com/energy-environment/green-choices/electric-vehicles/ev-network/>

- Partnerships are key to advancing EVs. The Treasure Valley Clean Cities Coalition (“TVCCC”)²¹, based in Boise, Idaho, serves the greater Treasure Valley region that includes part of eastern Oregon²². Work by TVCCC can be leveraged to support the Company’s Oregon service area. For example, the TVCCC provided EVs for the Company’s 2018 EV training event as well as co-sponsored the 2020 dealership and fleet webinars which were marketed to both Idaho and Oregon dealerships in the region.
- There is currently a lack of organized industry associations in the Company’s Oregon service area through which to promote or support trade ally trainings. The Company recognizes this need and will continue to explore meaningful training opportunities.
- Although the Company is a trusted energy advisor to its customers, third-party training events provide an additional valuable perspective appreciated by participants. In Idaho Power’s experience, having a third-party professional involved (emergency responder, electrician, manufacturer, etc.) helps break down barriers held by participants by dispelling myths about EVs.
- Pairing EV outreach with existing community events such as the county fairs or college sponsored community days ensures participation. Over the last five years, Idaho Power has worked with Treasure Value Community College, the Four Rivers Cultural Center and Museum, and the Drexel H Foundation in Vale to provide EV educational events. The Company intends to continue building relationships with these organizations, especially after years without in-person events due to the COVID-19 pandemic.
- In its Idaho service area, Idaho Power partners with environmental groups, cities, and universities to promote EVs and TE. For example, Idaho Power has opportunities to educate people about EVs at Earth Day events held in Idaho sponsored by the environmental groups. Environmental groups help promote these events ensuring larger audiences. These groups do not typically operate, or in many cases even exist, in eastern Oregon. As a result, the Company must seek out other types of gatherings to promote EVs in its Oregon service area.

Resources

Idaho Power has readily available EV materials and resources to help customers interested in learning more about EVs.

EV Webpage

The Company’s EV Webpage²³ provides information for all customer classes on:

- EV costs and benefits
- Charging options and charging station locations

²¹ <https://treasurevalleycleancities.org/>

²² While primarily located in southwestern Idaho where the Payette, Boise, Weiser, Malheur, Owyhee, and Burnt rivers drain into the Snake River, the Treasure Valley includes all the lowland areas from Vale in rural eastern Oregon to Boise.

²³ <https://www.idahopower.com/energy-environment/green-choices/electric-vehicles/>

- EV models
- Available incentives (including a savings calculator)
- Workplace and fleet charging

In 2021, Idaho Power launched a commercial EV section on its website designed to help commercial customers evaluate fleet conversions, workplace charging opportunities, and different funding options.²⁴ It includes an “Incentive Programs & Grants” section which provides commercial customers information about tax credits and incentives.

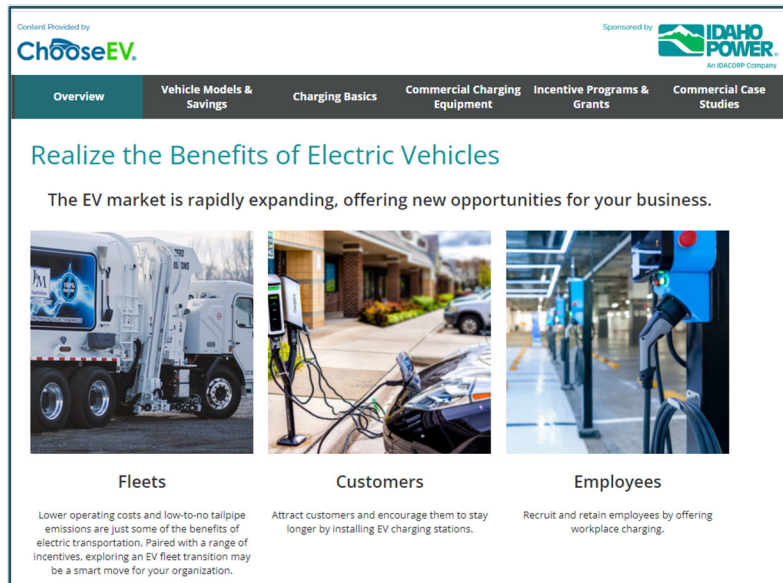


Figure 7
Commercial EV section on Idaho Power website

EV Marketing Materials

Examples of Idaho Power’s current EV marketing materials are listed below and provided in Appendices 4-8. Existing relevant marketing materials will be maintained and updated as necessary, and new materials will be developed in support of outreach activities and technical assistance needs.

Table 12
EV marketing materials

Type	Description
Customer Connections	Idaho Power distributes information through its monthly billing newsletter.
Brochures, Posters, Handouts	Idaho Power uses a simple handout to drive customers to its robust web content.
Bill Inserts	Inserts sent to all Oregon customers with information about EV incentives available to them.

²⁴ <https://www.idahopower.com/energy-environment/green-choices/electric-vehicles/evs-and-your-business/>

Type	Description
Press Releases	Idaho Power issues press releases for events such as charging station openings or other newsworthy events.
Social Media	Idaho Power uses targeted social media ads and Facebook posts to raise awareness of events and activities.

Technical Assistance

Idaho Power has dedicated TE staff members that provide technical assistance and serve as the utility representative and EV subject matter expert for customers and the community. TE staff is available by emailing ev@idahopower.com or calling the Idaho Power Customer Service Center.

TE staff members participate in local and state strategic TE efforts including:

- Serving on the State of Idaho Volkswagen project review committee
- Serving on the board of directors for Forth and the Treasure Valley Clean Cities Coalition
- Tracking and providing input on strategic state (Idaho and Oregon) efforts including the NEVI programs and the Idaho Strategic Energy Alliance Alternative Fuels Task Force

Support for Commercial Customers

TE staff members provide technical assistance to commercial customers interested in transportation electrification, including fleet electrification and public and workplace charging. Idaho Power’s TE staff is available to answer questions, help customers select and size the appropriate charging for their needs, and connect them to resources and funding. Types of assistance include:

- Providing basic information to businesses/customers interested in electrification for public charging, fleets, and workplaces
- Helping customers identify the right type and capacity charging for their needs
- Educating customers on the site upgrade process and providing billing evaluations for proposed projects
- Connecting businesses to funding opportunities and providing letters of support for federal grant applications
- Helping promote public charging once installed

An example of how Idaho Power TE staff has provided technical assistance to commercial customers is its work with Mountain Rides Transportation Authority (“MRTA”) in 2021. TE staff partnered with MRTA, serving Blaine County, Idaho, to electrify their buses and install charging

infrastructure. MRTA plans to convert all their buses to electric by 2027 and reduce an estimated 1,100 tons of CO₂.²⁵

Infrastructure & Investments Jobs Act

In addition to responding to customer inquiries, TE staff will conduct proactive outreach and assistance in support of the IIJA. IIJA provisions include the NEVI program to support corridor charging, the Electric School Bus program, and funding to support community charging. Additional funding may become available through other federal or state initiatives. More information about these initiatives is included below.

Corridor charging along I-84, U.S. Route 20, and U.S. Route 26

Idaho Power has evaluated potential sites meeting the NEVI spacing guidelines of 50 miles from other stations and based on population centers in eastern Oregon. The Company has also identified where sufficient capacity currently exists. As the state moves to fund projects along these corridors in 2023-2025, Idaho Power will participate in stakeholder meetings and assist customers in evaluating and applying for NEVI funded projects.

Electric School Buses

The Company will reach out to local school districts and share information about the IIJA funded Electric School Bus program. The Company sponsored a webinar on rural school bus electrification in the fall of 2022.

Community Charging

The IIJA contains a competitive funding program for communities to develop infrastructure including additional fast charging and Level 2 sites. Idaho Power will ensure communities in the Oregon service area receive information about this program via the Company's energy and key account advisors.

PERFORMANCE OF TE PROGRAMS

OAR 860-087-0020(3)(c)

Given Idaho Power's service area characteristics and TE Plan focused on education and outreach, metrics related to infrastructure and program equity are less applicable and/or do not provide value in evaluating the TE Plan. However, Idaho Power understands the importance of metrics as both a quantitative measure of success and a way to track improvements over time. The Company will continue to track EV adoption in its Oregon service area and look for opportunities to measure the success of its TE Plan. Yearly metrics will include:

- Number of BEVs and PHEVs registered in the Oregon service area
- Number of EVSE ports by station type (Level 1, 2 and DCFC)

²⁵ https://www.mtexpress.com/news/transportation/electrifying-fleet-mountain-rides-gets-20k-grant-from-idaho-power/article_c51eab44-0c2d-11ec-aa4c-bb0557e2fe68.html

- Response rate to annual customer surveys and changes in survey responses
- Success of outreach efforts measured through social media views, or for earned media, number of impressions

Environmental benefits including greenhouse gas emissions impacts

OAR 860-087-0020(3)(c)(A)

71 percent of EVs (37 out of 52) registered in Idaho Power’s Oregon service area are BEVs, which will not emit any tailpipe emissions. Based on EVs commercially available today, Idaho Power assumes all BEVs registered in its Oregon service area replaced light duty gasoline-powered passenger vehicles.

The remaining 29 percent of EVs in Idaho Power’s Oregon service area are PHEVs. PHEVs can operate on electricity only, gasoline only, or some combination of electricity and gasoline. A PHEV operating on electricity only (like a BEV) does not generate any tailpipe emissions. When a PHEV is operating on gasoline only, it creates tailpipe emissions based on the PHEV’s gasoline fuel economy. Tailpipe emissions for a PHEV operating on both electricity and gasoline cannot be calculated without detailed information about how the PHEV operates.

Greenhouse gas emissions reductions from the electric vehicles in Idaho Power’s service area are available from the Oregon EV Dashboard, maintained by the Oregon Department of Energy. Modeled based on a 2021 Hyundai Kona ICE vs. a 2021 Kona EV traveling 11,556 miles per year, the gas-powered version emits 10,038 lbs. carbon-dioxide equivalent (“CO₂e”) while the electric version in Idaho Power’s service area would emit just 2,042 lbs. CO₂e per year for a savings of 7,996 lbs. CO₂e per BEV per year²⁶. Plug-in hybrid savings would be less assuming some portion of driving is done using gasoline.

In addition, the Oregon Department of Quality calculates annual metric tons CO₂e emissions per megawatt-hour through its Greenhouse Gas Reporting Program.²⁷ Based on Idaho Power’s 2021 value of 0.333, this would equate to 2,828 lbs. CO₂e per year for a savings of 7,210 lbs. CO₂e per BEV per year.

Based on 37 BEVs registered in Idaho Power’s Oregon service area, there is an estimated savings of at least 266,774 lbs. CO₂e per year. In addition, Idaho Power’s “Clean Today. Cleaner Tomorrow” goal to have 100% of its energy clean by 2045 will further reduce greenhouse gas emissions from the electrified transportation sector.

Table 13 below details the non-greenhouse gas emissions reductions from 37 electric vehicles in Idaho Power’s Oregon service territory. It includes both the reduction in tailpipe emissions from gas-powered vehicles and the increase in emissions from EV charging.

²⁶ Annual EV Emissions from vehicle fueled in Idaho Power’s service area: www.oregon.gov/energy/Data-and-Reports/Pages/Oregon-Electric_Vehicle-Dashboard.aspx

²⁷ <https://www.oregon.gov/deq/ghgp/Pages/GHG-Emissions.aspx>

Table 13

Non-greenhouse gas emissions based on 37 BEVs

Pollutant	Tailpipe Emissions		EV Emissions		Net Emissions
	Grams per Mile ²⁸	Total Annual Pounds	Grams per Mile ²⁹	Total Annual Pounds	Total Annual Pounds
Total Hydrocarbons (HC)	0.251	237	0.009	9	-228
Carbon Monoxide (CO)	3.812	3,593	0.047	44	-3,549
Nitrogen Oxides (NOx)	0.157	148	0.062	59	-89
PM2.5	0.004	4	0.007	7	3

* Average miles/vehicle per year in 2022: Oregon 11,556³⁰

* Average miles/kWh: 3

The underlying calculations for these values, as well as additional annual emissions calculations, are provided in Appendix 9.

Electric vehicle adoption

OAR 860-087-0020(3)(c)(B)

Idaho Power’s TE Plan seeks to increase vehicle adoption by focusing on breaking down market barriers while supporting customer adoption of EVs. If Idaho Power can ensure customers are aware of the incentives that remove or lower market barriers, they may be more inclined to purchase EVs or build charging infrastructure to support increased EV adoption.

This Plan aims to:

- Raise awareness of EVs and showcase that they are available and operating in eastern Oregon.
- Educate customers on incentives like the Oregon Clean Vehicle Rebate Program and the Inflation Reduction Act that help lower the EV purchase price.
- Support commercial customers in transitioning their fleets through outreach and technical assistance.
- Break down barriers associated with range by supporting infrastructure development via outreach, marketing resources, and technical assistance to customers interested in installing workplace and public charging and connecting customers to state and federal EVSE incentives.

²⁸ Emissions from Light Duty Vehicle: <https://www.bts.gov/content/estimated-national-average-vehicle-emissions-rates-vehicle-vehicle-type-using-gasoline-and>

²⁹ EV emissions are based on emissions rates for Idaho Power’s generation, contained in Appendix 9.

³⁰ Average miles/vehicle per year in 2022: Oregon 11,556: <https://www.oregon.gov/energy/Data-and-Reports/Pages/Oregon-Electric-Vehicle-Dashboard.aspx>

Due to vehicle availability, supply chain issues, and the state roll out plan for NEVI funding, both fleet conversions and the anticipated NEVI funded charging infrastructure will not happen in the next year, but rather will roll out over the next 2 to 5 years. Because these projects will not be complete until the later years of the planning period, there will likely be a lag in resulting passenger/consumer vehicle adoption. Therefore, Idaho Power does not anticipate adoption rates changing significantly in the 2023 – 2025 planning period.

Underserved community inclusion and engagement

OAR 860-087-0020(3)(c)(C)

Idaho Power’s Oregon service area falls completely under the definition of underserved communities as defined in Oregon Laws 2021, Chapter 95 Section 2(6)(b).³¹

- The area is entirely comprised of rural or frontier communities.
 - Rural is defined as any geographic areas in Oregon 30 or more miles from an urban center of 50,000 people or more.
 - Frontier is defined as any geographic area in Oregon 75 or more miles from a community of 2,000 people or less.³²
- The largest community, Ontario, has a population of approximately 11,645, according to the U.S. Census.
- Malheur, Baker, and Harney Counties’ median and per-capita household income levels fall under the median and per capita incomes of the state of Oregon.
- Approximately 35 percent of Malheur County is of Hispanic or Latino origin, according to the U.S. Census Bureau.

In addition, for the Oregon NEVI plan³³, the state mapped Disadvantaged Communities (“DAC”) using the Joint Office of Energy and Transportation (“JOET”) definition which is consistent with the Justice40³⁴ requirements. Based on this map, most of Idaho Power’s Oregon service area is in a DAC community.

³¹ Enacted into law in 2021, HB 2165 Section 2 (6)(b) requires an electric company to make reasonable efforts to support: “The use of electric vehicles by communities of color, communities experiencing lower incomes, tribal communities, rural communities, frontier communities, coastal communities and other communities adversely harmed by environmental and health hazards;”

³² *In the Matter of Public Utility Commission of Oregon, Investigation of Transportation Electrification Investment Framework*, Docket No. UM 2165, Order No. 22-134 (Aug. 26, 2022)

³³ <https://www.oregon.gov/odot/climate/Documents/Oregon%20NEVI%20EV%20State%20Plan.pdf>

³⁴ <https://www.whitehouse.gov/environmentaljustice/justice40/>

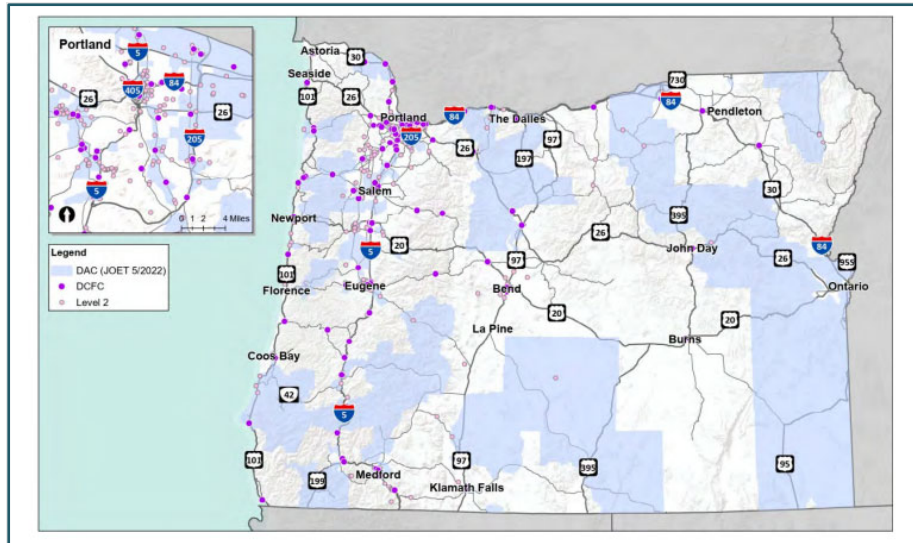


Figure 8

Map of Oregon disadvantaged communities

As a result, all work that brings awareness to or helps build out infrastructure in the Company's Oregon service area will benefit underserved communities.

To ensure the Company is engaging with and meeting the needs of its customers, Idaho Power will:

- Continue to engage all customer groups through surveys like the Idaho Power 2022 EV Survey conducted to Oregon residential customers. Idaho Power received 673 total responses to this survey.
- Provide information on upcoming workshops and events, as well as available rebates to customers through existing networks. These networks include community action partnerships agencies, social media, and Idaho Power's energy advisors who engage with customers directly. The Company will also explore distributing information through community calendars and libraries.
- Continue to respond to inquiries from non-English speakers through multilingual customer service representatives and translation services.

Equity of program offerings to meet underserved communities

OAR 860-087-0020(3)(c)(D)

Idaho Power's 2023 – 2025 TE Plan does not include infrastructure measures.

Distribution system impacts and grid integration benefits

OAR 860-087-0020(3)(c)(E)

Idaho Power’s Distribution Planning Report – Part 2³⁵ details the distribution system impacts of forecast EV adoption through the TE planning period of 2022 – 2025. Because Idaho Power’s TE Plan does not include infrastructure measures or rate design programs specific to EV charging, there are no direct grid integration benefits associated with the Plan.

Program participation and adoption

OAR 860-087-0020(3)(c)(F)

Idaho Power’s 2023 – 2025 TE Plan does not include infrastructure measures. However, the Company does plan to provide outreach and education to customers interested in installing charging. Education will include information on the different types of charging and best use cases, site upgrade costs and process, evaluation of billing impacts, managed charging strategies, and federal and state tax credits and incentives. Idaho Power will track the number of new EVSE projects throughout the planning period.

Infrastructure performance including charging adequacy which considers, but is not limited to reliability, affordability, and accessibility

OAR 860-087-0020(3)(c)(G)

Idaho Power’s 2022 TE Plan does not include infrastructure measures.

SUPPORTING DATA AND ANALYSIS

OAR 860-087-0030(3)(d)

Where available, supporting data for the TE Plan has been provided throughout this document and in the appendices.

³⁵ Docket No. UM 2196, Idaho Power Distribution System Planning Report Part 2, pages 18-19 (Aug 15, 2022).

THE COMPANY’S POTENTIAL IMPACT ON THE COMPETITIVE EV SUPPLY EQUIPMENT MARKET

OAR 860-087-0030(3)(e)

Given the current state of the eastern Oregon market, it is premature to identify the Company’s potential impact on the competitive EV supply equipment market. Idaho Power expects that any material impact on this market will not occur for several years until greater adoption is achieved. Supply chain issues will further slow market development in the short term. Currently, Idaho Power does not intend to own or operate stations outside of public-facing properties it owns such as visitor centers and campgrounds. Idaho Power will be attentive to this component in future years as the TE market in its service area expands.

ESTIMATED CUSTOMER IMPACT

OAR 860-087-0020(3)(f)

Idaho Power is sensitive to the nature of its service area and wants to ensure its TE Plan does not place additional financial burden on its customers without providing a tangible benefit. Until market barriers are reduced so that customers will benefit from more robust programs and infrastructure measures, Idaho Power does not intend to use customer funds to pay for TE programs included within the TE Plan and anticipates that this Plan will be de minimis to rates.

TE BUDGET

OAR 860-087-0020(3)(g)

Idaho Power has developed a budget that balances the Company’s desire to accelerate the adoption of electric vehicles with the equity concerns and economic realities of the region. The Company aims to leverage existing events and partnerships and prioritize lower cost marketing channels such as social media and electronic communications where feasible. Idaho Power currently does not participate in the Clean Fuels Program nor is it subject to the Monthly Meter Charge, so the Company does not collect revenue from these programs.

Budget

Table 14

Anticipated budget for Idaho Power’s 2023 – 2025 TE Plan

TASK DESCRIPTION	2023	2024	2025
Admin Staff Labor (O&M)	\$8,376	\$8,627	\$8,886
Admin Staff Business Expense	\$650	\$675	\$700
Marketing	\$2,000	\$2,100	\$2,250
Training, Education, & Workshops	\$3,550	\$3,650	\$4,000
Total	\$14,576	\$15,052	\$ 15,836

The Company feels confident that its outreach efforts combined with state and federal funding could position eastern Oregon to meet an aggressive EV adoption scenario from an infrastructure perspective over the next 10 years. However, Idaho Power will continue to monitor increases in TE in its Oregon service territory as well as the value of Clean Fuels Credits and make changes to its budget and TE portfolio as needed throughout the planning process.

To determine the cost effectiveness of the expenditures detailed above, Idaho Power performed three cost/benefit analyses for its TE Plan. These include:

- Participant Cost Test (“PCT”) - the costs and benefits to the EV owner
- Ratepayer Impact Measure (“RIM”) - the cost and benefits to Idaho Power customers
- Societal Cost Test (“SCT”) - the costs and benefits to all Oregon residents

The results of each test are below. Overall, the Company found that the TE Plan will provide an estimated net benefit (i.e., a ratio greater than 1) according to the PCT and RIM.³⁶

Table 15

Results of benefit/cost analysis

TASK DESCRIPTION	PCT	RIM	SCT
Benefits	\$4,196,759	\$435,033	\$3,028,289
Costs	\$1,906,056	\$248,947	\$3,908,336
Ratio	2.20	1.75	0.77

To arrive at these results, the Company analyzed eight different cost/benefit components as outlined below.

³⁶ Incremental EV sales attributable to Idaho Power efforts are based on the difference between the High and Medium EV adoption forecast in the Company’s 2022 Distribution System Planning Report – Part 2, Docket No. UM 2196.

Table 16

Cost/benefit analysis components

Cost/Benefit Component	PCT	RIM	SCT
Incremental EV Cost	Cost		Cost
Federal and State EV Tax Credit	Benefit		
EV O&M Savings	Benefit		Benefit
Fuel Savings	Benefit		Benefit
Electricity Supply Costs for EV Charging		Cost	Cost
Charging Infrastructure Cost	Cost		Cost
Electricity Bill for EV Charging	Cost	Benefit	
Emission Savings			Benefit
Program Budget		Cost	Cost

A full breakdown of each cost/benefit amount as well as additional notes and sources for the analyses are provided in Appendix 2 of this report.

Clean Fuels Program

In accordance with Order No. 20-157 issued in Docket No. UM 3035³⁷, Idaho Power has been tracking the Clean Fuels Program credits applicable to its Oregon service area. Currently, with 52 vehicles, the credit value at 2.45 credits per EV and an average market price of about \$120 (as of March 2023),³⁸ the current value of Idaho Power’s credits is less than \$15,288.

Consequently, the reporting and administrative requirements would negate any benefit from claiming this funding. The Company is tracking both the average market price and number of registered vehicles and will evaluate entering the program if these funds reach a value of \$20,000 (approximately 70 vehicles at \$120 credit price).

Monthly Meter Charge

Per Oregon HB 2165, electric companies that make sales of electricity to 25,000 or more retail customers in Oregon are required to collect a monthly meter charge equal to 0.25 percent of total revenues.³⁹ Because Idaho Power does not have 25,000 customers in Oregon, Idaho Power does not collect this revenue.

CONCLUSION

Through the proposed TE Plan, Idaho Power intends to improve visibility and awareness of EVs in its Oregon service area through outreach, education, and technical assistance. While interest

³⁷ Docket No. UM 2035, Staff Memo dated Apr. 27, 2020, at pages 3-5; adopted as Appendix A to Order No. 20-157 (May 7, 2020).

³⁸ <https://www.oregon.gov/deq/ghgp/cfp/Pages/Monthly-Data.aspx>

³⁹ Oregon Laws 2021, Chapter 95 Section 2(2).

in transportation electrification is currently limited in the eastern Oregon region, Idaho Power is optimistic that with future improvements to battery technology, increased customer awareness, and continued incentives to purchase an EV or install charging infrastructure, EV adoption will continue to grow in the region.

Appendix 1
TEINA Model Output

Stations in Oregon Service Area

Type	Location	Site	Stations	Ports	County
DCFC	Huntington	1	5	8	Baker
Level 2	Halfway	1	1	1	Baker
Level 2	Vale	1	1	2	Malheur
DCFC (Tesla)	Ontario	1	8	8	Malheur
Level 1	Ontario	1	1	1	Malheur
Level 1	Adrian	1	1	1	Malheur
Level 1	Huntington	1	1	1	Baker
Level 1	Jordan Valley	1	1	1	Malheur
Total		7	18	22	

Future Stations (Based on NEVI Criteria)

Type	Location	Site	Stations	Ports	County
DCFC NEVI	Ontario	1	4	8	Malheur
DCFC NEVI	Jordan Valley	1	4	8	Malheur
DCFC NEVI	Vale	1	4	8	Malheur
DCFC NEVI	Juntura/Harper	1	4	8	Malheur
DCFC NEVI	Ironside	1	4	8	Malheur

Starting Forecast Assumptions: Business As Usual based on actual registrations

% Registrations by Year	
2025	0.23%
2030	0.36%
2035	1.36%

Aggressive Assumptions: Business As Usual based on actual registrations

% Registrations by Year	
2025	2.00% Matches Oregon State Average
2030	10.00%
2035	25.00%

[Current EV registrations in the US: How does your state stack up and who grew the most YOY? | Electrek](#)

Assumptions: TIENA Defaults aligned with Oregon Goals

% Registrations by Year	
2025	6%
2030	25%
2035	50%

Low-Income Threshold	\$ 42,568.00
Home Charging Access (2035)	85%

Disadvantaged Communities														2025 Totals			2030 Totals			2035 Totals		
Workplace L2				Public L2				DCFC					Total Level 2	Total DCFC	Total Ports	Total Level 2	Total DCFC	Total Ports	Total Level 2	Total DCFC	Total Ports	
2020	2025	2030	2035	2020	2025	2030	2035	2020	2025	2030	2035	FIPS										
0	0	0	0	0	0	0	0	0	0	0	0	0	41001950100	0	0	0	0	0	0	2	1	3
0	0	0	0	0	0	0	0	0	0	0	0	0	41001950300	0	0	0	0	0	0	2	1	3
0	0	0	0	0	0	0	0	0	0	0	0	0	41001950600	0	0	0	0	0	0	2	1	3
0	0	0	0	0	0	0	0	0	0	0	0	0	41023960100	0	0	0	0	0	0	2	1	3
0	0	0	0	0	0	0	0	0	0	0	0	0	41025960200	0	0	0	0	0	0	2	1	3
0	0	0	0	0	0	0	0	0	0	0	0	0	41045970200	0	0	0	1	0	1	5	1	6
0	0	0	0	0	0	0	0	0	0	0	0	0	41045970300	0	0	0	0	0	0	2	1	3
1	0	0	1	0	0	0	0	0	0	0	0	0	41045970400	0	0	0	0	0	0	5	0	5
0	0	0	0	0	0	0	0	0	0	0	0	0	41045970500	0	0	0	1	0	1	5	1	6
0	0	0	0	0	0	0	0	0	0	0	0	0	41045970600	0	0	0	1	0	1	5	1	6
0	0	0	0	0	0	0	0	0	0	0	0	0	41045970700	0	0	0	0	0	0	2	1	3
0	0	0	0	0	0	0	0	0	0	0	0	0	41045970900	0	0	0	1	0	1	4	1	5
0	0	0	0	0	0	0	0	0	0	0	0	0	41063960100	0	0	0	0	0	0	2	1	3
Total													0	0	0	4	0	4	40	12	52	

Highway Corridors	NAME	30-Mile Segment	Charger Power (kW) and Cumulative DCFC by 30-mile segment		
			2025	2030	2035
I-84	OLD OREGON TRAIL	I-84: 11	3	3	3
I-84	OLD OREGON TRAIL	I-84: 12	5	5	5
I-84	OLD OREGON TRAIL	I-84: 13	3	3	3
US 20	CENTRAL OREGON	US 20: 14	0	0	0
US 20	CENTRAL OREGON	US 20: 15	0	0	0
US 26	JOHN DAY	US 26: 14	0	0	0
US 26	JOHN DAY	US 26: 15	0	0	0
US 26	JOHN DAY	US 26: 16	0	0	0
		TOTAL	11	11	11

Highway Corridors	NAME	30-Mile Segment	Charger Power (kW) and Cumulative DCFC by 30-mile segment		
			2025	2030	2035
I-84	OLD OREGON TRAIL	I-84: 11	6	9	15
I-84	OLD OREGON TRAIL	I-84: 12	6	10	14
I-84	OLD OREGON TRAIL	I-84: 13	5	5	9
US 20	CENTRAL OREGON	US 20: 14	2	2	2
US 20	CENTRAL OREGON	US 20: 15	1	3	6
US 26	JOHN DAY	US 26: 14	0	0	0
US 26	JOHN DAY	US 26: 15	0	0	0
US 26	JOHN DAY	US 26: 16	0	0	0
		TOTAL	20	29	46

Highway Corridors	NAME	30-Mile Segment	Charger Power (kW) and Cumulative DCFC by 30-mile segment		
			2025	2030	2035
I-84	OLD OREGON TRAIL	I-84: 11	14	20	26
I-84	OLD OREGON TRAIL	I-84: 12	14	19	25
I-84	OLD OREGON TRAIL	I-84: 13	9	11	15
US 20	CENTRAL OREGON	US 20: 14	2	4	4
US 20	CENTRAL OREGON	US 20: 15	6	9	11
US 26	JOHN DAY	US 26: 14	0	0	0
US 26	JOHN DAY	US 26: 15	0	0	2
US 26	JOHN DAY	US 26: 16	0	1	1
		TOTAL	45	64	84

Port Type	Port Cost	Stations Needed			Costs		
		Starting	Aggressive	TEINA Default	BAU	Mid-Range	TEINA Default
Level 2	\$ 24,000	0	40	142	\$ -	\$ 960,000	\$ 3,408,000
DCFC/Corridor	\$ 150,000	0	18	66	\$ -	\$ 2,700,000	\$ 9,900,000
Total	---	0	58	208	\$ -	\$ 3,660,000	\$ 13,308,000

Assumptions:

Port Costs

Level 2: Source PacifiCorp

DCFC: NREL (Slide 6) [DCFC + Hydrogen Station Design Optimization \(nrel.gov\)](https://www.nrel.gov/energy-hydrogen/publications/dcfc-hydrogen-station-design-optimization.html)

Aligns with data from PacifiCorp, RMI and others.

Appendix 2
Benefit/Cost Analysis

Cost Benefit Component ¹	PCT	TRC/SCT	RIM	NPV	Notes	Source
Incremental EV Cost	Cost	Cost		\$1,246,832	NPV of incremental cost of EVs sold between 2023-2025. Adjusted from 2015\$ to 2023\$. Idaho Power Real Discount rate of 4.712%.	Incremental Costs. https://theicct.org/wp-content/uploads/2021/06/EV_cost_2020_2030_20190401.pdf . Figure 4. Popular Vehicle Type by State. https://www.iasecars.com/popular-vehicle-type-by-state-study .
Federal & State EV Tax Credit	Benefit			\$1,339,158	NPV of state tax credits (\$2500) and federal tax credits (\$7500) for EVs sold between 2023-2025. Idaho Power Real Discount rate of 4.712%.	Oregon EV Tax Credit. https://goelectric.oregon.gov/incentives-rebates . Federal Clean Vehicle Tax Credit. https://afdc.energy.gov/laws/409
EV O&M Savings	Benefit	Benefit		\$797,599	NPV of lifetime maintenance savings versus internal combustion engine (ICE) car. Applied to incremental EVs sold between 2023 -2025. Adjusted from 2019\$ to 2023\$.	Lifetime Maintenance Costs. https://advocacy.consumerreports.org/wp-content/uploads/2020/10/EV-Ownership-Cost-Final-Report-1.pdf . Table 2.2.
Fuel Savings ²	Benefit	Benefit		\$2,060,002.02	NPV of lifetime fuel savings. Applied to incremental EVs sold between 2023-2025. Fuel savings based on default vehicle on dashboard. 2021 Hyundai Kona Electric. Driven 222 miles/week. Current vehicle gas mileage of 25 MPG. Gas \$3.50 gallon. 2021 IRP escalator of 2.3%. Idaho Power Real Discount rate of 4.712%.	Oregon Electric Vehicle Dashboard. https://www.oregon.gov/energy/Data-and-Reports/Pages/Oregon-Electric-Vehicle-Dashboard.aspx . Electricity vs. Gas. Calculate Your Personal BEV Fuel Savings.
Electricity Supply Costs for EV Charging ³		Cost	Cost	\$207,952.47	NPV of lifetime EV charging cost. RTF R-All-Plug EVSEChargeSave-All-All-U load shape. Idaho Power Weighted Average Cost of Capital Discount rate of 7.12%.	2021 Idaho Power Integrated Resource Plan. Avoided Costs. https://docs.idahopower.com/pdfs/AboutUs/PlanningforFuture/irp/2021/2021_IRP_AppC_Technical%20Report_WEB.pdf . Regional Technical Forum. Load and Savings Shapes. https://nwcouncil.app.box.com/v/ProCost-LoadSavingShapes-v5-05
Charging infrastructure Cost-Home	Cost	Cost		\$224,191.12	NPV of home charging stations/upgrades for EVs sold between 2023-2025. Adjusted from 2019\$ to 2023\$. Assume flat costs due to declining costs of at home charging stations. Idaho Power Real Discount rate of 4.712%.	At home charging station costs. https://theicct.org/wp-content/uploads/2021/06/ICCT_EV_Charging_Cost_20190813.pdf . Page 8. 2021 Idaho Power Integrated Resource Plan. Financial Assumptions. https://docs.idahopower.com/pdfs/AboutUs/PlanningforFuture/irp/2021/2021_IRP_AppC_Technical%20Report_WEB.pdf .
Charging infrastructure Cost-Region		Cost		\$2,188,366.86	NPV of public and private charging station constructed between 2023 and 2024. Costs from PacifiCorp and NREL. Idaho Power Real Discount rate of 4.712%.	2021 Idaho Power Integrated Resource Plan. Financial Assumptions. https://docs.idahopower.com/pdfs/AboutUs/PlanningforFuture/irp/2021/2021_IRP_AppC_Technical%20Report_WEB.pdf .
Utility Bill for EV Charging	Cost		Benefit	\$435,033.38	NPV of lifetime BEV fuel costs. Applied to incremental EVs sold between 2023-2025. BEV fuel costs based on default vehicle on dashboard. 2021 Hyundai Kona Electric. Driven 222 miles/week. Current vehicle gas mileage of 25 MPG. Rate \$0.11/kWh. 2021 IRP escalator of 2.3%. Idaho Power Real Discount rate of 4.712%.	Oregon Electric Vehicle Dashboard. https://www.oregon.gov/energy/Data-and-Reports/Pages/Oregon-Electric-Vehicle-Dashboard.aspx . Electricity vs. Gas. Calculate Your Personal BEV Fuel Savings.
Emission/Carbon Savings		Benefit		\$170,688.78	NPV of lifetime carbon emission of gasoline vehicles. Applied to incremental EVs sold between 2023-2025. Annual carbon emission based on default vehicle on dashboard. 2021 Hyundai Kona Electric. Driven 11,556 miles/year. Carbon value from 2021 IRP. Idaho Power Weighted Average Cost of Capital Discount rate of 7.12%.	Oregon Electric Vehicle Dashboard. https://www.oregon.gov/energy/Data-and-Reports/Pages/Oregon-Electric-Vehicle-Dashboard.aspx . Electricity vs. Gas. Carbon Emission Data by Utility.
Program budget		Cost	Cost	\$40,994.04	NPV of 2023-2025 budget. Idaho Power Weighted Average Cost of Capital Discount rate of 7.12%.	
	Benefit	\$ 4,196,759	\$ 3,028,289	\$ 435,033		
	Cost	\$ 1,906,056	\$ 3,908,336	\$ 248,947		
	Ratio	2.20	0.77	1.75		

¹ Incremental EV sales attributable to Idaho Power efforts based on the difference between the High and Medium Idaho Power Oregon Share of New EV forecast.

² Analysis based on 10 year measure life

³ Idaho Power IRP avoided costs include carbon costs.

Appendix 3

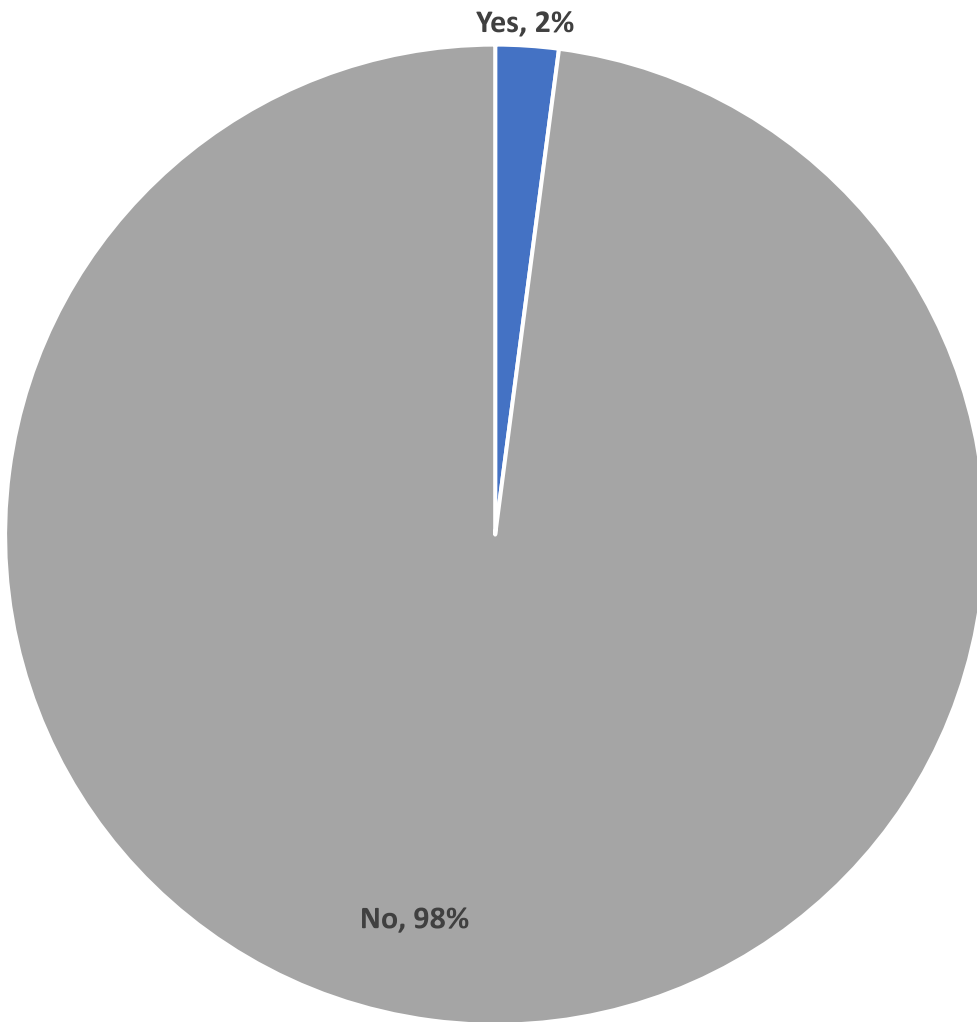
Idaho Power 2022 EV Survey Results

OR Residential EV Study

Q1. Do you already own an Electric Vehicle (EV)?

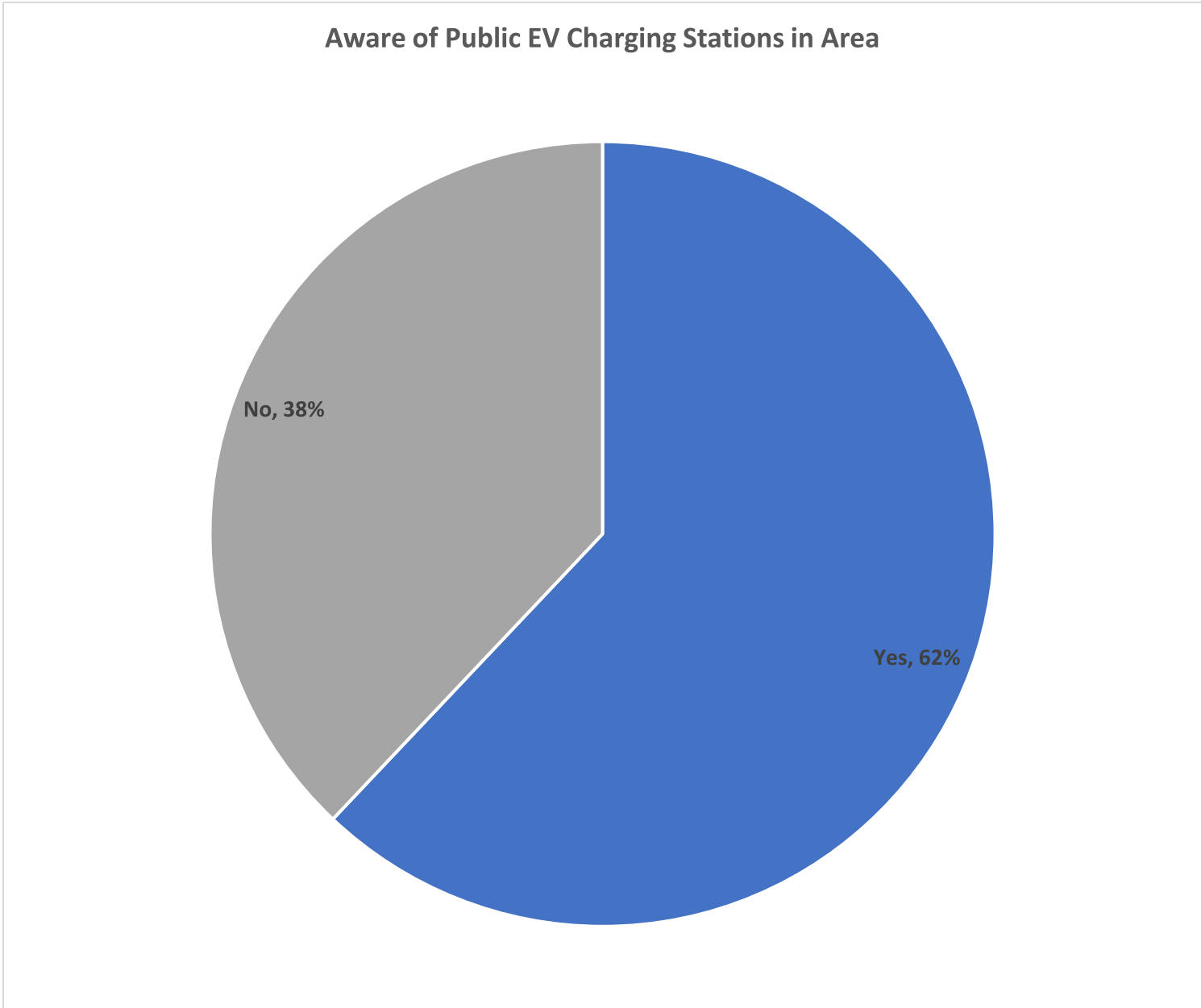
Answer	percentage(%)	Count(N)
Yes	2%	14
No	98%	659
Total	100%	673

Already own EV



Q2. Are you aware of any public EV charging stations in your area?

Answer	percentage(%)	Count(N)
Yes	62%	417
No	38%	255
Total	100%	672



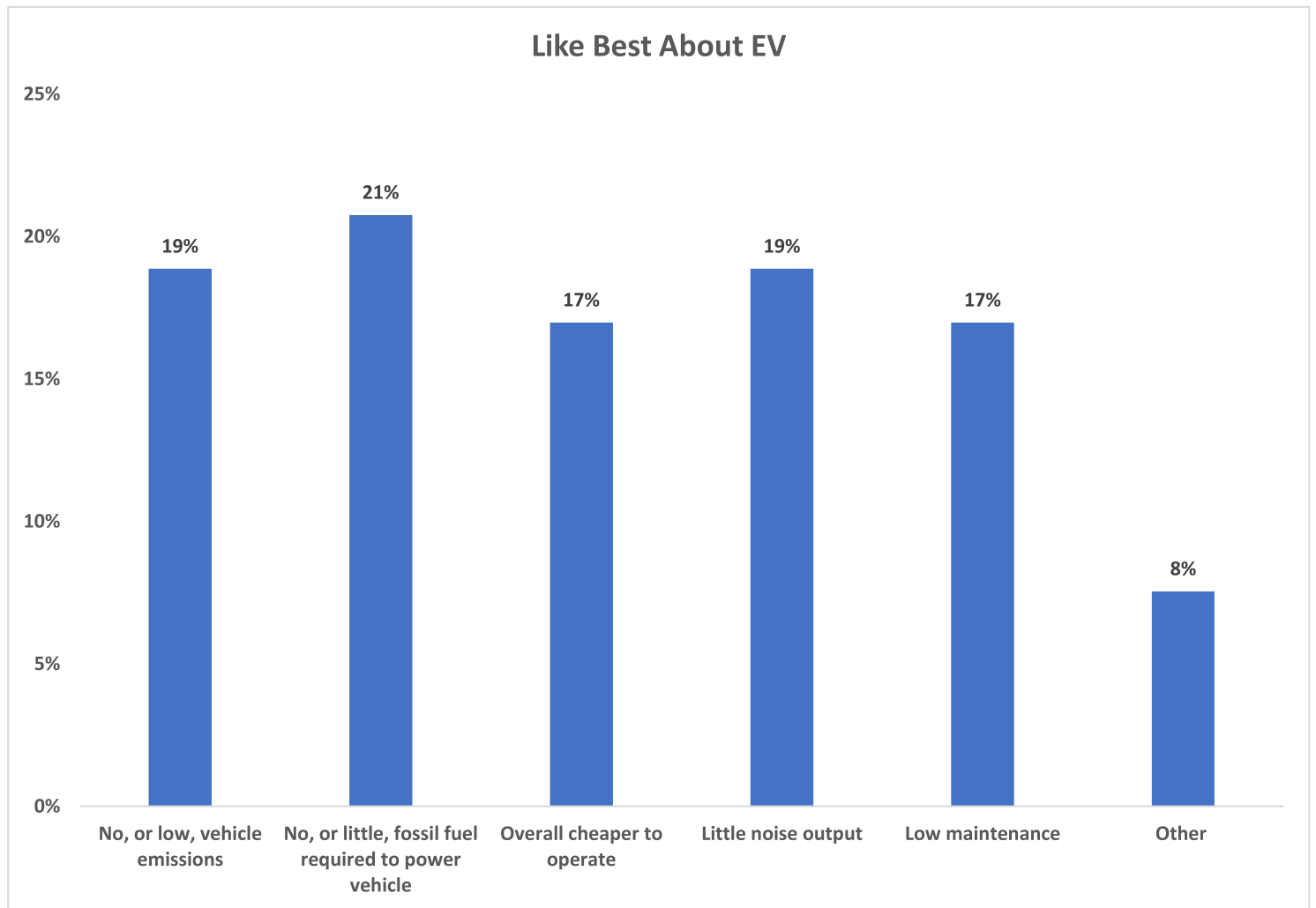
Q3 only asked of respondents who own an EV

Q3. What do you like best about your EV?(Select all that apply)

Answer	percentage(%)	Count(N)
No, or low, vehicle emissions	19%	10
No, or little, fossil fuel required to power vehicle	21%	11
Overall cheaper to operate	17%	9
Little noise output	19%	10
Low maintenance	17%	9
Other	8%	4
Total	100%	53

Other (Please Specify) Responses

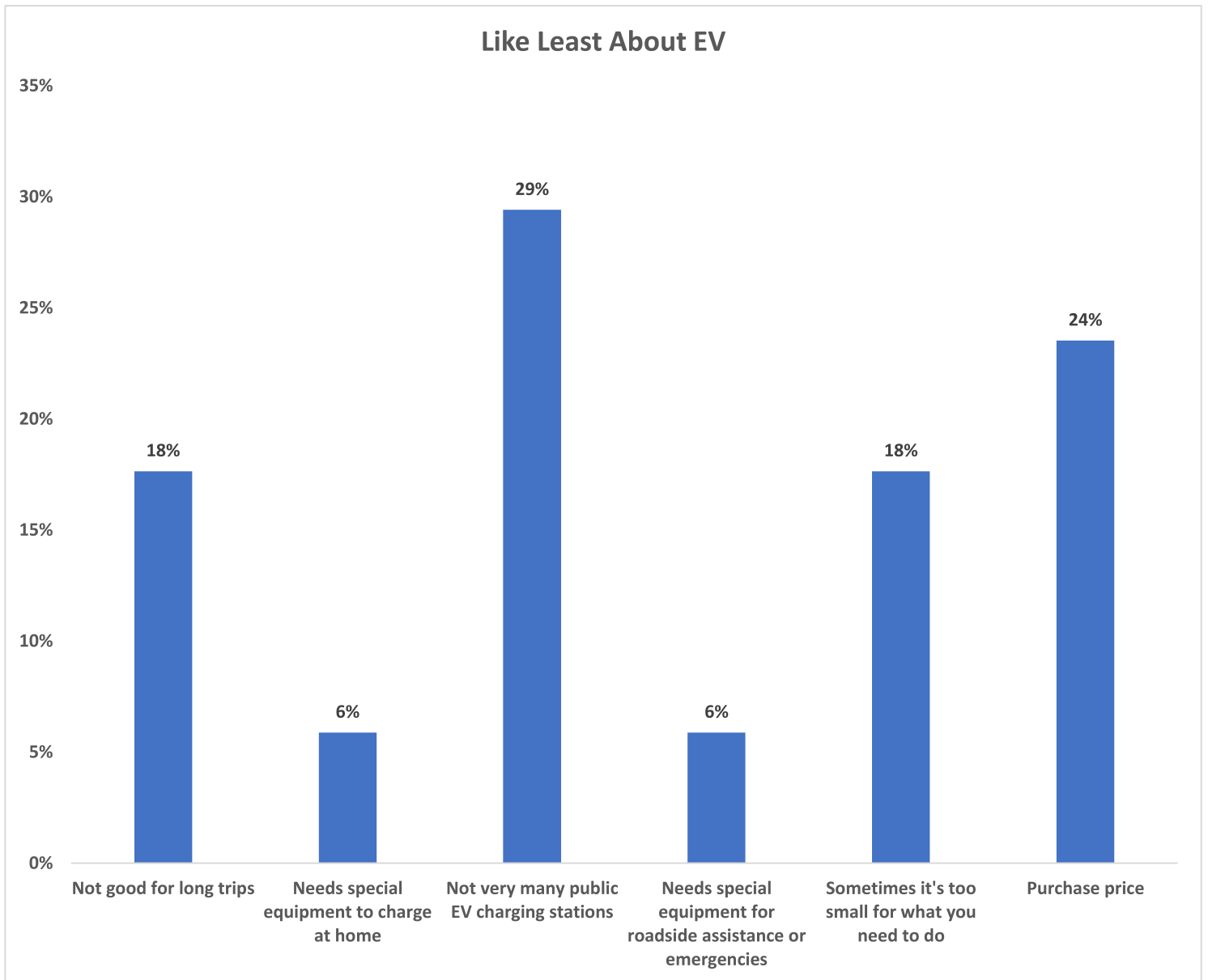
All of the above except "None of the above."
It is driving of the power from my Solar
Very smooth powerful operation
Never having to go to the gas station.



Q4 only asked of respondents who own an EV

Q4. What things, if any, do you dislike about your EV?(Select all that apply)

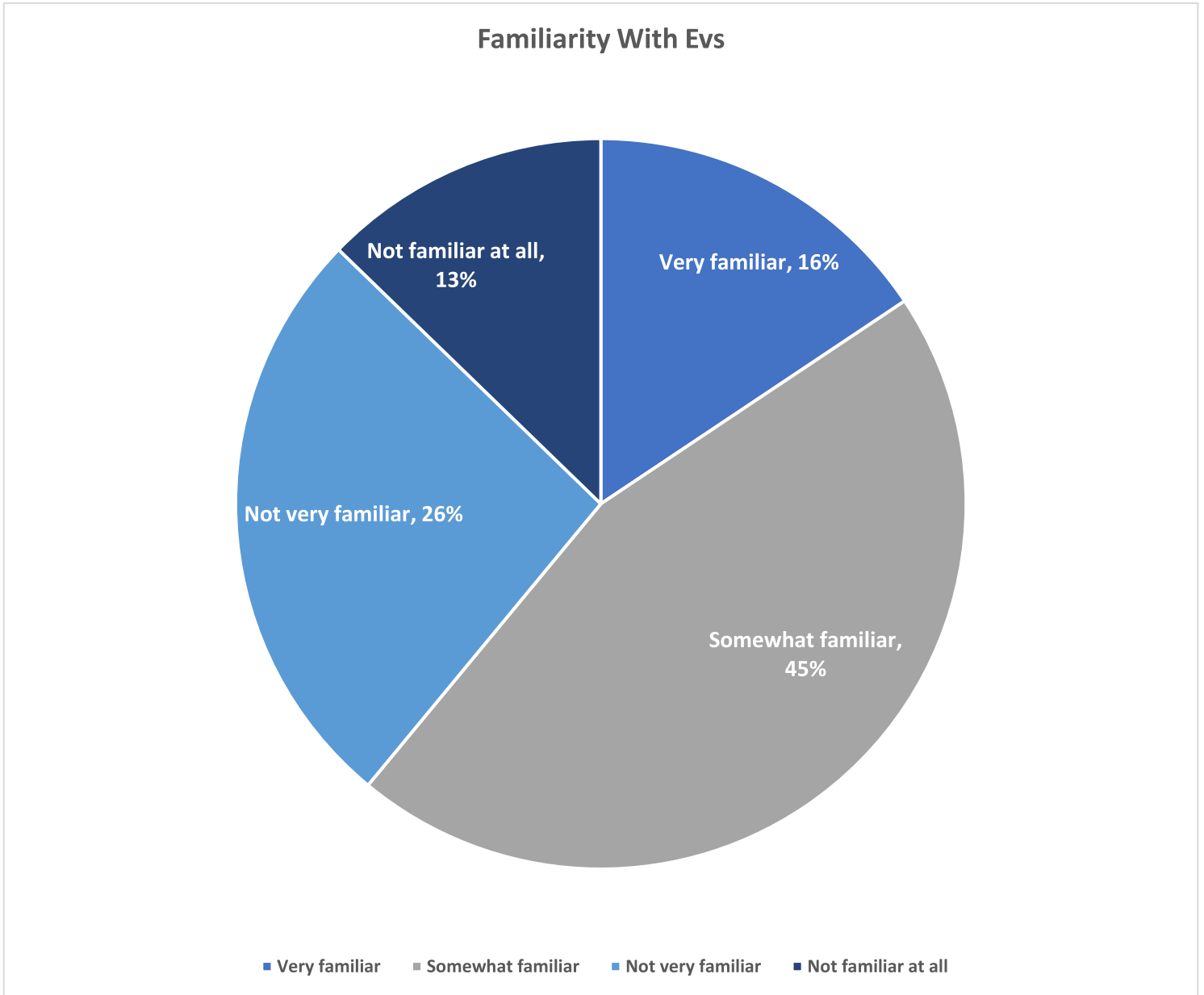
Answer	percentage(%)	Count(N)
Not good for long trips	18%	3
Needs special equipment to charge at home	6%	1
Not very many public EV charging stations	29%	5
Needs special equipment for roadside assistance or emergencies	6%	1
Sometimes it's too small for what you need to do	18%	3
Purchase price	24%	4
Other	0%	0
Total	100%	17



Q5 only asked of respondents who do not own an EV

Q5. How familiar are you with EVs? (Again, by EVs we are referring specifically to Plug-in Electric Vehicles or Plug-In Hybrid Vehicles.)

Answer	percentage(%)	Count(N)
Very familiar	16%	103
Somewhat familiar	45%	299
Not very familiar	26%	173
Not familiar at all	13%	84
Total	100%	659

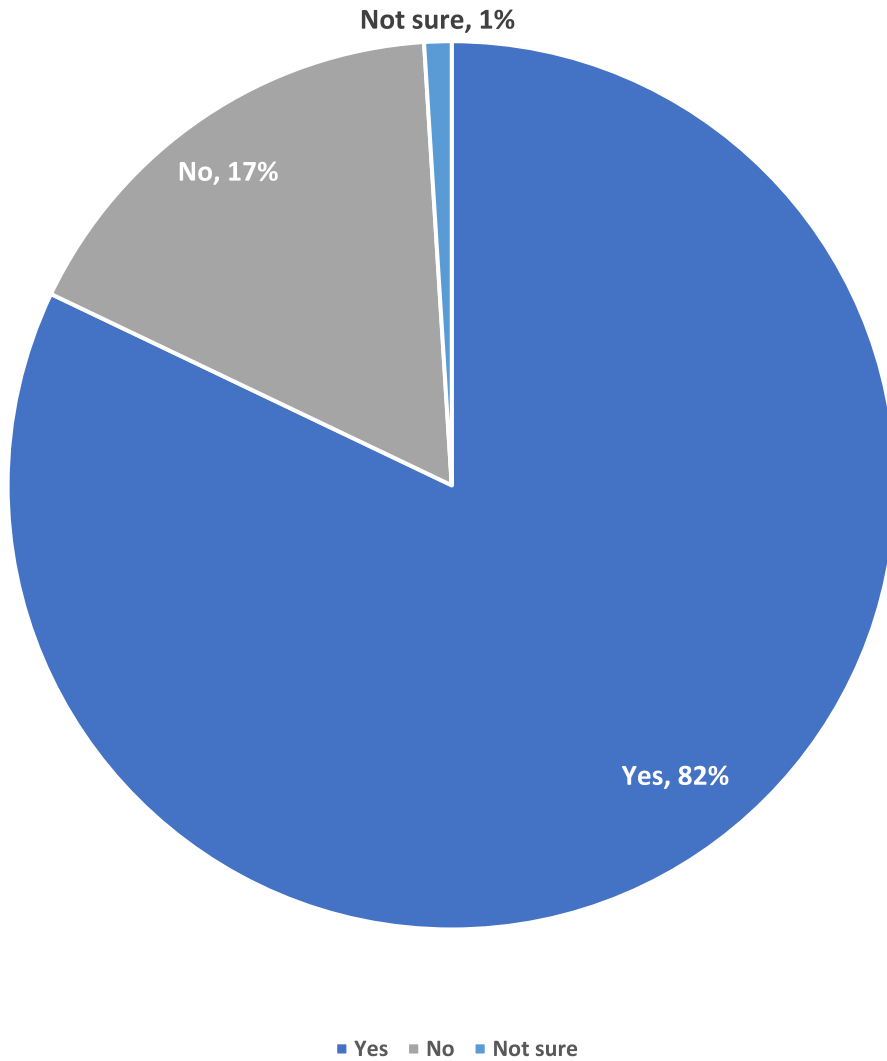


Q6 only asked of respondents who do not own an EV but are somewhat or very familiar with Evs

Q6. Have you ever been in an EV or seen an EV?

Answer	percentage(%)	Count(N)
Yes	82%	330
No	17%	68
Not sure	1%	4
Total	100%	402

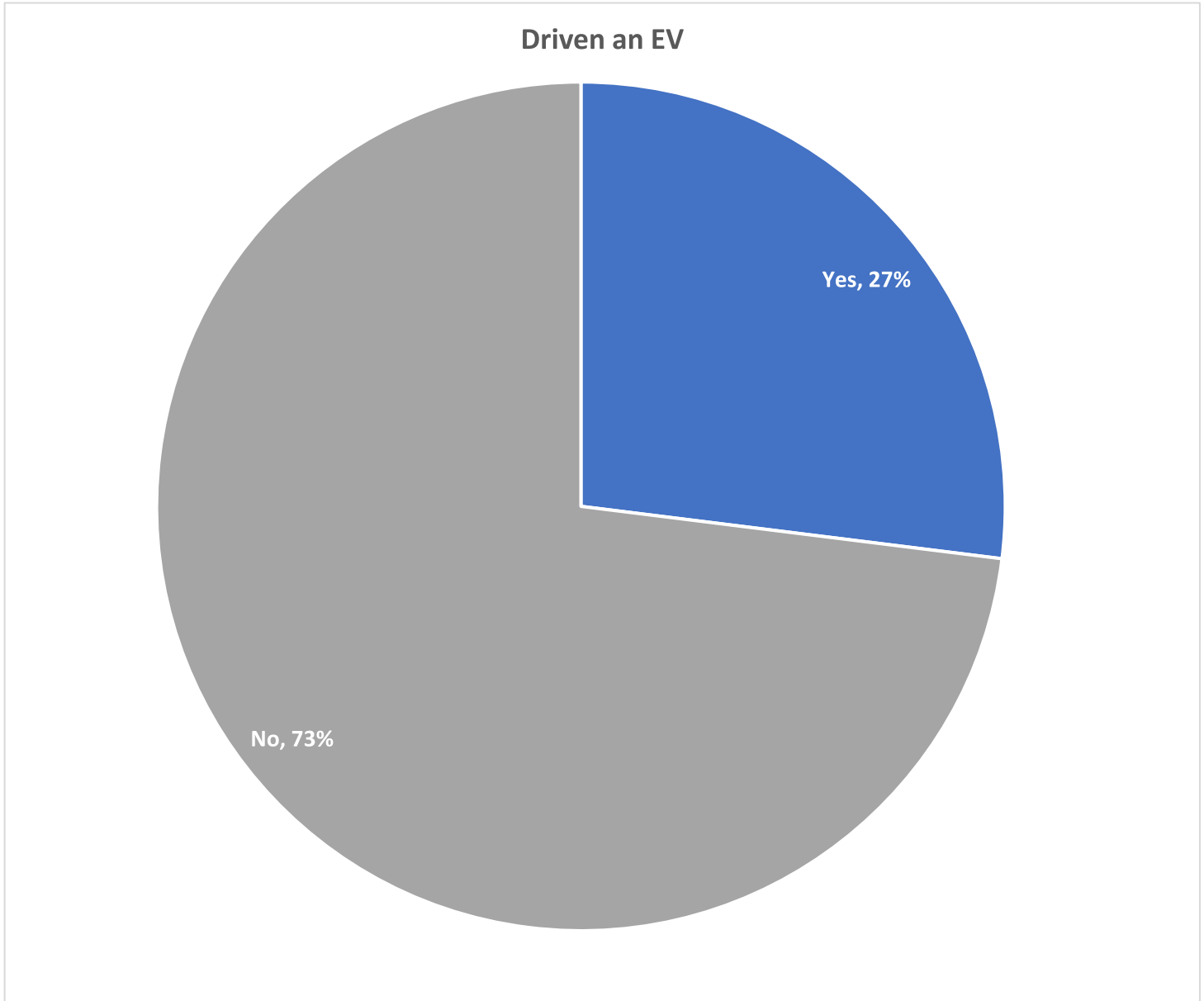
Every Been In or Seen an EV



Q7 only asked of respondents who do not own an EV but are somewhat or very familiar with Evs and have been in or seen an EV

Q7. Have you ever driven an EV?

Answer	percentage(%)	Count(N)
Yes	27%	89
No	73%	241
Total	100%	330



Q8 only asked of respondents who do not own an EV but are somewhat or very familiar with Evs and have been in or seen an EV and have driven an EV

Q8. Overall, what was your impression of the EV you drove?

It was a smooth quiet drive nice.
They are not cracked up to be what they are hyped up to be. EVs take way more energy to produce and run than the average gas powered vehicle. Please actually take the time to research how damaging EVs are to our planet. The types of materials and the amount of those materials and the excavation of those materials. It's very astounding the actual calculations on how bad EVs really are for our environment.
Positive. I believe it is a good overall direction for the automobile industry. I also believe Nuclear power will be the way forward for generating electricity.
desirable
Not good
Won't have one or buy one as for 22 miles of gravel road one way to the Hwy everyday and every day ranch life it won't work for my lifestyle! So our landfills will be fill of batteries now instead of the trash we can't already maintain. I do not see how EV can be a success for country life and ranching. In the cities they may work but not for me and my family sorry
Lots of torque
I was very impressed! If I didn't live on a gravel road in a rural area, I would buy one. Interested in the trucks.
Slow but good. (Prototype of an EV)
I freakin' LOVE driving EVs! They are so smooth and responsive, quiet and comfortable. I've driven three different EVs - all were rental cars when I was traveling in other states, and drove each one in three different states for between 3 to 6 days each. I can't wait till the day I can afford one!
Impressed.
Great
ok, would not purchase one.
It was a hybrid and it was much quieter but over all drove similarly to a gas powered vehicle.
Excellent, smooth handling, quiet operation, advanced tech
Would never own one
I really don't like them much
It was a Honda and it had a lot of electrical problems so it wasn't a pleasant drive
i liked it, it was a tesla, and performed really well, granted i know that the tesla's are way way way out of my price line, i cant even afford a much less vehicle right now. If I could i would own one as i feel they are a very important direction that is long over due. Now that the technology is improving i hope to see the costs come down to make them more affordable for the average joe like myself
NA
Quiet, fun, expensive
Overpriced and Not a realistic option for our country
It had good features, but I would not buy one. my diesel powered dodge is more quiet and more comfortable.
Not my thing. Getting to point a to b and having to stop to charge is kinda annoying.
Liked it - will be getting one in the next few years
Impressive
Not good for our eastern Oregon they do not work in cold conditions and the cost will not pay off in Eastern Oregon when we have to drive so many miles to get from a to b
I liked it

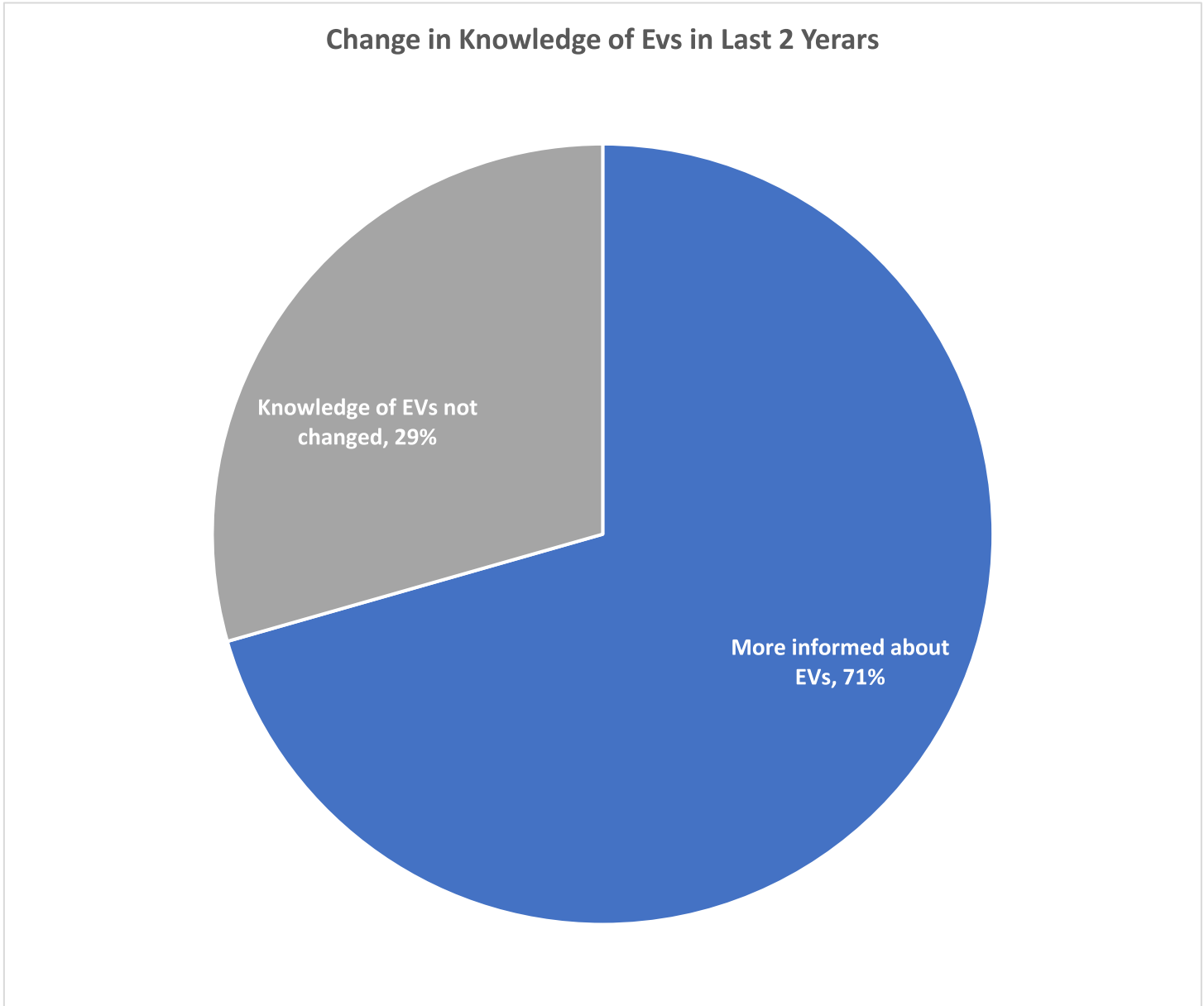
I owned one about 10 years ago. At that time it was problematic. I bought it because I could park in downtown Sacramento garages for free and they had charging spots that were always open. Parking was \$325/mo otherwise. It was all around cheaper, but when it was cold I wasn't sure how far the range would go. It was a Canadian made car, but struggled in the 40°f winter of California. I was able to get my money back via the Lemon Law and have been hesitant since. Lots of friends and family members have electric now, their stories are funny. The Tesla seems the best, but I won't spend that kind of money. I think the hybrids are still a better option. Especially with my power bill rising by 8% this year (Oregon customer with Idaho Power-- we are real people you know!)
I will not be purchasing one as they are worse on the environment then a vehicle that runs on regular fuels. I also find them to be dangerous and unreliable.
slow
Ok, loaner car, not enough time to fully test.
Modern and sleek. Liked the feel of it.
The shits
I thought it was a smooth ride with good acceleration and stopping.
An incredible ignorant idea
Was amazed by the smooth ride.
Like the quietness. Concerned about charging adaptability and availability and time added to charge on long trips.
slow, but similar to a 4 cyn.
I drove a Prius and found it quite acceptable.
Fun to drive. But not sustainable, cost too much, what happens to used batteries,range too short.
The technology needs improvements and they are not good for road trips.
Nice driving experience but severally lacks range.
not impressed
NOT impressed.
It had very limited use for our area.
Unimpressed
I was impressed initially with the EV.
They're a burden on our power grid and not cost effective
It was a hibred, ok
Don't like them or trust an EV. Why should I have to carry a generator or find a power station and waste more than regular fuel for a vehicle.
I'm not impressed at all. I would not consider owning one.
the brand was tesla and i think it is very good but, i dont want the manufacturer to control every aspect of a vehicle which i purchased and own. sounds like the old company store control again.
Great acceleration, low noise, 300 mile limit per charge
Comparable to current vehicle offerings
Fast
It was a hybrid vehicle. Handled well and I enjoyed driving it.
Not impressed.
Wasn't impressed
good performance a little small on inside
It was quiet and until it failed to start, due to bad technology, it was pleasant.
nice for the moment but doesnt have enough range and still uses fossil fuel to make the electricity. so i dont think they are everything they are said to be.
Too small and not affordable
Very fast and quiet
I really liked it

Positive.
It was okay.
only mildly impressed
Good, somewhat small in size.
Not for me.
Good car. Liked it. Responded well.
Great car!
Seem very similar to a gas auto
Car was fine
I liked it
Nice acceleration.
I for one do not like them
great, very quiet and relaxing to drive.
Can't drive very far without a long charge
nice drive
very good. Lots of power, extremely quiet. It was a Tesla, so the main issue was planning around the Tesla charging stations. EV's have a way to go on getting more miles per charge but it seems they are working on that.
It's okay, I just feel that I am not going to support EV vehicles because they pollute in another way when the battery dies and you can't dispose of it, and people end up disposing of car and battery. If renewable energy resources are to be used then they should be designed to be recycled themselves and not add to pollution or environmental issues. Like the wind turbines that cannot be completely recycled. Clean energy is not clean when it continues to contribute to financial costs either down the road in disposal or environmental damage costs.

Q9 only asked of respondents who do not own an EV but are somewhat or very familiar with Evs

Q9. Would you say you have become more informed about EVs in the last 2 years or has your knowledge of EVs not changed in the last 2 years?

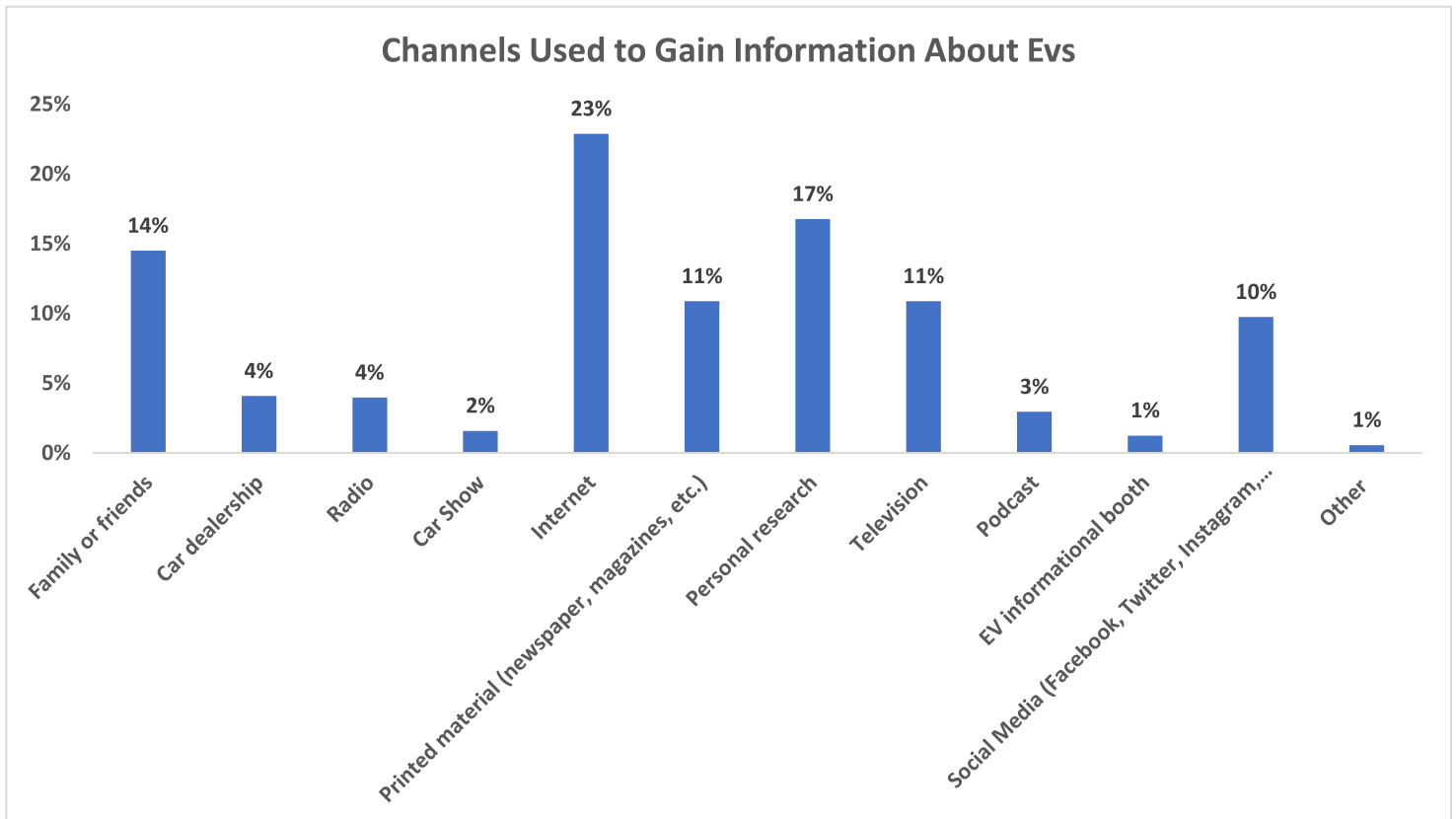
Answer	percentage(%)	Count(N)
More informed about EVs	71%	283
Knowledge of EVs not changed	29%	118
Total	100%	401



Q10 only asked of respondents who do not own an EV but are somewhat or very familiar with Evs who have become more familiar with Evs in the last 2 years

Q10. Through what channels have you gained more information about EVs in the last 2 years?(Select all that apply)

Answer	percentage(%)	Count(N)
Family or friends	14%	128
Car dealership	4%	36
Radio	4%	35
Car Show	2%	14
Internet	23%	202
Printed material (newspaper, magazines, etc.)	11%	96
Personal research	17%	148
Television	11%	96
Podcast	3%	26
EV informational booth	1%	11
Social Media (Facebook, Twitter, Instagram, etc.)	10%	86
Other	1%	5
Total	100%	883
Other (Please Specify) Responses		
Career in fire service		
Certified ev technician		
Senior relay tech with central electric coop.		
Tesla		



Q11 only asked of respondents who do not own an EV but are somewhat or very familiar with Evs

Q11. Overall, what is your opinion of EVs?

Answer	percentage(%)	Count(N)
I love them and wish I owned one	14%	56
I like them but I have questions or concerns	30%	121
I don't like them	40%	158
I don't know enough about them to form an opinion	6%	22
Other	11%	43
Total	100%	400

Other (Please Specify) Responses

Do not like them, I think they arnt set up to be used efficiently in a rural area.
Terrible idea
They're being pushed too aggressively at mass; they will task the infrastructure to harshly. They need to be brought on the grid more subtly. Supply and demand determines pricing. What will Idaho Power's rates be when more demand is there and not enough supply?
I like them, just don't need one
Dont care for ev at all
I do not like the agenda they promote
<p>First living in a rural Area we don't have those charging stations out here we can't plug them into our homes because it puts too much pressure on the your power grids. Next not everybody can afford a car that kind of car so you're gonna be looking at a lot of people who can't afford him who's gonna have to go out and buy them and they're living paycheck to paycheck without a car note right now that they're going to end up either losing their job or they're going to end up losing their car. Next the people that are selling these cars are it's outrageous OK when you go on long trips you can't just stop and fill up real quick and then takeoff and keep going where you have to sit there longer at a charging station and do you have to wait in line to get to the charging station so you're looking at a longer time to go on a trip what about. And then you looking at the materials to make these cars you have to use some kind of chemical from the oils and stuff that they're pulling out of the oil industry to mix to make the plastic for these cars that's something else they don't understand so you're looking at not being able to not being able to afford the car to start off with and not being able to make the car because we're not gonna have the chemicals that we need to mix in with the plastic to make the hard plastic. You're looking at millions and millions and millions if not billions of vehicles that nobody can use so what's going to happen to those they're going to cause environmental hazards and they're going to be left on the sides of the roads they're going to be just left in peoples yards it's going to cause a huge chemical in balance into the earth because of all the chemicals in in the vehicle and you can pressure them and everything else but if they're still going to be there and on top of that if you were going to build these electric cars with the materials from old cars then you're looking at a heavier vehicle that's going to take more of the power away from the battery because it's going to be heavier. And the batteries the batteries only last a few years so you're looking at thousands of dollars to replace a battery or however many batteries is in it to use your car and people can't afford that people live paycheck to paycheck these days because we can't afford a lot of stuff and we can't afford car notes and they can't afford I mean a lot of them can't even afford groceries can you imagine the people that are on welfare that they don't have a job they can't afford to buy these these TVs because what's gonna happen is they gonna there's gonna be a lot of crime of people stealing batteries out of these cars and everything else because nobody's gonna be able to afford it you're looking at more crime.</p>

PREVIOUS COMMENT CONTINUED... I think it was the worst mistake our president has done to our country and him taken away the oil industry is going to hurt all of these windmills and stuff like that that you're putting up what do you think it takes to keep them turning is hydraulic fluid where do you get that from the oil fills it's this is not anything that you know. I think this was the biggest mistake that they've ever done I think it should be an option for people because the charging stations charge you two so you're not only being charged like you were for gas but you're being charged double because it takes it's going to for what it takes for one tank of gas you're looking at charging twice so you're spending more money on a car that you can't afford and then you're paying for the electric to pay for that car not to mention your power at your home it's going to go up outrageously because you always have to keep your car plugged in and in rural areas you're looking at people that drive all the time for farms and stuff like that and they can't afford to be out cut in the field and then their tractor run or they have to stop in the middle of a field to go charge their tractor up I think this was the worst thing that they've ever done if they wanna make people buy cars let them buy smaller cars like they do overseas but by an EVS is the worst thing they could've ever done it's just it's all politics and the little guys are the ones that are suffering for it.

I find it counter productive when most are powered by fossil fuels. It's a step in the right direction but the worlds power isn't sustainable. Once we make the switch into complete and total power sustainability then EV's would be amazing. As of right now tho they are powered by mostly fossil fuels. Hydro and solar power is making up more of the energy grid but they aren't 100%. I can go on and on about power but you guys are the experts.

Would love to have one, but unfortunately limited income makes it hard to even think about buying one. Could never afford one

Just won't work for our lifestyle. Over all not green!

Our next vehicle will be an EV

Not dependable or practical

Not a logical option as the electrical grid is already stressed

They are not green and are powered by fossil fuels like coal or diesel. Will be more of a drain on the electrical grid. Add 5G to that and we're all screwed!!

too expensive

Think they are good worry about charging on the grid in large numbers

you're charged more to register govt wants its money you're not paying gas tax. battery costs arm and a leg to replace so the money you saved you lost more than what you saved on gas

FJB

the infrastructure in the usa is not set up for it yet. if u drive around town and have a charging station at home, maybe, to replace a battery cost as much as the veh, some are catching on fire because of the batt. over heating etc.....no thank un really don't care

I think the current infrastructure will not support the amount of EVs that the current political administration is pushing for. I also think the current methodology for EV battery production does more harm than good to the environment.

The source of energy the factories require for producing the cars

Feel the government is pushing them on ppl. And too expensive

They are joke and more dangerous to the environment than gas

Not realistic for my location and driving habits

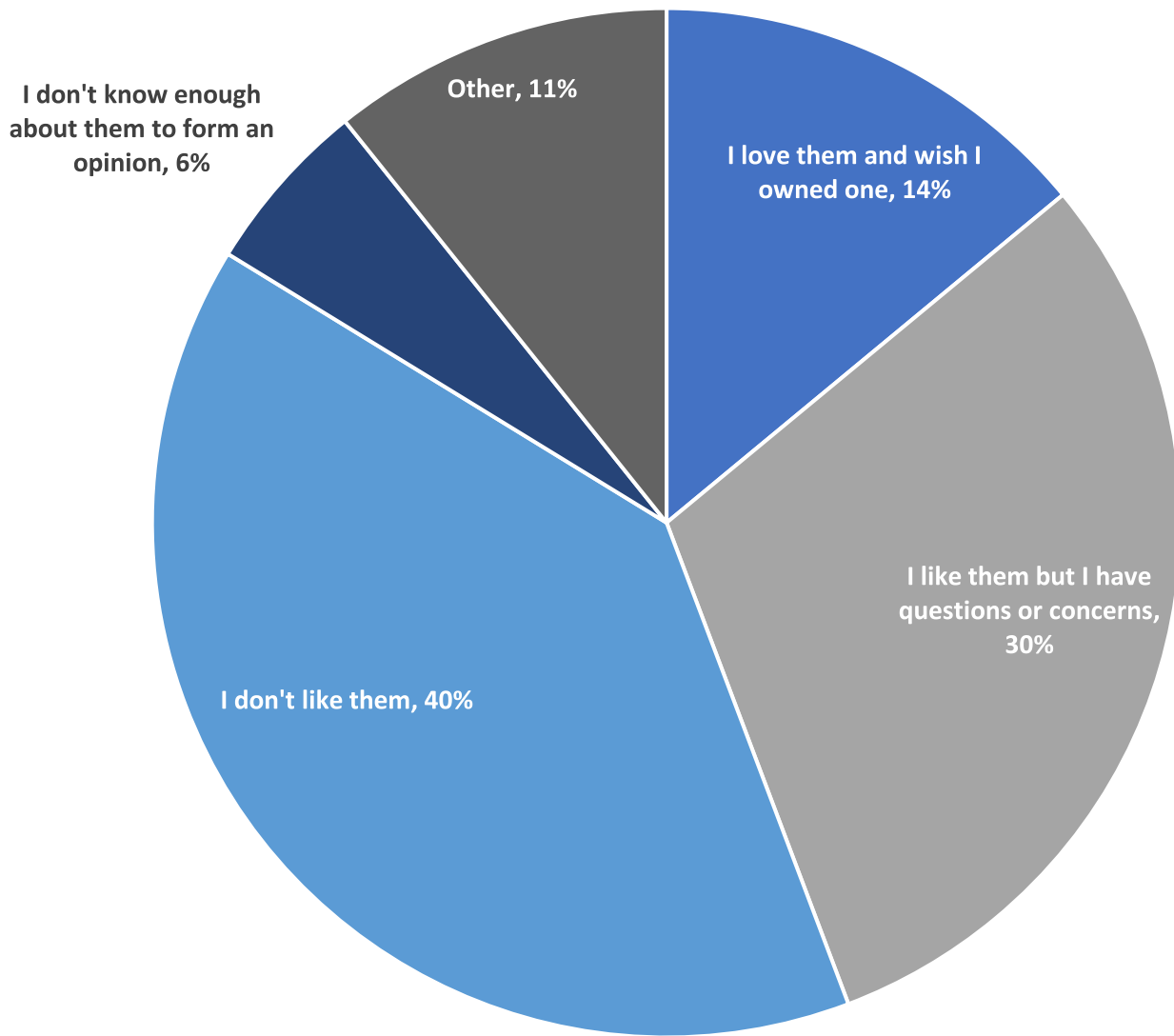
Battery technology is not ready yet. Life is short, charge time is slow, range is limited, replacement is cost prohibitive.

I am indifferent and have many concerns.

don't like them and will never own one

I don't believe that they are the perfect fix! Don't like the way they ramming them down everyone's throats through hi fuel costs! We still don't know what the real cost is longterm!
I like them. I'm worried about the cost of our future mining lithium and the depending on the power grid when it's already high use. Also worried about how often they are changed and the cost to replace a battery.
I like them, but am not ready for ownership.ady
Conserns on traveling distances
N.W. is not suitable for EV to much distance to charging station
Can't be driven long distance without recharging
They will never be as efficient as petroleum a
It's pretty sad when your state officials decide they're gonna go with electric vehicles annoying in some areas they will not work especially in eastern Oregon or Idaho mind you guys wake up
Like them but not sure I want to spend the money top replace my paid-for gas model.
A pipe dream of climate alarmists Will never replace internal combustion engines in the vast rural areas of Americasarmists anyone whom buys one is a damn idiot
I think it is impracticable and definitely not "green" at all. I can't imagine getting stuck in traffic and running out of power. You can't carry an extra emergency battery. They are as illogical as wind turbines that have zero pay back and are unrecycleable. They have zero resale value because the batteries are ridiculously expensive.
These vehicles are horrible for our planet by means of production, waste and cost. The wasteland left from lithium mines, and the short life of the batteries with no means of recycling are only a few examples of how harmful electric cars are to the environment.
If all cars were powered by electric the grid would go down. They don't have the power to tow heavy loads. Stop pushing windmills and solar energy. Build a new efficient coal plant—and NEVER breach the dams.
They are a joke pushed upon the public by a very very incompetent administration. Not a solution for rural areas. This is something that will take decades to transition, not 1 year.

Overall Opinion of Evs



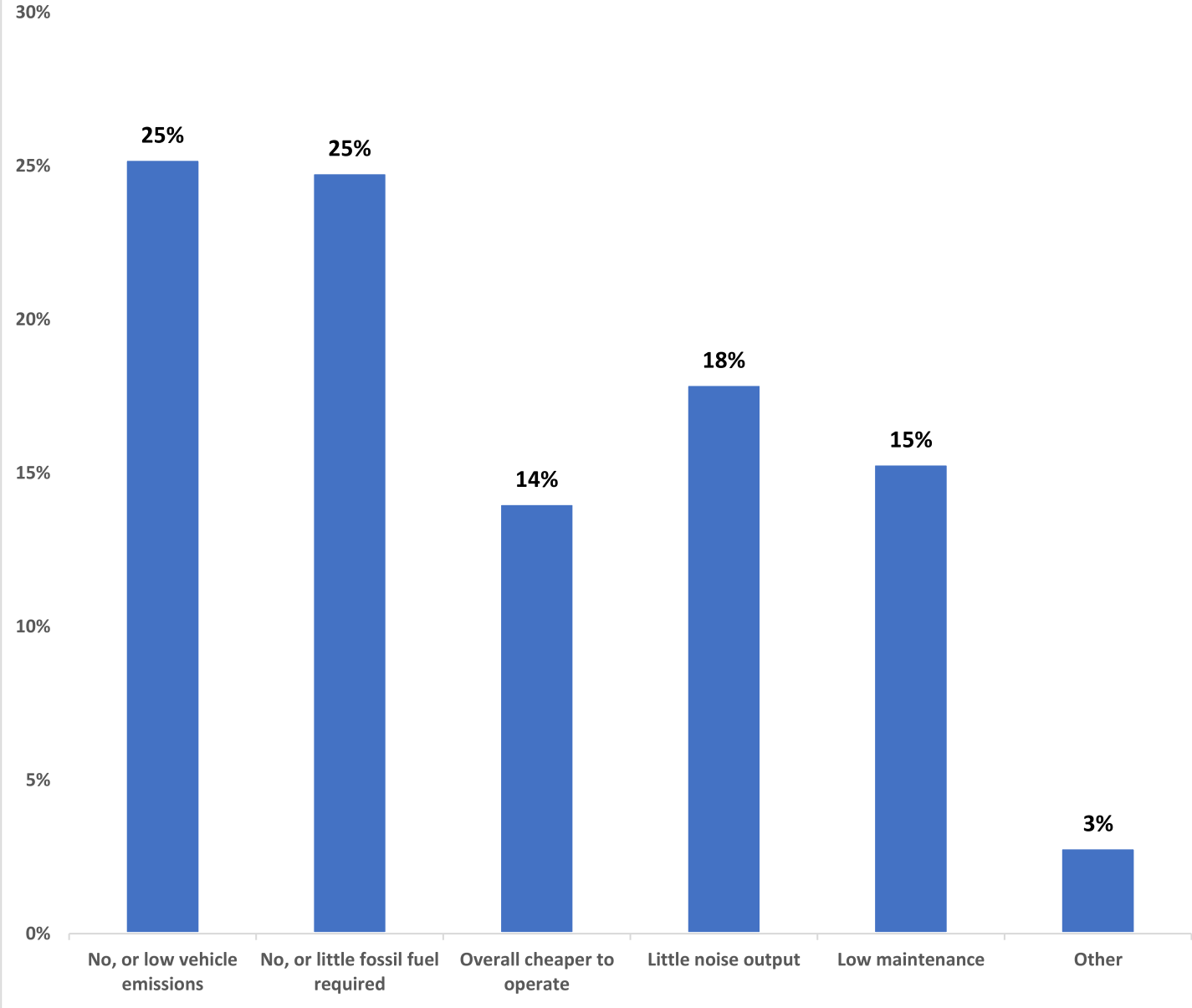
Q12 only asked of respondents who do not own an EV but are somewhat or very familiar with Evs and say they love them, wish they owned one or like them but have questions or concerns

Q12 Which of the following do you like best about EVs? (Select all that apply)

Answer	percentage(%)	Count(N)
No, or low vehicle emissions	25%	117
No, or little fossil fuel required	25%	115
Overall cheaper to operate	14%	65
Little noise output	18%	83
Low maintenance	15%	71
Other	3%	13
Total	100%	464

Other (Please Specify) Responses
it feels like innovation and progress
Can eliminate the fossil fuel industries! I would love that!!
Great design
very powerful
I don't know for sure they would be cheaper to operate, the electricity must come from somewhere
the power output
Concept is good but not cost efficient yet
solar panels on my rooftop
Fire hazard battery, mining for battery is not green
Electronics, bells & whistles
On board emergency power
torque
impact on climate change

Like Best About Evs
(Non EV Owners Familiar with EVs, like EVs)



Q13 only asked of respondents who do not own an EV but are somewhat or very familiar with Evs and say they love them, wish they owned one or like them but have questions or concerns

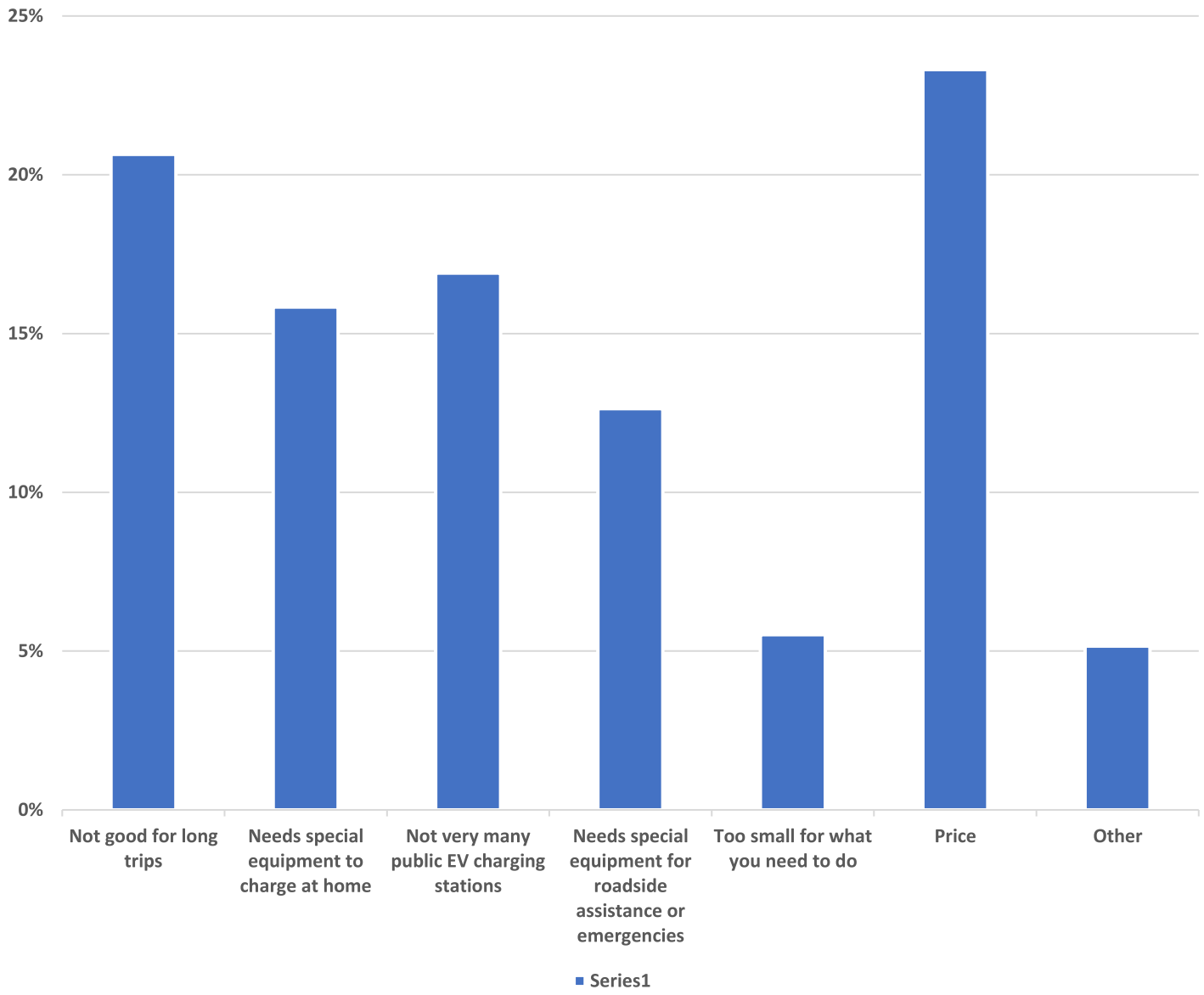
Q13. Which, if any, of the following do you like least about EVs?(Select all that apply)

Answer	percentage(%)	Count(N)
Not good for long trips	21%	116
Needs special equipment to charge at home	16%	89
Not very many public EV charging stations	17%	95
Needs special equipment for roadside assistance or emergencies	13%	71
Too small for what you need to do	6%	31
Price	23%	131
Other	5%	29
Total	100%	562

Other (Please Specify) Responses

Battery disposal and energy etc it takes to build one is not efficient and uses more fuel to build than it takes to to run and maintain a conventional diesel or gasoline vehicle
Towing capacity, concerned about durability on poorly maintained gravel roads
limited range
Some EVs have issues with battery life in cold weather.
Our mountains in winter have long traffic accidents and hours be stranded does not work for EV's!!!
The electricity will have to be paid for, I don't know if they will be cheaper to operate
Takes a lot of fossil fuels to make
Still needs fossil fuels to manufacture
Until electric power is created more environmentally conscious it's hard to get behind it. Also, the batteries are problematic as well.
Insurance is HIGHER
parts and tires very expensive
Battery disposal issues. Lack of recycle places.
Not as environmentally friendly as promoted
Adopting EV's will make us even more dependent on China. EV's have a higher overall carbon footprint than fossil fuel vehicles. Impact of massive increases in mining needed for EV batteries has not been addressed. Grid is overstressed now and not even close to ready for conversion to EV's.
The actual impact/emissions used to make them
Mining needed, increased energy use on failing power grids
The number of Plug In Hybrids available is still practically non-existent
Take a while to charge on a long trip
Life expectancy
Replacement battery cost
Poor selection in my area.
resources required to build. High cost to replace batteries. Poor cold temperature performance. Untested long term dependability.
4wd / towing
Need to scale up production to achieve low costs for cars and longer-range/quick-charge batteries

Like Least About Evs (Non EV Owners Familiar with EVs, like EVs)



Q14 only asked of respondents who do not own an EV but are somewhat or very familiar with Evs and say they like them but have questions or concerns

Q14. You mentioned that you have some questions or concerns about EVs. What are those questions or concerns?

It was the way the question was presented. I don't have questions or concerns, I just believe that we are still in the development curve and so the infrastructure is not built out yet to fully support the widespread adoption of EV's. This is a direction we need to continue to move as a society and the biggest issue is how power is currently generated to support the demand. Hydro is great, let's keep using it. Coal is fine with me, but I'm the most comfortable with Nuclear Energy and believe we should be moving towards the adoption of next generation Nuclear Plants.
True long term costs, they tend to not be accurately stated.
How much the additional cost to charge would be at home. Cost to set up at home. How far it can go on one charge
Energy plan to have ev charging in residences and public
See above answer
How long do batteries go and what happens to them when they are done.
My first concern would be about battery life, and how it relates to vehicle range, and continuous use situations. It's the biggest weakness of battery powered vehicles. My second concern is cost. Not only the expense of the vehicle, but of replacement parts such as the battery.
No
Price of batteries
I live in a rural area with only one nearby charging station. Question about how long it takes to charge. I was told it takes 20 minutes+, which may cause travel delays.
Not sure there are automobile mechanics in my area that can diagnose/repair any problems that may arise. Not sure how long warranties last and if all potential problems are included. Not sure EVs are equipped for optimal performance in winter snow and/or icy roads
Range and availability of charging stations when off the beaten path.
Not enough information
My concern is the ability for EV's to travel longer distances. I am also concerned about the number of places who are able to service or fix any problems with these vehicles.
My concern is distance from a charge and when new ones come out will they be able to go farther than 350 ?upgrades when new cars are made, will parts be interchangeable? I could go on but I am tired of typing lol thanks for listening more miles GET R DONE.
The power grid is not set up to handle ev. Batteries come out of China. Cost of charge ev.
Not enough power for charging as the number of EVs increases.
Longevity of batteries and cost to replace them.
There needs to be a infrastructure in place before the Government make mandates on the public! They have the cart before the horse!
The batteries catching on fire, while using the automobile.
Cost of electricity will rise - law of supply and demand. How would the additional power be supplied? Coal plants? Nuclear power? Wind and solar are expensive and not always available when needed. EV vehicles are expensive, I buy used vehicles, very few used EVs on the market. Claims that maintenance would be cheaper isn't proven, EVs haven't been available that long. Also my husband does a lot of our car repairs, don't know if that is possible on an EV. Long charging times are a concern for days that require a lot of driving. I live out in the country- I try to be efficient and do lots of errands in one day in town rather than travel in several days. Also a concern for long trips, I don't want to add several hours to a trip for charging. I rarely stay in hotels when I travel. I drive straight through to the destination which I couldn't do with current EV range.
Range

Longevity and lifetime of a car.
Are they really eco friendly
Availability of charging stations for trips across long stretches of unpopulated highway, ability to tow.
the recycle of EVs Vehicles, the cost of the Is producing the power on the environment, the live cycle of the battery's
Whether the mileage and charging issues are compatible with my location
Just wish charging did not take so long. I would be eager to buy one if charging time got considerably shorter
How will the power companies deal with power demand for residential charging? And in eastern Oregon and western Idaho your trips may be limited on mileage
It is very premature to convert to EV's right now. Expensive to purchase, using too much electricity to charge which is still relying on fossil fuels and they do not have a plan for recycling the batteries other than tossing it into the landfill. I like the concept but we are not there yet. DO NOT MAKE THIS SWITCH YET.
Expensive,limited range,minimal availability of charging locations, entire premise of ev using less fossil fuel is faulty - still requires reliable electricity from somewhere to charge them - cannot rely on wind or solar to do this - also massive disposal issue when ev is worn out. Current technology is not advanced enough, maybe in the future it will be.
What powers the electricity that charges the batteries. Okay here with hydro electric but states with coal or other fossil fuel defeat the purpose. Too expensive at this point and time for consumers. Not enough fast charging stations. Takes a long time to travel cross country or past your estimated mileage which can fluctuate depending on load or speed. Hybrid is a much better buy. Maybe for a municipality, hydrogen plug ins are better.
Sustainability of the raw minerals required to make the batteries is a concern. We also need next generation power plants (fusion) or we need to increase the number of current nuclear power plants. The government should REQUIRE that ALL new roofs are solar power arrays. EVs will strain our power grids.
Well, I also mentioned that I'm not satisfied with the rising costs of electricity as well as the methods you use to provide it. Also the batteries in EVs seem to be problematic as far as the environment too. Because of the lithium mine near me, I've learned that that is also a damaging and expensive undertaking as well. And it needs lots of water. On the surface, EVs sound great, but are they if you break it down? I really don't know.
Enough charging stations for longer trips
the special equipment you need to charge at home or on the road what if is a long trip not plaed/ not enough charging stations
battery life
Battery capacity is never 100% and always deteriorating after initial drive. Cost of replacement batteries.
How expensive it is to have a home charging station installed. Also, the miles you can travel on one charges makes roadtrips
range tires price battery replacement time to recharge
Trip endurance, impact to power grid, not the environment saver that is promoted
We see videos of the batteries catching on fire. Also, the lithium mined for the batteries destroys whole ecosystems, how can we find a better long-term solution?
Adopting EV's will make us even more dependent on China. EV's have a higher overall carbon footprint than fossil fuel vehicles. Impact of massive increases in mining needed for EV batteries has not been addressed. Grid is overstressed now and not even close to ready for conversion to EV's.
I live in a rural remote area. No charging stations. Range on the more reasonably priced EVs is not enough to get me through one Wal-Mart trip and back home. For that matter, not even the expensive EVs would fill the bill. If I lived in a city, I'd love to have one; but, alas, I don't.
Will we rely on fossil fuels to have enough electricity to charge EVs in the future? Will the cost of electricity go up because of EVs?
The power grid is not equipped to handle large # of EV's
Battery life and economic impact of disposal and production of batteries.

Availability of charging station. Outside of metro areas mechanics are not familiar familiar with the car if something goes wrong.
initial cost of ev is way to high to even consider right now. If I get a loan the vehicle will not be paid off when the battery needs serviced or replaced
Just with long trips and accessibility to charging stations
Fire hazards and lack of training for emergency responders (for one, there's no standard consistency for where batteries are located, and the fires are very difficult to extinguish and can reignite); lithium mining scheduled for Oregon (McDermitt Lithium Project) and Nevada (Thacker Pass) will destroy thousands of acres of BLM land including sacred indigenous sites, require billions of gallons of water for extraction, and result in toxic mine tailings; lithium batteries for vehicles are extremely expensive to replace; lack of sound, although wonderful for most, can pose a risk to elderly, blind, bike riders, children, etc.; and high-voltage batteries pose an electrocution risk. So, in theory, great, but not so green and not so safe.
They need electricity to charge. Where will it all come from? China has control of battery production. Batteries are expensive to replace. What happens to all these dead batteries? EV use should be market based and allowed to develop naturally. Meanwhile let's drill our own oil, and find alternatives to enriching our global competitors.
miles per charge, charging time, charging stations in my area
what do we do with the battery pack after ten years
The EV technology is something we will likely adopt in the future as we advance. However, this should happen as supply meets demand versus the Government artificially creating demand through incentives and programs that us as tax payers ultimately pay for. The infrastructure needs to catch-up to allow the intended numbers of new vehicles to charge and not overwhelm the electrical grid. Gas, diesel and CNG should NOT be demonized and still allow us to move great quantities of goods. Also, how is all the needed electricity going to be produced without fossil fuels, coal or nuclear energy?
How is our existing electricity supply going to handle the demand? !!!
If I bought an EV do to the high prices I would buy one 5 years old or older. My biggest concern is the battery life and the cost of a new battery. Also the cost of maintaining the other components of it as it ages.
The price is outrages. And I seriously doubt that the overall emissions are lower then any other vehicle. Batteries use a lot of resources and emissions to create.
I'm concerned with the lack of charging stations for longer trips.
What good is an electric vehicle if they are charged by fossil fuel. We live in the rural area's. We need big vehicles for big jobs. Lots of HP. EV's don't even begin to fill this need. Also, I keep my vehicles for 15 to 20 years. Some trucks are 30 years old. Batteries in EV's aren't good enough yet. Price, Longevity, HP, Load capacity, Price. Did I mention price. They need to have answers before throwing a sedan at you and saying, "problem solved" Just get a EV. Good technology. They haven't covered the problems yet. Windmills aren't going to do it. Bring back nuclear power plants.
Where will all the power come from to charge them, we are already in short supply? I live in a rural area, will it get me the distance of where I need to go? Will replacing the batteries break me?
Concerned about not enough infrastructure (charging stations) in rural Oregon.
I travel cross country a lot. The EVs have too short of range, and the time to stop and charge is too long. I know people that have had to wait in line to get to a charging station.
Lithium batteries are extremely flammable expensive and mining for minerals needed for manufacturing. Drain on power
Cost, to purchase, maintain
Disposal of batteries
I don't think our power grid can support them now and they don't have enough range yet
poor range, pickups can only tow approx 100 miles.
Life Expectancy and cost of battery replacement
I would need to be able to charge at home and would want more charging stations available across the country.

long term value
How long does it take to charge the whole car? Like filling up the tank. Wondering how long charge lasts because if I'm doing a 6-7 hour trip I don't want to spend a lot of time waiting for re-charge.
life and replacement of battery. disposal of battery. concerned where electricity for charging comes from. Hydro, wind, solar, coal nuclear? if we all start getting ev is it going to drive cost of producing electricity up? It is nice to think green but what environmental damage (Pollution) have we done to produce battery and electricity to charge battery
In light trucks, how much does cargo or towing effect the length of charge.
Long term reliability (years 10 through 20)
They seem to be difficult to fix if the batteries go bad, and very expensive to fix.
Infrastructure to support massive amount of electricity required. Also battery construction and disposal.
Is it costly to charge? Is it costly to replace batteries?
See above.
battery safety and battery life and replacement costs
How much fossil fuels is used?
Battery range, charging options on the road.
Distance on a charge is limited for those of us who live in rural areas. Also not enough charging stations and no cohesive plan to make charging stations as convenient, reliable and safe as gas stations .
What, if any, would the financial cost of the vehicles/maintaining be towards Idaho Power customers?
battery life and cost of replacement batteries
Longevity of batter and cost to replace battery. And, do EV's hold their value after 5-6 years.
Are they really that much better for the environment? Is the technology where it needs to be to make this viable?
Battery life, mining practices to get lithium for batteries
How will the battery maintain during extreme heat/cold; driving in adverse weather conditions is a big question. Currently the initial cost is very high, battery replacement even more so due to COVID shutdown of manufacturing/shipping/fuel costs. When the world catches up the price may be more realistic.
Cost to replace parts, cost to charge
Just the restrictions of charging
How do they do on long trips and charging atations
Ev's at this point are not capable of replacing gas vehicles for multiple reasons. There is not enough raw materials in the world to do it, emissions are still being created to build and to destroy, still taking resources out of the earth to create, there is no real answer for what to do with the battery when it fails. Technology has not gotten to a point that makes it viable to me
Distances, operating in cold climates. Battery replacement costs, environmental impact of lithium mining and the overall stress on our already overburdened electrical grid.
The low amount of and space between charging stations
Battery longevity and cost of replacement. Everything is attractive about them until it needs a battery. Am I going to be paying new car prices every 8x,xxx miles or 1x,xxx miles because my battery failed? That is very unattractive.
Miles per charge? We are having problems with having power now. What are we going to do when you shutdown power plants and take out dams. Wind mills and solar are not the answers. When are we going to build a new nuclear power plant?
battery material mining, battery manufacturing and recycling, source of electricity to power batteries
Access and cost of public EV charging stations currently is too sparse and when I did use a public station vs the Tesla station at one time the public charging station was quite expensive and provided a very slow charge.

I do not think they save on fossil fuel as the manufacture of them uses so many resources. They would need to be driven a long time before any savings would be apparent. I am concerned about the batteries and how they could be recycled, if at all.

Q15 only asked of respondents who do not own an EV but are somewhat or very familiar with Evs and say they don't like them

Q15. Which, if any, of the following are reasons why you don't like EVs?(Select all that apply)

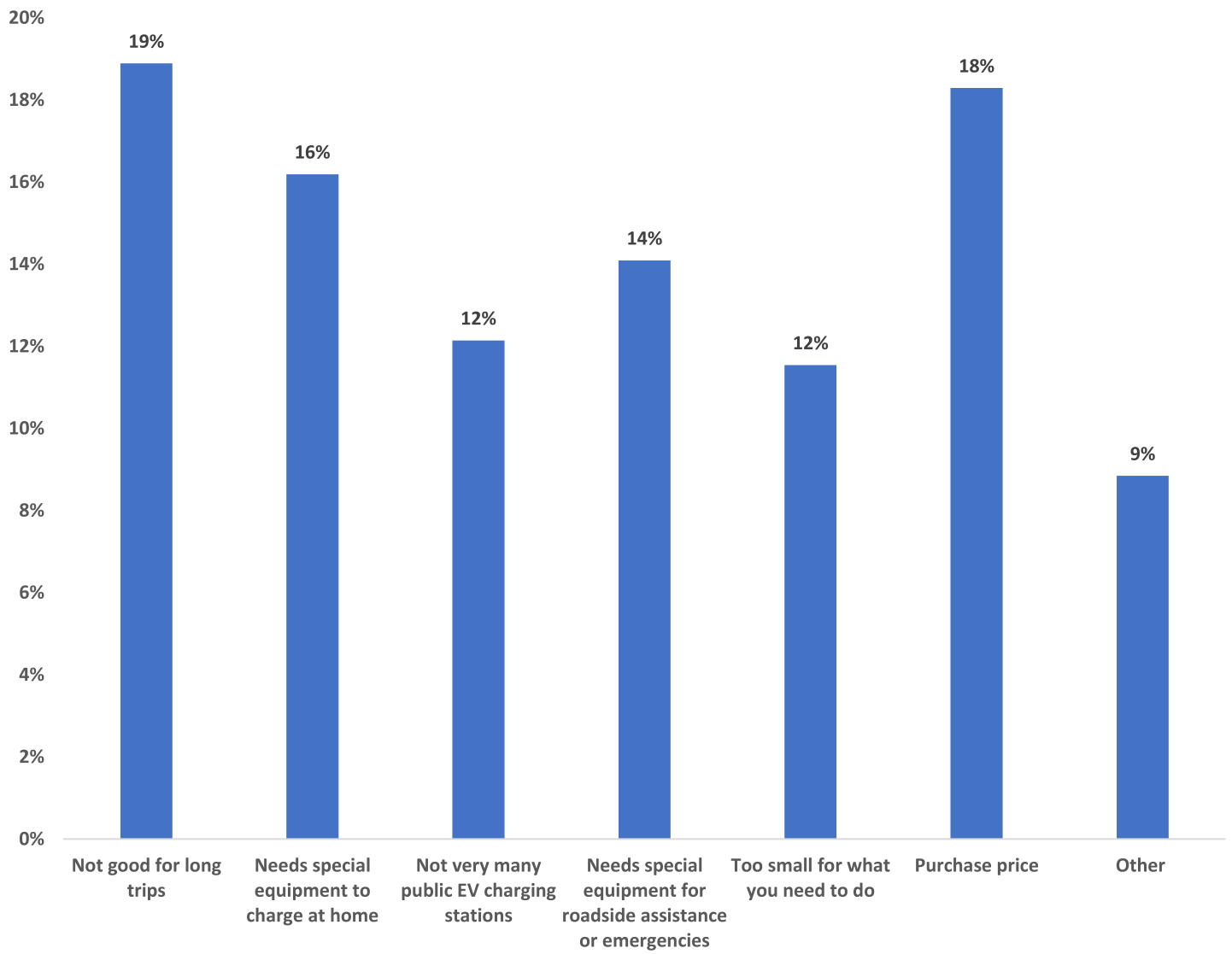
Answer	percentage(%)	Count(N)
Not good for long trips	19%	126
Needs special equipment to charge at home	16%	108
Not very many public EV charging stations	12%	81
Needs special equipment for roadside assistance or emergencies	14%	94
Too small for what you need to do	12%	77
Purchase price	18%	122
Other	9%	59
Total	100%	667

Other (Please Specify) Responses

most if not all of the batteries and components made in china
Not practical (especially when power is out, and for low income families)
Completely opposed
Production and maintenance overshadows environmental benefits
The environmental cost to produce is a higher price than a regular vehicle.
You can not recycle the batteries and there are dangerous elements in the batteries
Not made for heavy hauling trailers transporting animals, 4x4 not enough power and just a pain
I don't like anything about EV's
They don't protect the environment as implied too expensive can't pull my tv too political can't take long road trips hate the idea of electric cars
i beleave they are used to make it harder on those of us leaving the system, and being more self sufficient. as the fuel used to charge them creates the same carbon emmitions and the cars we currently have, i think them being better is all a lie
more harmful than fossil fuel, what are you going to do when the batteries need replaced?
Battery production offsets any positive impact on the environment.
We like the mountains not cities
Don't want to pay for their power!!
Do not agree that EV benefits the environment
Weight damage to roads
Not practical
Environmental damage in production and disposal, cost of repairs
Electricity isn't free. Likely property owners will be paying extra for it unless you plan to have those charging their vehicles pay for it at the pump so to speak. Battery replacement is too expensive. Where do the batteries go when they're no longer useful. They're not as good for the environment as some might have you believe.
They are not as green as people believe. I'm not sure the grid can support it if a majority of people change to EV
The batteries! The batteries have a devastating environmental impact. The disposal has greater harm than gas powered vehicles
They are bad for the planet!!!
Associated costs of ownership , charging battery , battery replacement,battery disposal costs
Cost for charging and the distance before charging
battery disposal and cost
They are not friendly to the environment in the way the material did the batteries is mined, and in the disposal of batteries, and in more electricity usage.
There so costly to replace battery's

Battery production and disposal
Materials to produce battery, replacement cost, stuck in traffic and battery runs out.
not environmentally friendly despite what media says
Battery replacement cost and disposal
Not sustainable
The amount it takes to make the battery
All of the above
Burden on our power grid
They create just as much hazardous waste as the present vehicles also with a electric power shortage where are we going to get a larger power grid to power these vehicles please let me know
It uses more energy to produce than gasoline vehicles and it is a hazard to the environment to dispose of batteries
Ruin the earth worse than fuel vehicles
High fire danger, extreme cost of battery replacement. Chance of Brown outs.
Power needed for hauling and traveling in hills/mountains
Cold weather reliability
End of the battery means you throw the vehicle away
uses electricity. Like regular gas powered cars
Poor choice for towing
The cost of replacing a battery is ridiculous, and just the making of the battery is more detrimental to the environment than using a gas powered vehicle.
Dumb idea. They don't even have the technology all figured out yet.
To much strain on the electrical system
Vehicle will outlive the batteries. Batteries are expensive. Batteries are not environmentally friendly to dispose of.
Their lithium batteries are highly toxic and cannot be recycled. Too many electric vehicles will over power our grid. In the long run, they are worse than fossil fuel ran vehicles.
The immense amount of power needed to charge EVs and what will happen to the powergrid if too many people have them.
The energy wasted to create and fuel them
Greater load on faltering grid, long charging/wait time, not practical at all etc. Not a true replacement for fossil fuel.
Environmental hazards are great, batteries are mined in CCP China
Fire safety
I don't believe they are good for the environment, too heavy, use too much electricity, batteries are a joke, do not believe in the climate agenda
Besides what I already stated, I live in a very rural area and EVs are not the best choice or have the EV support they need to make them user friendly enough for me.

Reasons for Not Liking EVs (Do not own EV, Familia with EVs, Don't Like EVs)



Q16 only asked of respondents who do not own an EV but are somewhat or very familiar with Evs and say they need more information to form an opinion of Evs

Q16. What additional information would you need to form an opinion about EVs?

What needs to be known?
Where do they get there power?? Do they charge going down the road,Do they have to plug in to Grid,If so ,What is the savings,still have to depend some out side sorce of power,Where is the savings?.
longevity
NA
How long it takes to charge. If car on fire safety concern. Where old batteries stored safety.
IDAHO POWER HAVE ENOUGH POWER IF EVERY ONE HAD A EV
I would need to know they are affordable
Battery and replacement and cost
I'm not currently interested in looking for or owning an electric or hybrid vehicle.
I'm not sure.
True costs.. battery replacement. Where does the battery go when no longer viable.. is the lithium mi ed ethically.. what is the long term cost to the planet
I need to know about EV's that can travel + 700 mile a day, and how long it takes to recharge
What it costs to replace the batteries

Q17 asked of all respondents

Q17. What type of vehicle do you currently drive?

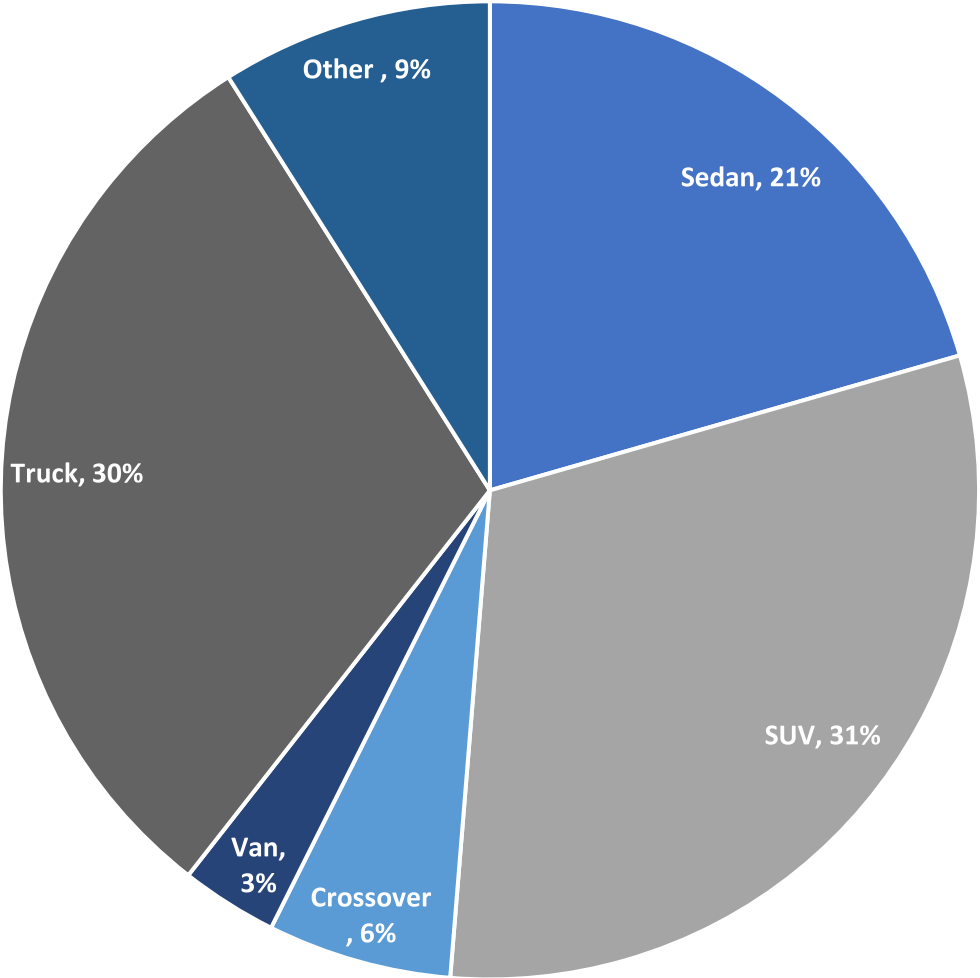
Answer	percentage(%)	Count(N)
Sedan	21%	135
SUV	31%	202
Crossover	6%	40
Van	3%	21
Truck	30%	200
Other	9%	59
Total	100%	657

Other (Please Specify) Responses

Hatchback
I have several vehicles. Diesel and gas.
SUV hybrid
Not your business
Subaru
Car
Mimi van
Pickup
truck, suv, jeep wrangler
Small SUV
Honda Ridgeline
Equinox
Kia Optima
crv
No car
All of the above
Car
Toyota Camry and Subaru forester
GMS Terrain
4door mucury
Station wagon
None
Pick Up
car
Sports car
crv
hamster car
I don't drive right now
Camery toyota
Bike
Small car
Truck, sedan and SUV
Toyota Camry trd
BUICK LACROSSE
Compact (ford fiesta)
hybrid suv

diesel pickup, and a toyota camry
Hybrid Toyota Corolla
We own sedan and truck.Husband usually drives truck
truck,van,suv,sedan,semi
Small suv
truck, motorcycle , suv
A half ton Chevrolet Silverado and a Dodge Hellcat.
Compact car
Do not drive.
Jeep wrangler
A 15 passenger econoline van
CR-V Touring Hybrid
Motorcycle
truck, SUV, sedan
Sport
Crv
Toyota Prius
Currently do not have a car.
SUV, Van and a truck
Hatchback car
Pickup
E bike
Truck and sedan

Type of Current Vehicle

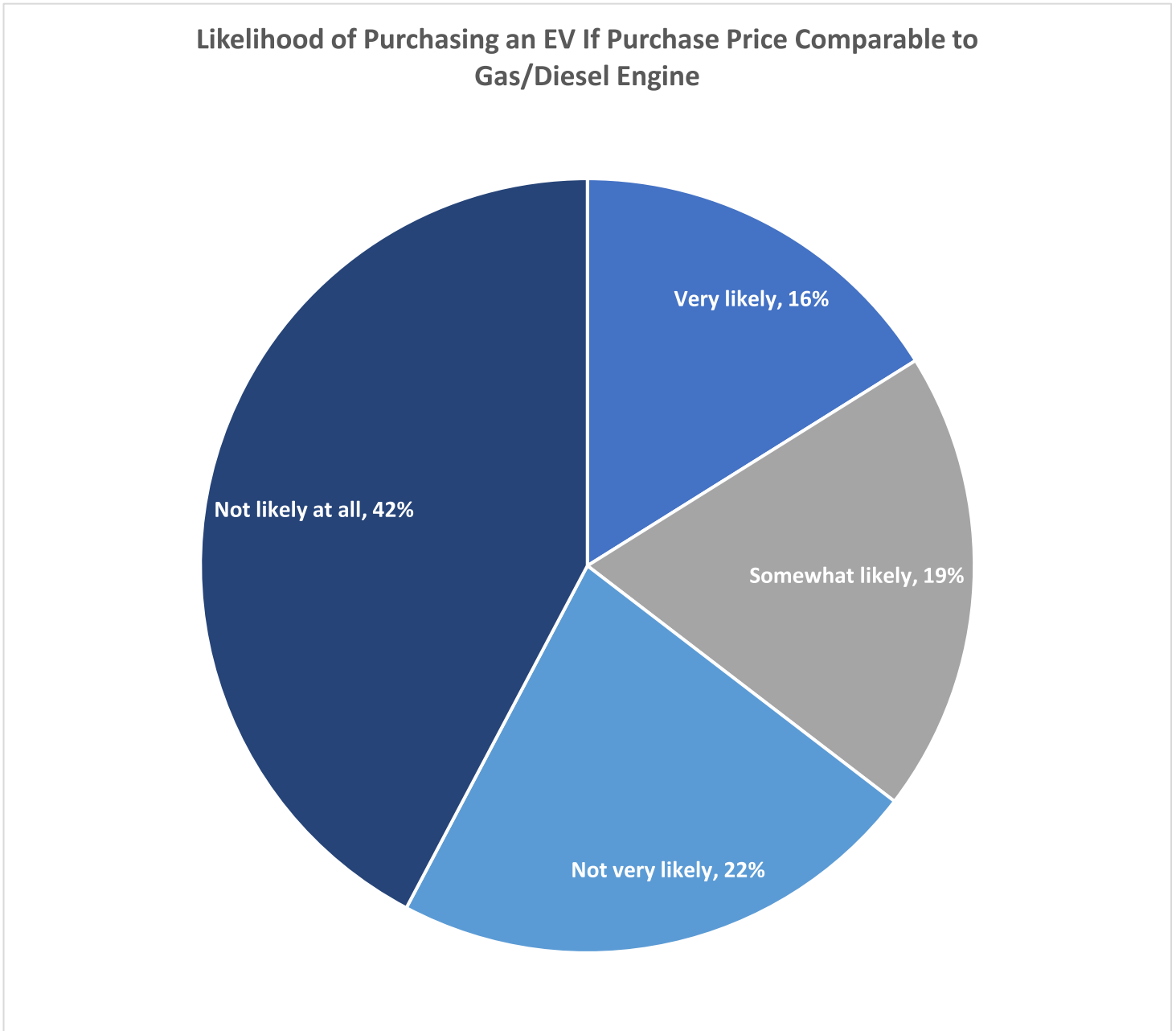


■ Sedan ■ SUV ■ Crossover ■ Van ■ Truck ■ Other

Q18 asked of all respondents

Q18. If available in your area and the purchase price of a new vehicle of your choice was the same for an EV and a traditional gas or diesel powered vehicle, how likely would you be to purchase the electric powered version of the vehicle of your choice?

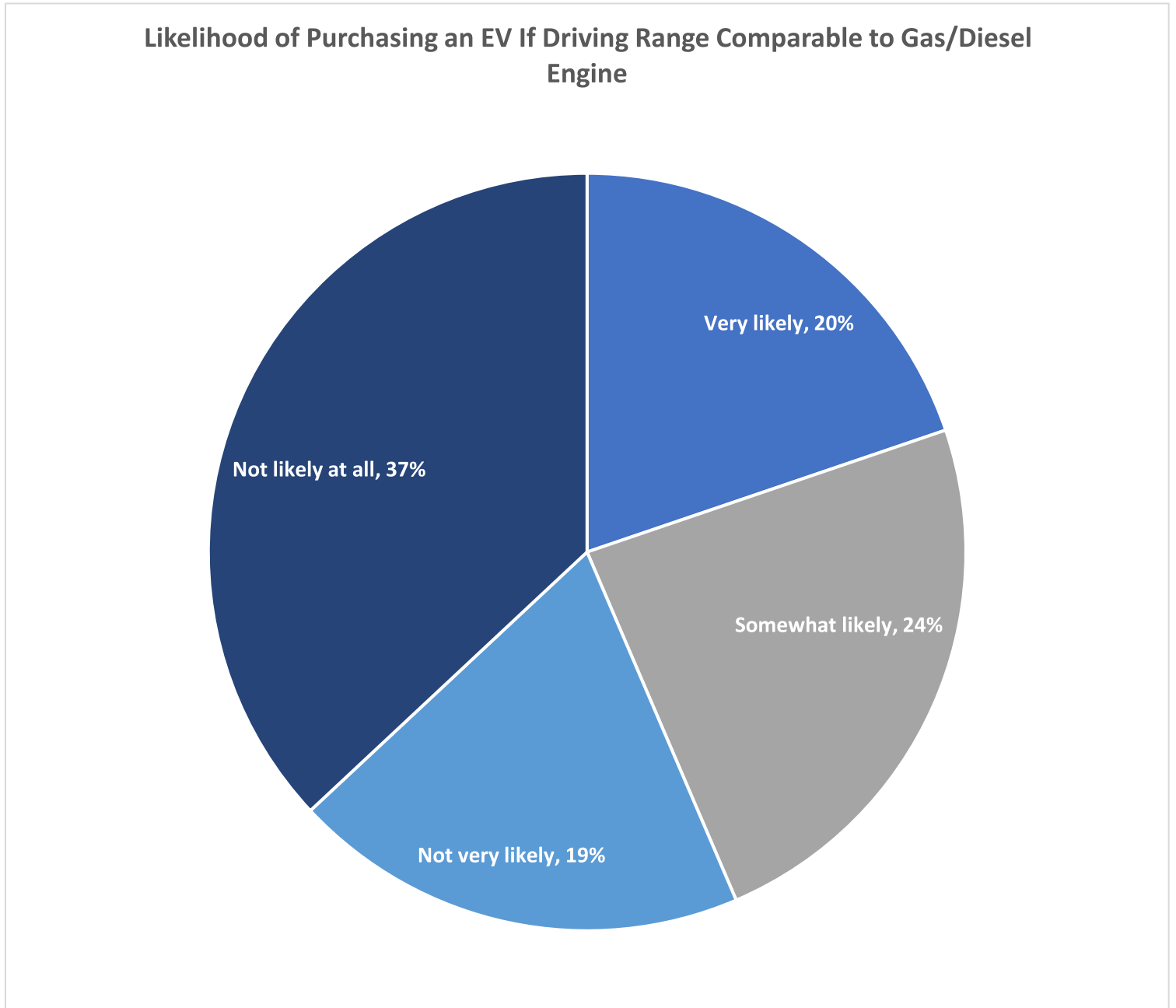
Answer	percentage(%)	Count(N)
Very likely	16%	106
Somewhat likely	19%	127
Not very likely	22%	147
Not likely at all	42%	278
Total	100.00%	658



Q19 asked of all respondents

Q19. If available in your area and the distance you could drive on a tank of gas or battery charge was the same for an EV and a traditional gas or diesel powered vehicle, how likely would you be to purchase the electric powered version of the vehicle of your choice?

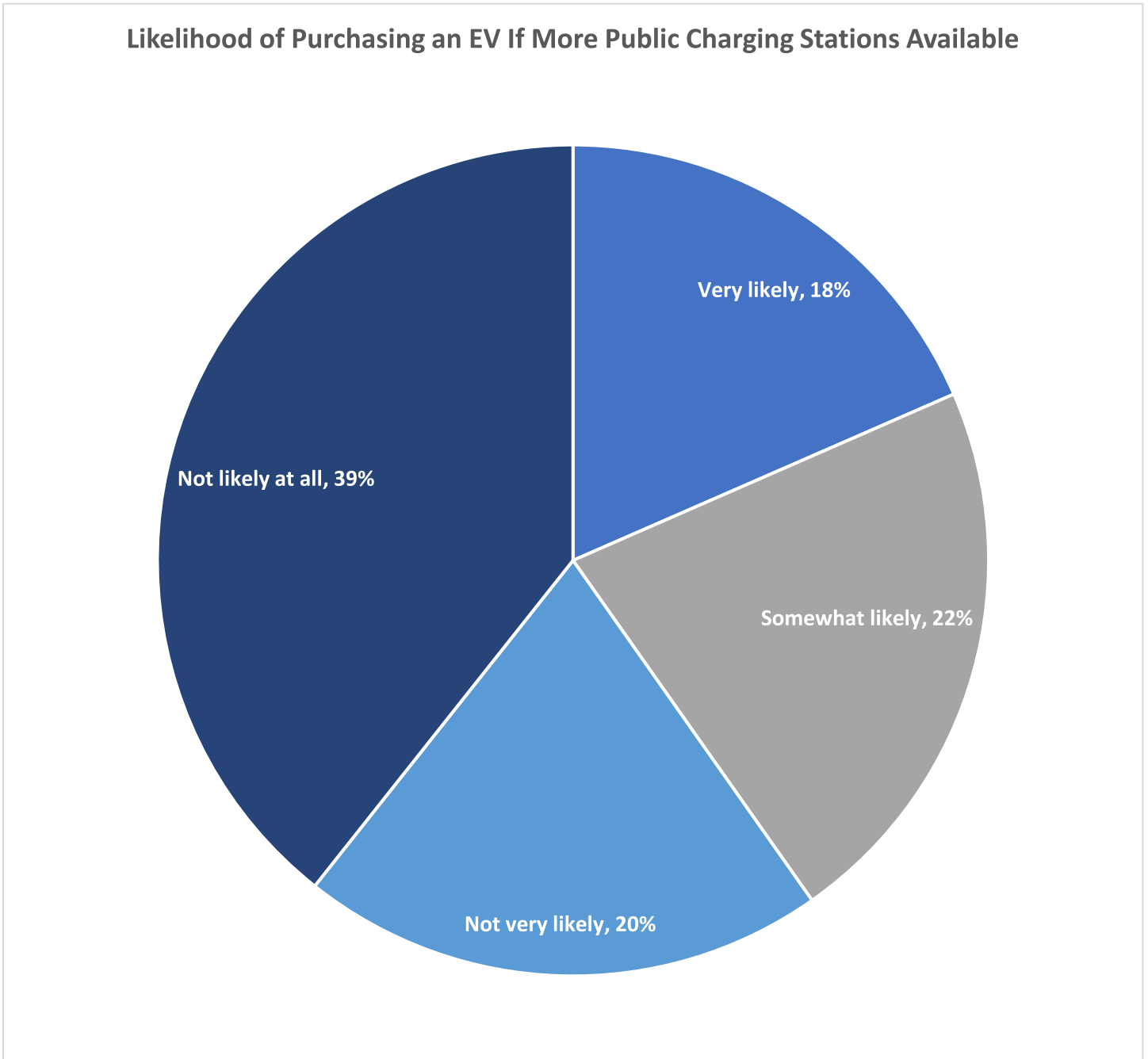
Answer	percentage(%)	Count(N)
Very likely	20%	129
Somewhat likely	24%	155
Not very likely	19%	127
Not likely at all	37%	241
Total	100%	652



Q20 asked of all respondents

Q20. If there were more public charging stations located in your area, or along highways, how likely would you be to purchase the electric powered version of the vehicle of your choice?

Answer	percentage(%)	Count(N)
Very likely	18%	121
Somewhat likely	22%	143
Not very likely	20%	134
Not likely at all	39%	258
Total	100%	656



Q21 Only asked of respondents who said they would be unlikely to purchase an EV in Q18, Q19 and Q20

Q21. Why would you not consider purchasing an EV?

Over all I personally don't believe they are as efficient as they claim,not to mention what it does to the earth, the reclamation is virtually non existent.
Most of the batteries and / or its components would have to come from china. How about the cars are made in the USA along with all the parts and components etc. then make them affordable. Then I would consider.
I live in a rural area with very few charging stations. I also haul trailers with my vehicle and would need the power to do so.
They will putt an extreme load in our power grid.
Not enough pulling power and range
charging will increase my electricity consumption
I would not ever consider it
Lifespan and power
I can't afford to purchase any new vehicle. It's not in my budget nor is it likely to be.
Depends on the power and the distance along with ability to handle all roads conditions.
For all of the reasons given previously - lack of affordability, lack of charging stations, longevity, ect... Infastructure for fuel powered cars is already established, is more affordable, and easily accessible (new and used). We also utilize our vehicles for pulling trailers, and I don't see an EV having enough horse power to do that.
There is no guarantee of no fires due to battery issues. These systems still have a lot of bugs to be worked out.
Because can't afford one
Durability on rough dirt roads
I do not wish to EVER purchase an EV. I do not trust them, nor do I care to own one. I am perfectly happy to keep my gasoline powered vehicles!
Cost of new battery to replace original. The cost of producing the battery let alone the disposal of said batteries. The main electricity grid has problems in winter and summer keeping up with the demand on it now, let alone if there is a whole bunch of vehicles added onto to it too. The wait time at the station to get hooked up to chargers is too long especially if there is a lot of vehicles backed up waiting. Then the wait time it takes to charge the battery doesn't make it very appealing either.
Because I think it's a stupid idea. In our rural area they wouldn't work well with the number of miles needed to travel and charging from what I understand is a timely issue. Plus we have power issues and electric vehicles would cause more issues.
Because Incan fill up my truck in 10 minutes and be on my way.
Not practical for those that have working vehicles or taking long trips. We are still going to need fuel for tractors, semitrucks, combines and all other farm vehicles. How long can a combine run on batteries before having to charge? How long does the charging take? EV's may be good for the cities where you do not have to drive miles to get to your job. How far can an EV go an a charge? And will there be a charging station available when needed?
The technology and cost are not ready or economically justified. I'm not opposed to the march of progress or hung up on internal combustion systems. Alternative energy is not viable and until it is we should not disrupt our economy or society and switch to the Green Deal. It is proving disastrous to countries around the world. Do not be a part of the problem, resist stupidity.
Expensive, requires substantial natural resources to produce and maintain
Because of the environmental cost is too high!!!
Can't go very far from home on vacation without stopping more times to charge battery than would have to stop for gas
We do not have the infrastructure to handle charging them, the equipment required for batteries is highly toxic and where do those batteries go when they are worn out?
PURCHASE PRICE!!!!!!

I can't afford a new car so I'm not interested in them, period.
Time it takes to charge
I like things the way they are not the way they're headed. Please stop and think... rolling blackouts constant issues already and you want to charge cars?
The hazards
As of now it would turn a 6 hour trip to Portland into 8 to 10 hours. The quick chargers actually cause damage to the batteries and what are we going to do with the mountain of dead batteries. Also the chemicals used in the battery is dangerous to mine and poisons groundwater
Society has become an electronic/ throw away nation, and as a result we have thrown the baby out with the bath water.
Already stated my concerns
I like the car I have and I don't want to be forced into purchases from politics or government.
a lot of our travels is in areas that do not have many gas stations and I don't think they will be getting any charging stations and what little I know about the charging stations is that they take a few hours to charge. If they were the same price for the same car as gas autos, and if they went at least 250 miles without charging, and there were charging stations in the rural areas, and they didn't take long to charge, and all of that used total less energy than gas autos, I may consider buying one.
I don't like anything about them and the damage done to the environment to get the materials for EV's is far more damaging than what it takes for gas powered vehicles. Lithium mines are so damaging to the environment
Price, fire hazard in the winter what percent of the charge is lost 1/2 3/4 ?
Don't feel that they are reliable in rural areas
Have a new hybrid and satisfied and feel I have contributed my share to lower emissions issue
Price, fire hazard. If solar is so much better why are the Chinese buying ALL the COAL they can. Soon Biden will sell them all states that have COAL. What good are their miles & miles of solar panels??? Tell me why.
Not interested
not at all interested. I don't like change. I would rather ride a horse.
Overall cost, reliability, legacy costs associated with the technology.
unknown
See previous answer
Range, charging inconveniences, towing capabilities due to range
Battery issues, how long do they last. Is there enough resource to keep building them.
They are not energy efficient they don't protect the environment they won't pull my RV they require charging won't go long distances my power bill for my house is already too high they idea is too political I could go on and on why I would never purchase one!
It's just a stupid idea and hope no one in this farming community ever buys any of them
The destruction to the environment to make the lithium batteries
The batteries are lithium, need I say more.
I think they are a good idea for city and commuter driving but not my lifestyle. However I have considered an electric UTV
Too expensive
Pushed by the Democrats
We live in rural area too far to travel would have to charge twice just to go to town
Too expensive and just not practical for everyday use.
No charging station in the mountains
The overall damage caused creating an EV and batteries is greater than a traditional gas powered car. I also do not believe they will be able to create an efficient EV that will allow long distance with load or a vehicle that will not need to carry its own generator and gas to travel into the back country.

We pull an RV and definitely don't want to have to stop for an extended period of time while the vehicle charges. Also the charging stations I have seen are definitely not equipped for a one ton pickup pulling a 38 ft 5th wheel.
It is a new product, our youngest son just graduated from the lineman school in Idaho. The speaker at there graduation told us the power system will have to be severely improved for the electric vehicles to be introduced. I also have read where in California they are asking citizens to not plug in or use there air conditioner account rolling Brown outs. Our power in Richland is constantly going out I think you should work on this issue before worrying about a electric truck
Main reasons for me is vehicle range, and continuous use time doesn't compete with fossil fuel at this time.
They are grossly misrepresented
Still takes fossil fuels to make the electricity. Battery disposal is a problem. Too many rare earth minerals are being depleted.
Maybe
no
as the carbon emissions to charge them is equal or greater than the emissions caused by just driving, i believe it is all a lie, to force us down the rabbit hole of dependency on consumerism. this may not make sence now, but give all this 10 years and see how much personal sovernty you have lost when all the cards are on the table. and any one not doing there homework on this subject, and others like it, and pushing this agenda on the rest of it.....hell is where you will be headed come judgement day
Because own a gas station
why would I consider one?
Worse for environment, not as powerful, unknown future price of electricity.
They are not "better" for the environment.
Price of charging , Reliability/ repair cost if problem
Cost, style, size, etc.
What it causes more use of power to charge the vehicle.
Not enough power to pull 17000 pound trailert
I don't want to have to charge at a public station exclusively. Our home doesn't have a large enough power capacity to charge an electric car. For us to own an electric car would mean either a major upgrade to our electrical capacity, or committing to charge at a public station every single time the car needed charged. I only have to fill up my car once a week or less. The cost and time away from home isn't appealing enough for me to make the shift.
Our current power grid isn't ready for mass-ownership of electric cars. In my opinion we should strengthen and get the infrastructure in place first and then give people the option to choose an electric vehicle.
Because they suck
We do not have enough electricity in our power grid for very many vehicles. In many states they have to deal with blackouts to conserve electricity, so would we want an EV?
I like my gas-powered truck.
Cost, range, no remote area charging .
Don't like them
Our area is not set up for evs and the likelihood of being stuck out somewhere is high.
I don't like the Idea of relying om a charge to keep a vehicle going.
I feel safer in my gasoline vehicle...I would have to educate myself on EV before changing my mind
Not enough info on them. What is the cost of replacement batteries? How long will the batteries last? Nope!
For the reasons already given. I live in a rural and already have to go 5 miles to get gasoline. I would have to go 20 to 30 miles to get a charge and the cost of a charge at this time is more than a tank of gas.
I'm just not on that side of the spectrum
Cost of inital purchase, cost for battery replacement, vehicle ramge amd downtime to charge, vehicle life expectancy, power grid limitations if everyone had an EV. Negative environmental impact to create and dispose of the batteries.

Because they are not clean and frankly neither is power why would I add to the failing grid
Charging time. Sometimes people need to get to work and fueling up in a few minutes is faster than charge time. You would have to have as many charging stations as gas stations. I saw people waiting in line for hours just to charge there vehicles.
I am concerned about the power that it takes in charging these vehicles.
Expenses, pollution, not ready for prime time.
Much of the material to build them has to come from other countries. Battery is not recyclable.
The batteries aren't good for the environment
Too many obstacles, we still use fossil fuels to create energy for charging stations.
Cannot travel very far before having to charge. Also replacement batteries are expensive. Not environmentally clean.
If everyone starts driving an EV there will be more electricity shortages and we would overload the power grid
Does not work for off road travel!
Can't afford a new vehicle, gas or EV.
Can't pull an RV or stock trailer, I don't want to stop every 200 miles or so to charge up.
Cost, Need charged to often, I dont see many positives for us rural people. City people dont realize where or how their food is raised, harvested and delivered to the store. We need to quit pushing this stupidity on people that EV will not work for. I drive a 1 ton dually and pull a large trailer to install my cabinets, I havent seen a replacement for that, that will run 400 miles in a day to do a job.
Doses not pull a 8 horse horse trailer and is not useful in the rural community!!
The technology is still very new. I'll wait a few more years for more upgrades to the technology.
Could not afford one limited income. Could not even afford payments on one. Barely make ends meet month to month as it is
They are not feasible in the remote area we live in.
Don't agree with electric cars as a whole
NO
I like my gas powered vehicle, I am less worried about having issues with my gas powered vehicle
Price hikes, impractical advocate pushes for complete dependency on solely electric vehicles
fire danger
Impractical
It is a big con game !
They are not appropriate for rural areas
Damage to the environment during manufacture and again in disposal
Too costly. If another country ever attacked our electric grid, it would be worthless.
The electrical grid is already stressed. There is a tremendous disconnect between yhe envoronmental/green energy groups and the true oversll gloval picture. Electric vehicles silve nothing; they may infact, create far more issues than they will ever solve.
They are lying to us about saving the environment. Takes just as much, if not more fossil fuels to build them and to operate them. I am not against fossil fuels.
Don't like them
They are not as green as the public is being told.
electricity is a valuable and limited resource that should be focused on servicing homes and businesses, not cars, eventually EV will cause a electricity shortage.
Environmental harm.

They are bad for the planet! Oil and gas are cheap, if our stupid President, and his communist cabinet would just get out of the way. Where do you think the energy comes from to charge an electric car? Plus, the batteries don't last. Plus it is bad for the planet to mine those rare earth minerals. Plus, you can only drive so far. Plus they're expensive. Plus if the Democrats want it, I don't! Gun control. Nope. Abortion. Nope. Electric Cars. Nope! Sorry. I am the wrong guy to ask about this. The election was stolen. Trump should be president. Biden is the commander in thief. He'll be out of office soon. They're buy Kamala out. Gavin Neusome will be the next V.P. then president and the ANTI-CHRIST will be here!
Happy with what I have
It won't benefit my needs where I live in Juntura Oregon at all.
Saving on fuel. Too far between chargers.
Not enough room in vehicle and do not trust it on the road.
Cost
The technology is not there to sustain all of us driving electric vehicles. When we start upgrading out grid maybe it's time to think about it. Maybe some day that will be the way but now it is not.
They are not practical or dependable. Mechanics aren't available to work on them. They have become too political
Purchase price too high. Have to put in charging station at home. Can't drive long distances.
Don't like them.
Battery life and the cost of replacing the battery.
Financially can not afford a new or new used car any time soon
Too expensive for my family. I also have major concerns about distance driving
cost, Efficiency And true impact on the environment
The battery. The rare earth minerals used to construct the EV batteries are both toxic and costly. Replacing a battery can be thousands of dollars
What are they going to do with the used batteries? And they don't go very far
Have no use for one if it can't haul livestock, boat, camp trailer, or side by side.
What it takes to produce an electric vehicle is not conserving anything. The infrastructure to make it worthwhile is not sufficient at this time. The cost to replace the batteries when expended is outrageous. If you wish to sell or trade vehicles after 5 to 7 years it would be worthless without new batteries.
I don't have time to sit & wait an hour every time I need to charge my car.
Safety, cost and dependability
I don't want to sit around for hours while it charges
It would take a lot of time to charge an EV and can't go to your destination when you have to charge backup again.
price & efficiency
BECAUSE OF THE POWER I PULL TRAILERS
They're stupid. Let's just stay with what we know works.
This limits the freedoms associated with driving a car. I like road trips and not to be "plugged in"
No
They're ridiculous.
Power grid already overloaded its a political lie about EVs only good for cities
Technology isn't there yet.
WE ARE NOT THERE YET. IT DOES NOT PENCIL OUT TO BE COST EFFECTIVE OR REALISTIC.
I live in cold weather most of the year. And I see the government having power grid issues now I could not imagine having a power truck and then turning the power off like in California during hot weather
Unproven at this point
The purchase price is more
Don't know enough about them

It would make my power bill go up, and the purchase price would prohibit me from getting one. Battery price is too costly also.
milage and the time taken to recharge it. Also, no ability to charge at my home economically.
The current technology of ev is not as flexible or reliable as gas or diesel vehicle. I live in rural area and ev support is not available now or likely to be available in future.
Because in the long run a diesel truck will last longer then a ev truck. Ev will just lead to more costly issues.
Like my SUV!! Electric is hassle
Charging time. It's easy to get a tank of gas and move along but sitting and waisting time at the charging station it's not quick. Also unsure about the reliability and longevity of such a new technology.
Not practical and lots of unknown costs
Just not a good source for the distance we HAVE to travel
They are still powered by fossil fuels. Absolutely not green. It's a scam. Wouldn't it have been better to make gas/diesel autos more efficient??
How long before we would not have enough power for homes. What are they doing with the old batteries. ?
stupid idea.. we cant even generate enough power across our country as it is without blackouts and such plus the cost to generate power alone.
Price, Expensive for new models that get more mileage that can also fluctuate. Fast charging stations far an few in between. Added cost for home charging stations. Not all Charging stations are Free either, what do you do if a family member breaks down on the road, buy added insurance for that?
We need to increase capacity on our power grid. We don't need EVs powered by coal burning plants!
I have worked in the automotive industry for years. EV's are not beneficial to the environment; they are also dangerous and unreliable. They are also not practical if you live in rural parts of the country and travel long distances.
How many people in our monetary and geographic area can afford a new \$60-70.000 EV...also battery replacement is almost the price of purchase...one of the hidden facts of EV ownership.
Not like about electric vehicles is this. They don't tell you all the hazards that comes with electric vehicles. Especially when they catch on fire there is so much has to smoke from them that's not funny contains hazardous smoke and it takes copious amount of water to put them out. And when you have to replace the battery packs that's where the expense comes in.
Cost of replacement batteries/availability
Where are they disposing of the old TOXIC batteries? Where are they getting the material to build each battery? What happens during a brown out or I have no electricity because of a storm or fire....how do I charge my EV??? How do I evacuate in case of a fire if my vehicle is not capable of being charged. What if I have to leave in an emergency and there are no charging stations where I am forced to go. I travel all over the US for business....and have not seen enough charging stations
Battery cost and battery disposal. Not good for our environment. Still takes energy to make electricity, to charge batteries. Not suited for long travel yet.
If i learned they are more friendly to the environment, and if the price cane down, and of the distance traveled es comparable with fuel burning vehicles.
To much on the power grid
The cost
Smart people know how those batteries are made as well as DUH!!! the charging stations use electricity which further stresses the power grid. Gas or Diesel is the ONLY way to go. People are so gullible and run around doing what the main stream media says without doing any Actual research. EV are one of the most recent worst ideas yet. There are so many BAD ideas to choose from these days. No thank you I will keep my gas and diesel, now if we could get rid of Ethanol and Urea (DEF) requirements.

Waste of money
Wait times for charging. Cost of batteries if needing replaced. Efficiency of charging in extreme temps.
Too expensive to buy. Just not interested.
range and time to recharge while on road
Driving range limitations
Long term cost of ownership, and environmental impact from mining
Currently there are not enough charging stations in the areas I am to be able to get the energy I need when I need it. Second I am concerned where the electricity would be coming from... we already are being told to be careful with our use that there is too much pull on the grid. What will happen if everyone has electric cars?
Cost, there not a green vehicle, cost to replace batteries, where do the junk batteries go ?
Because we already have enough strain on our power grid in the summer and not willing to exchange AC use to plug in a car. Have also heard replacing batteries are as expensive as car itself and landfills are filling up with EVs. Not very environmentally friendly in my opinion.
Don't like them
No.
Too many issues from geo-political, grid readiness, environmental, logistical, financial etc. have not been solved to support mass conversion to EV's.
you don't save anything cost more to register, battery's cost too much and to heat the car in winter sucks the power even more less mileage maybe in 20 years they might be perfected. but right now its a scam. most of the parts made in china they are getting rich america suffers
they are not dial in yet! to new technology
The price is way too high, not just for the vehicle but for the charging apparatus and the battery.
Already have rolling black outs. And SAVE THE SALMON
To new, to trendy, possible electric grid overload
I'm old school.
Because they are not even close to being able to do what I need them to do at this time. Also they are not as environmentally clean as they are said to be. When you consider everything that goes into a battery for an EV they create more pollution than a standard vehicle does over its lifetime.
Its a ridiculous idea. I'm more than happy with my gas powered vehicle.
Not worth the expense and hassles, they do not go or do what I need them to, living in a rural area. They are not saving the planet.
What is the grid going to do if everyone did buy a EV the grid is barely able to handle the load now I also live in the country and have no desire to sit in a line for who knows how long to recharge my vehicle I also wonder how long the batteries really do last and how much it would cost to replace on and what is our country going to do with all the batteries that no longer work how green is that going to be to many unanswered questions
Price and availability of charging atations.
No \$\$\$
Because they are way more harmful to the environment and what are they going to do with all these vehicles when all of them are junk since the majority of the car is battery and not much body this is just a form of government control that is over stepping its bounds

Range and availability of recharge stations cause me to not consider an EV.
I don't want one. I want to be able to put gas in my car and go.
Battery cost and disposal concerns, Charging time too long, availability of power to charge concerns. California for instance asked EV owners to not charge during high temps due to power concerns.
takes to long to fully charge one hr or more gas station 5 min adds lots of time to your trip
Too set in our ways, we live in a rural, middle of nowhere area. We are lucky to have cell service.
I don't believe that an ev can serve my everyday needs. However I would be interested in a commuter car
The overall cost and maintenance and bother would not be worth my time. We have fuel resources we can use.
No support for charging. Where would you charge them?? Besides its a joke because fossile fuels (coal) are used to create the power at the charging stations. Soooo ya What's the point???
Firstly, additional impacts to the environment that lithium mining will cause is a huge concern. Secondly, we drive one-ton diesel trucks and haul heavy trailers so EVs aren't an option. Toyota has developed green (not gray which is created using fossil fuels), hydrogen-powered semis and cars, so that concept will hopefully take off very soon as a safer, cleaner alternative to EVs.
I don't trust the government who is so adamant about everybody changing over. I wouldn't touch a battery car with a ten foot pole.
Not enough kinks worked out. Takes too long.
Too expensive
Inconvenient. Time it takes to recharge. Expense.
I can't afford a new car....the last car I bought was a repossession for \$3000. All my cars are over 25 years old, the oldest is almost 40 years old. You think I would consider purchasing an EV? With what money?
Time wasted charging vehicle
Check out how they mine for the lithium
The electrical grid could not sustain everyone driving an EV. Don't like the idea of sitting at a charge station waiting for a charge.
Charging time, don't think the "bugs " are taken care of yet.
I don't want one
Because I think everyone should have a choice and it seems that the current administration leans to the hard left and this push towards EVs takes away choice. Also the environmental concerns related to the EV batteries are worriesome.
I would only consider it as a secondary mode of transportation. Gas is readily available but if we were to have an electric power grid outage we would not have transportation
again the battery waste
the power grid cannot support them at this time. we have power outages when ppl turn on AC or Heat in the USA.
Do you really think that the grid can handle all of the ev's that you are hoping for? I see huge problems as more ev's are purchased.
There is NO equivalent truck available that allows me to haul what I need to that has enough carrying capacity, torque, range and longevity. The technology is too new with too many unknowns such as battery replacement cost and true cost to operate. We will not reduce our emissions as they will still be emitted at the source where electricity is produced. I don't want to give the progressive politicians any motivation to further their climate change agenda.
Range is too short.
Not practical for my location and I'm old school...I like my gas engines.
Gas is more reliable for me

it is not practical nor is it environmentally friendly.
Don't have faith the power grid could support multitudes of EVs. They take too long to recharge. Not enough charging stations to support long trips. Much too expensive! No realistic savings in owning one.
Depends on the cost and distance one charge could go.
I don't see any advantage. You just use more electricity and that doesn't make sense to me. I'll stick with my gas powered car, thank you.
Maintenance cost and battery replacement costs vs a gas or diesel vehicle
Batteries cost too much to replace. You can't barrow gas if you run out.
At my age, my vehicles will last my lifetime. Don't plan to purchase anything new.
Electric demand is already strained!
Don't have the electrical grid,,,power to support all electrical needs
It's all a lie! It's not sustainable!
The batteries are worse for the environment than fossil fuel.
Like I stated before it is not feasible for my type of driving and where I need to go
Do not think they are cheaper to maintain or run. Replacement battery costs? Nobody talks about that! Do not want to wait in line to charge the car !
I am not just hauling myself around. My vehicles serve a larger purpose as opposed to hauling people. Those EV's don't exist because they would be too expensive and would not have the capacity to do the job. Make an EV that I can't refuse. Then I will get serious about getting one.
You still need to pay for the electricity it takes to charge it. So less vehicle, more waiting to charge the batteries more money.
Same reasons I gave before. Lack of power supply and I think the manufacture and disposal are an environmental disaster.
My impressed with the battery issues
Financial limit is a big factor for low income retired seniors and veterans
Too much energy to make and charge
Catching fire from a crash, what or where to dispose of old batteries. Takes too long to charge. What is generating the power to charge vehicle. Replacement tires are very expensive. When charge runs out, and you are caught up in a traffic hold up in the winter, how will a person keep warm? We feel the technology is not there yet.
The damage to our planet would be far greater from all the mining that would need to be done to supply the raw materials for the batteries. Also there is not any good way to recycle the used up batteries.
I like hearing the engine. Don't like the battery. Don't like realign on Communists China for anything.
Because it's a scam perpetrated by corrupt and dishonest politicians who are morons. They are not "green" or eco-friendly whatsoever and will NEVER take off as they think they will.
Cost, charge time, range, battery replacement cost and availability. If I only drove around town, then maybe. But long distance driving and amount of time to charge make an EV not practical.
Not at all convinced they're a better way.
Concerns over cost of electricity and possibilities of being stranded and no way to charge the EV.
Not proven, and cost is too much
Cost of batteries and other parts.
A picture sticks in my mind. Dozens of EVs along interstate in California, east of Sacramento just west of Donner Pass out of power and no charging because of remoteness. Also — the widespread Electric outage in Texas that lasted over two weeks. PLUS — an aging electrical matrix nationwide — does not inspire confidence to own an EV.

house not set up for charging , don't want to pay to have it done. Range of EV's. Inconvenience (time) to stop and wait to charge. Cost of EV. Extra strain on the overworked grid. Extra batteries in landfills.
They are not environmentally friendly, too spendy and a burden on our power grid
Just not interested at this time.
Future of these things is unsure Hydrogen is probably a better long term transition
No
I don't think that EV's are a viable option for the farming/ranching lifestyle I currently live.
See above comments
Parts/batteries too expensive. Question reliability . Not able to travel as long of a distance vs. gasoline/diesel (problem for rural areas)
Too much of a problem finding charging stations. What it takes to make the batteries.
Simply not interested!
Already said, too pricey, batteries very expensive to replace. Just not interested in having one. Just where do all these car companies going to get the electricity when we are already have to many companies and people drawing down the amount of electricity that we have.
Due to the high cost of electricity, I only see the cost going up more as there will be more demand for power, and we will be paying even more in our homes and businesses.
As stated before, EVs are hype, and in reality take more so called fossil fuel to charge these vehicles than traditional gasoline powered vehicles. Additionally they are hazardous to the environment because of the batteries that are used. It is a no brainer, and they should be outlawed. Also, the electric grid can't support the charging of more EV cars when it can barely handle current energy needs.
I don't like the price the battery no trade in value and last but most important I don't like feeling like it is being shoved on us whether we want it or not!!!
They are ok in big cities, not out in the country doing real work.
Battery fires are a concern.
Biggest hunk of scrap iron out there
Because we're not ready for them yet, we have power shortages now when it gets to hot or to cold!
I would not consider purchasing an ev
I dont k ow the ture costs.. and our power grid is already sturgglung.. and we have enough oil for well over 399 years...i think the technology need to be farther along
The waiting to charge them. I like to gas up and go.
price, lack of charging stations, inconvenience of trying to charge workhorses of the farm, in other words the 4-wheelers we use for spraying, weed & insect control, traveling from field to barn, running tractors, turning on and off irrigation systems, getting mail from main road, etc,
Takes of way power from people who need power to charge an EV.
If there's a power outage there's no refill
Cost to much!
Price and inconvenience of milage range and charging.
I dont like them. They use more resources to produce them than they save in the long run. The fires they produce are extremely dangerous and they are hotter fires that will last for days.
Not tested enough. The things catch on fire and the battery replacement costs more than the vehicle. I know what a thermal runaway is. I flew helicopters in the Navy.
I think the technology is too new, the performance is inferior, the maintenance is too expensive, and the infrastructure is not in place to support this change.
Cost of battery replacement

I wouldn't mind it if we were ready for it. I think it's a good option for some people but I don't think we are ready to jump into it as the only solution or option for our transportation needs. Somewhere down the road we will be but to go from gasoline to electric "overnight" is not going to be good.
range, cost, value
Range is too short. I drive from Oregon to Montana several times every year, at least 700 miles one way. When electric vehicles can do that drive in the same amount of time as a gas car, I might buy one.
The batteries and the material it takes to make them. Not really environmental friendly
Already answered these questions.
It's way to much on our electrical grid and I don't believe for one minute that the gas powered vehicle is as hard on the planet as is it is being blamed for.
Expense, mileage, and availability
I am too old to even think about.
Power grid concerns, length of charging time, location and availability of charging stations
no
They would never make one that was big enough to haul my whole family
distance on a charge. environmental issues with production of EV and electricity to charge. If more EVF are sold will there be adequate power available
We travel a lot which would require a substantial more length of time to get across the country if we had to stop and charge a battery vs filling a tank of diesel. In addition, the infrastructure required for both transporting and producing the energy required for a large number of people to operate these types of vehicles is still unrealistic in my view. Charging stations in the fields aren't very realistic. Other uses from fossil fuels and industries should be considered as well, if you decrease/do away with gas & diesel engines there are many more industries/materials/goods that will either disappear or have a substantial cost increase associated with them in finding and producing a replacement, which is again an unknown. Just a few thoughts.
I prefer the convenience of gasoline, the ability to purchase a cheap vehicle if I want to, the batteries cost WAY to much to replace and are less environmentally friendly to produce than using gasoline. The travel routes I would have to take to for distance driving would actually take me longer to get where I'm going and I'm not at all interested in that.
Cold weather reliability, rural location - drive distances can be long.
Cost and disposal of "green" energy waste such as batteries. Can't afford the price of any new vehicle. Don't trust EVs for winter mountain driving. Can always throw in extra can gas. Don't know about extra electricity.
not enough 'green' energy to support EVs for everyone, still need fossil fuels to produce the EVs, still need fossil fuels to produce "green" energy via windmills, etc., still need fossil fuels to produce electricity - we are already experiencing electrical blackouts without having to run EVs, how much will energy cost to support two EVs or more per household, If running out of battery while on the road how does someone get back home. Just a really stupid idea that has not given any thought to
Don't want one
just because there were more charging stations doesnt mean I would want to sell my already paid for diesel truck for an electronic one.
I just refuse to buy one at the price, with batteries(and the associated lithium mining that is done) that are doing more damage to the earth than fossil fuels. I agree we need a long term solution but an EV won't be where I go.
I would not be able to afford the power for it to run. If it was a self-charging EV I would get one in a heartbeat. I have a super low income.
they dont meet my needs and dont reduce need for fossil fuels.
Only in the case of regulatory mandates.
Happy with gas, diesel
The cost of buying a new car is too expensive right now

To many extreme weather conditions (winter/Summer) poor performance and too far between charge stations
Because I do not reace my vehicle every 10 or 15 years. When the battery fails I have to buy a new vehicle. If my engine fails I replace my engine.
We are being duped. Electric vehicles ARE NOT green. They use a ton of resources to make and to dispose of. We should NOT be totally reliant on our electric grid for all energy. Are we going to burn OUR natural gas to make electricity?
Lack of range and inconvenience of charging. Also afraid of rising cost of electricity to support EV's
The US is not ready for this type of vehicle. This EV crap is getting shoved down our throats politically and I'm not buying it
They are worse for the environment and they are pushed by a political agenda.
Because I dont want one.
no savings to the environment over a gas powered vehicle. Sticking with oil and gas.
They are harmful to the environment. Look at the research. How do you plan to dispose of spent batteries. They leak toxins into our soil and groundwater. The whole idea is ridiculous. I thought the American people had more sense to even think this benefits our environment. It goes true for solar panels. They are a horrendous eyesore and produce harmful waste.
The cost is too much
Cost, dependability, poor choice for rural areas, poor choice for remote areas, poor choice for long road trips,
Unknown dependability, less efficient in cold climes, inconvenient recharging times, limited range, current higher cost per mile of ownership, premature demand for inadequate infrastructure buildout, inefficient use of natural resources.
little power on hills etc.
I don't trust what is going on in our government. I don't trust that electrical charging stations would be available anywhere you might need it. Or that the government couldn't take those away if they decided to. I'd rather keep my car. Thank you.
Pro Energy Production for jobs economy etc
Price. I am on very limited budget.
I don't believe in them at all. It's a democratic way to screw this country up.
On a very limired budget. Social security disability only. A new vehicle out of the question for my budget
The batteries are very expensive to replace, you mostly need fossil fuels to create electric for charging the battery, and what will be done with the old batteries when they go bad, are they able to be rebuilt ?
The price and the inability to drive them long distance. plus the lack of power and batteries for replacement. And the ability to safely junk the batteries in a land fill. 2014 focus has no battery replacement and the cost is 14000 dollars for an 11000 dollar car
Everything that it takes to build and maintain an EV is so much worse on the environment than gas and diesel vehicles
Have to have diesel to power stations. Live in cattle country. Long distance between ranches. Rather pay for .
Because our power grid would fail if we go to ev.Idaho power generates most of their power with coal.
The cost of replacing the batteries are very high.
Its all the green Biden far left agenda. No

They are detrimental to the environment, because of the battery and how the battery is made and what it's made out of. Not to mention the electrical grid has a hard enough time keeping up with demand without adding all of those electrical cars. To replace one of those batteries costs a small fortune. In my opinion gas is better for the environment than those batteries.
The fuel prices make EV's more attractive.
I like what I have
Well when you buy one in the maintenance on one charging all that is up to you as an individual, you would think the government would think a little bit but since it's our money they spend it unwisely, it's pretty sad!
They have multiple long term problems for our planet. Toxic waste disposal, not enough electricity for everyone to have one, longterm expense associated with batteries, not convenient These vehicles are fine for some but should not be pushed on everyone.
I'm an American!
Not happy with the way the country is heading. The green energy plans are a bogus bunch of crap.
I am up in the mountains alot I might need gas
From what I have read they have a lot of expensive up keep, power isn't like a gas or diesel vehicle.
Inefficient use of energy, batteries are not evolved enough.
It takes too long to charge them; you could easily be left stranded in the middle of nowhere. How can someone bring you a jug of electricity? The reason electric is being pushed so hard is over the theory that man using oil is what is causing global warming which is unproven, and I don't believe man is the cause.
Too many are trying to breach the power dams, to protect the fish. That would deplete a power source that is already in short supply. Where are you going to get the power for these vehicles ?
Common sense
The worry of unavailable power stations for charging and power outages.
Because they are not practical, not energy-efficient when all is said and done due to the way energy is produced to currently charge them, no way to currently recycle the batteries, and who can afford the cost of replacing batteries when they fail.
Length of battery life. Cost of new batteries. The time it takes to recharge a dead battery.
Their lithium short lasting batteries are terrible for environment. They cannot be recycled. They will over power the grid. They're absurd for rural areas.
They have talked in the past about not having the access to make enough power with out having to add the extra amount that will be needed to power the whole country in EV's. California already has planned rolling blackouts what is going to ahppen when they have the rolling blackouts people will not be able to charge their vehicles.
The price of precious metals needed to manufacture the batteries, the lack of infrastructure for charging, long charge times, increased likelihood of an electrical fire in the vehicle are all reasons why I will not consider an EV
I don't feel like there anything "green" about these vehicles and batteries cost more that the rig
To much money for a car. And the batteries are too expensive to replace.
Convenience, expensive repair costs, no advantage to the environment.
Not interested.
Seriously?? Where do you think the electricty comes from?? What a draw on an already loaded system!
I don't believe when looking at the total comparison that ev is even equal to gas at this time
See previous comments/answers
Takes to long to charge, adding several hours to long road trip, most not that good looking, fire hazzard

They are not more environmentally friendly, they don't have the capacity as a fossil fuel vehicle, the batteries are toxic and come from China, supporting the CCP and shutting down our domestic oil. It's all a political game
Need more data on battery life ..I would be likely to purchase a hybrid vehicle over an all electric at this time but since I am in my 70's and my car has 45,000 miles on it , I am not likely to buy another car .
Cost of China batteries
Expensive and inconvenient to operate. Doesn't it take power to charge them??
No interest
Not comfortable with the range and the amount of time it takes to charge and available station's. Battery fires also worry me. Also how much extra load is this going to put on electricity demand.
Not practical!
I do not feel we should rely so heavily on electricity for vehicles and homes and etc.... I am unaware of the expense involved in repairs and disposal of batteries
I will NEVER purchase an electric vehicle.
I like ice
There doesn't seem to be enough electricity to power Houses ALL DAY, EVERY DAY. Why would we want to increase the need for more electricity.
Time to recharge and distance per charge.
Due to the reasons previously explained
I like the smell of gas
Price, cost of maint, and you can not drive further than your damn bathroom before recharge. Total waste of time, money & natural resources
They ain't any better for the environment then what are fossil fuels already are As mining for the products to make batteries is it any better for environment as fossil fuels
battery disposal
Reasons I already stated plus I can fill my tank in minutes compared to hours to charge.
Even if there were public charging stations the time to recharge would be too long.
They are more harmful to the planet than we are led to believe.
Cost, inconvenience, cost of repairs and parts
Cost, unable to drive distances, inability to tow heavy loads, lack of charging stations. Horrible idea for Idaho.
They still need fossil fuel to work the charging stations. I do not like the size, nor do I like the disposal of the costly batteries.
I'm going to buy something that when the battery dies, it costs the same as a new vehicle to replace. It's just like throwing money out the window. Plus they can't be recycled and become a landfill issue. So they aren't good for environment anyway. I'd rather invest in something that can be repaired and rebuilt without paying the cost of a new vehicle. If EV disposal became cleaner I might reconsider, but right now it's a no.
Once there are more electric vehicles being used, the price of electricity will go through the damn roof, just like the price of gasoline, it will just be another way to rip everybody off it will not stay cheaper.
Not needed.
I wouldn't. I don't think ID Power or any other can handle a large increase of EV's that need constant charging.

Q22 asked of all respondents

Q22. What is most important to you when purchasing a vehicle?

Answer	percentage(%)	Count(N)
Size	12%	81
Price	37%	244
Fuel-economy	18%	122
Off-road ability	7%	49
Towing capacity	12%	80
Other	14%	92
Total	100%	668

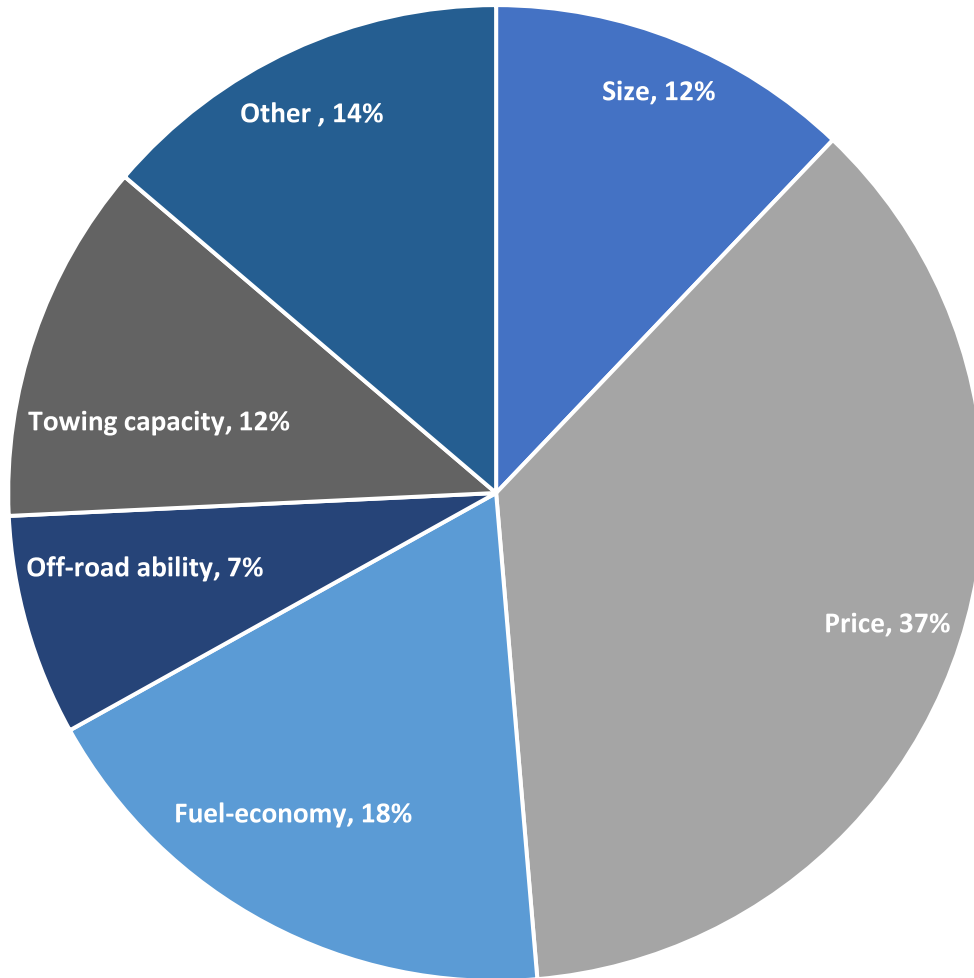
Other (Please Specify) Responses

Dumb question
Utility. All of the above.
That is is not an EV
Price,fuel economy,size if solar power is so great .Why is china buying up ALL our COAL? I hope biden doesn't think of saleing all our COAL states to china.
Price,size gas economy. In the winter 1/2 of the battery power is lost in the night.
Not interested
Cost of combined overall ownership. Your available selections are too narrow of a summary. Fuel economy and price are synonymous, or should be with a cost conscious consumer.
I drive a service truck and bigger suv
All of the above
All of the above
Snow & ice safety & fuel economy
all of these are important, including can i fix or repair it myself
Functionality for my large family
long-term dependability
All of the above
Comfortability all around
All of the above
versatility
Comfort and room for family
Good ratings for longevity
pick up, 4 door for family, 4x4 for family fun, price point - if i could get all of this in an EV that i could afford i would, but i cant at least right now
Different at different times
The cool factor
Reliability as tested for survival in motor vehicle accident.
Lots of things
Reliable
Reliability
quality of the vehicle that would include size, price, fuel-economy, off road abilityy.
Top three
Dependability of the make/model
Reliability
Safety
0-60 mph = <5.1 seconds, decent gas mileage, low interior noise level

Work truck
reliability
All
Applicability for desired purpose of vehicle. No one thing or vehicle meets all my needs. I need a vehicle with towing capacity and off-road capability and I need a different vehicle for long range travel that is fuel efficient. Waiting to charge an EV compared to re-fueling fossil fueled vehicle on the road makes and EV totally unacceptable.
fuel economy, looks, ease of maintenance
Safety
All of the above, but the quality of Toyota, and the ingenious design is amazing!
Size & all-weather capabilities
There are several factors. One not more important than another. and one is not necessarily more important than the other
size and price; husband is 6'6"; wife 4'11"
Safety, room, 4x4, comfort, Navi
All of the above .
overall comfort and nicety's, value for the dollar
Longterm durability and all the above
All of the above
Dependability. Cost to repair. Cost of vehicle vs what you get.
Made in america
None Fossil Fuel
Longevity, quality
all of the above
Reliability, overall value
4 wheel drive , able to carry load if needed, tow on occasion
all of the above
All of the above
Repair costs
Size, off-road and Price
Versatility
Dependability
All of the above
Im older and i am driving my last car.
Luxury
Ease of access to get in and out
Size, price and towing along with 4 wheel drive
practical use of space, nearly everyone gets a window seat and there is room for luggage or stuff you buy at the auction or garage sale. I always buy a 7 seat minivan.
Size, price, and fuel econ.
Comfort and features
Reliable in each of the above
That it fits ALL of my needs
Price along with economy
My needs at the time I purchase.
Comfort
Reliability

Capability
Size, price, economy and performance
similar capacity as a Ford F-150
Comfort and convenience
Look
how fast it will go.
Safety is very important to me.
Reliability
To many problems with them.
Depends what I need at the time.
Dependability and fuel economy with your needs. Living in a rural area I need a vehicle that I can trust and depend on with good fuel economy because everywhere I go is a long distance.
Being able to repair your own car.
DEPENDABILITY
Size, price, fuel economy, and disability features

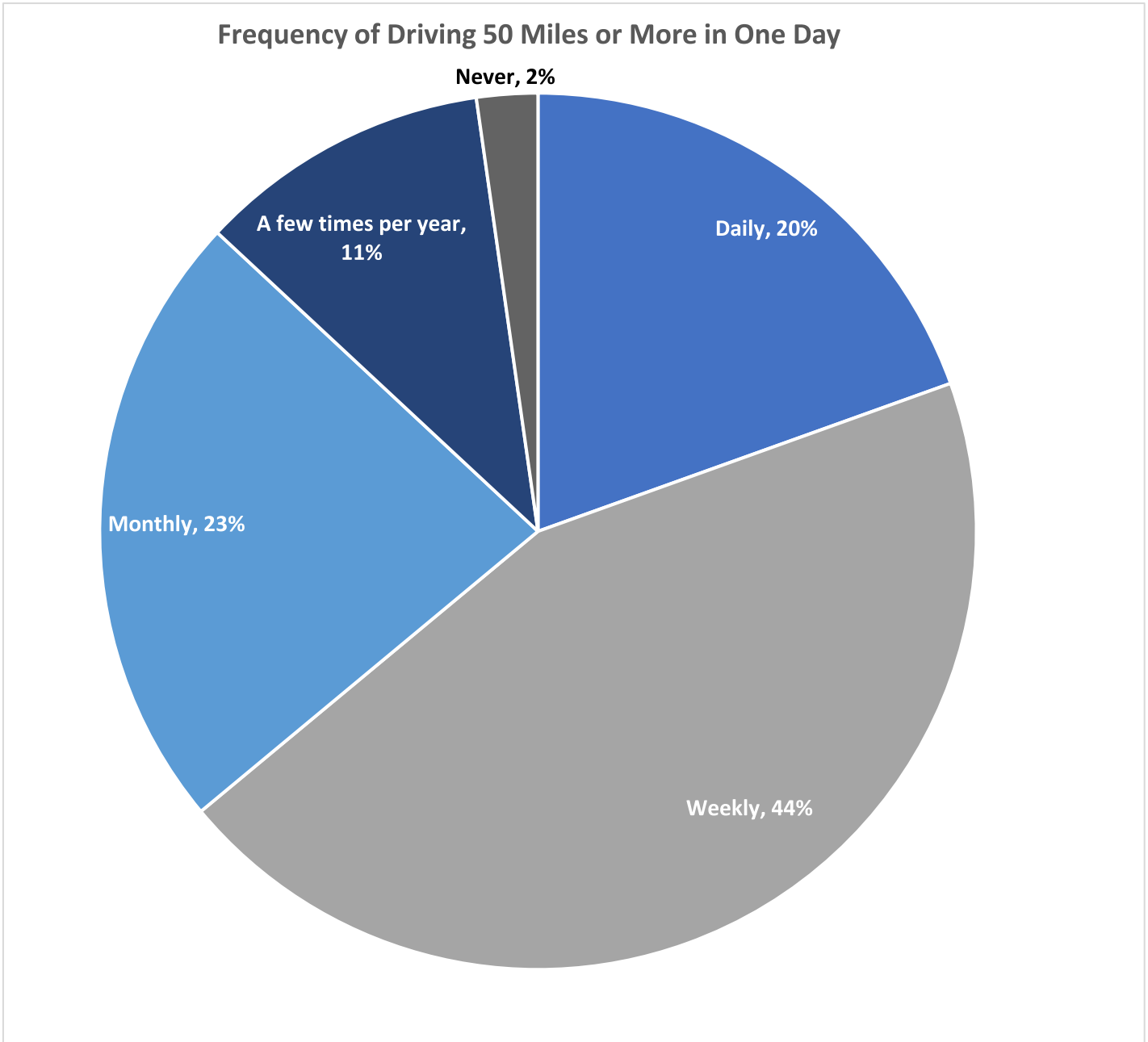
Most Important When Purchasing a Vehicle



Q23 asked of all respondent

Q23. Overall, considering all driving you do, how often would you say you drive more than 50 miles in a day?

Answer	percentage(%)	Count(N)
Daily	20%	130
Weekly	44%	296
Monthly	23%	153
A few times per year	11%	72
Never	2%	15
Total	100%	666



Appendix 4

Marketing Material: Customer Connections Article

Environmental Leadership: Daly Creek Work Offers a Look at Idaho Power's Commitment



Standing on the bank of Daly Creek, looking upstream to where the creek disappears beneath sun-dappled willows, it's hard to imagine the scene was dominated by heavy equipment, silt fences, and a flurry of human activity only months earlier.

This creek south of Richland, Oregon, is one example of Idaho Power's ongoing efforts to improve habitat on the 11,400 acres of the Daly Creek Habitat Management Area. The company bought this property in 2005 to compensate for impacts to wildlife habitat from the Hells Canyon Hydroelectric Project.

Today, this stretch of Daly Creek flows more like it did when the first European settlers homesteaded the area, drawn by the cool waters that irrigated crops and livestock in an otherwise dry and unforgiving landscape.

Back then, it was common for these hardscrabble settlers to use all the water in Daly Creek. The creek was reduced to little more than an irrigation ditch in some sections. In others, it became a watering hole for cattle. Overgrazing along the streambank when the heat of summer had parched the upland grasses occurred year after year, removing woody vegetation. These changes to the ecosystem and agricultural pressure all but eliminated beavers from the area. This ensured their dams and ponds did

not block irrigation diversions or flood agricultural land.

Over a century later, resource management has evolved. We now understand confining a creek to a narrow channel, removing trees and shrubs from the streambank, and diverting water until a creek runs dry harms fish and other water-dependent creatures such as frogs and beavers. Overgrazing cattle can damage native plants in the summer. When beavers are removed, creeks cut deep, unstable banks that don't support plants, allowing sediment to fall into the creek. The combined effect can raise water temperatures to a point where native species cannot survive.

Idaho Power's management at Daly Creek focuses on passive restoration: avoiding activities that cause damage and allowing natural systems to flourish. In 2007, Idaho Power began limiting cattle grazing to late winter through early spring. This has allowed native plants to recolonize the creek banks. Beavers have returned, and these furry engineers continue to expand their dams. In some areas, Daly Creek restoration has accelerated with the establishment of beaver ponds, likely benefitting both aquatic and terrestrial wildlife, such as native redband trout and waterfowl.

Our habitat managers are also exploring strategies to re-establish upland habitat

by combatting noxious weeds and planting vegetation that benefits wildlife and insects. Idaho Power has removed miles of internal fencing to allow wildlife to move more freely within the management area, while upgrading external fences to reduce trespassing by cattle. Water conservation measures include taking lands out of agricultural production, switching from flood irrigation to sprinklers, and replacing open ditch irrigation with a pressurized system. These steps have decreased water diversions from Daly Creek by an estimated 50 percent.

In 2016, Idaho Power removed the first of three old diversions on the creek, replacing it with a new modern diversion and screen that keeps fish from being carried into irrigation channels and prevents the creek from drying out. Last fall, the company removed the two remaining diversions, restoring the creek channel to a more natural condition and giving fish access to the full length of the creek.

Daly Creek may not be exactly as the settlers found it, but Idaho Power continues to restore this waterway and the land around it. Learn more at idahopower.com/habitat.

Tracking Sturgeon Success in the Snake River

Even creatures with a history dating back more than 100 million years can use a helping hand. White sturgeon in the Snake River get plenty of help from Idaho Power biologists, who track their numbers, add to their population and move adults into good spawning areas.

In Idaho, the two largest reproducing populations of white sturgeon are below Bliss and Hells Canyon dams. Sturgeon in these areas can live to be 100 years old, grow up to 10 feet long and weigh more than 300 pounds.

Idaho Power biologists collaborate with state and tribal fisheries managers to study, protect and enhance Snake River sturgeon populations. This includes population surveys. Biologists weigh and measure the fish, take tissue samples for genetic identification, and implant tiny electronic tags that researchers use to identify fish that have been previously captured. This enables biologists to track abundance, growth and survival rates, and other information.

The company also nets (and releases) tiny sturgeon during their first or second year of life to determine how much natural reproduction is taking place in key areas. The last two years, with ample snowpack and high river flows, have been good for sturgeon spawning according to Ken Lepla, Idaho Power's lead sturgeon biologist.



In areas of the Snake River where sturgeon populations are not self-supporting, Idaho Power works with Idaho Department of Fish and Game and the College of Southern Idaho (CSI) to raise sturgeon from naturally produced eggs and larvae. Collecting eggs and larvae directly from the river provides stockable offspring that are more genetically diverse and more similar to the wild population.

Egg mats are one tool used to collect eggs for the conservation program. Picture a 2-foot-square metal frame with a furnace filter in the middle. These mats are placed downstream of known spawning areas where they collect fertilized eggs. Biologists take the eggs to the CSI sturgeon hatchery in Twin Falls. The fish stay there for about a year until they are about a foot long and can be released back into the river. From there, Idaho Power biologists follow their progress in the wild to ensure fish are doing well.

Another important tactic is moving reproductive adult fish from below C.J. Strike Dam upstream to more favorable spawning habitat in the Bliss reach of the Snake River. Learn more at idahopower.com/fish.

Our Fleet is Going Electric – and You Can, Too

Imagine cutting your driving costs by half or more. You could save hundreds of dollars every year. It's possible when you switch to electric vehicles (EVs).

"You'll pay about 95 cents for enough electricity to drive as far as a gallon of gas will take you," said John Bernardo, Idaho Power's Sustainability Program Manager.

Those savings are one reason Idaho Power is replacing fuel-burning cars, trucks and forklifts with vehicles powered by electricity.

In 2018, Idaho Power added eight plug-in hybrid electric pickups and three electric passenger cars. We bought six electric forklifts in the past three years, and we plan to add four more in 2019. In the years to come, we'll continue our transition toward an electric fleet.

Besides saving money on fuel, we're seeing lower costs for maintenance, Bernardo said, because EVs have fewer than half as many mechanical parts as fuel-powered vehicles. And they don't need as many fluids, like engine oil or transmission fluid.

Idaho Power customers will benefit from these savings with lower electricity rates.

"We also are doing it to show our customers these things work; they're reliable, and it's a good idea to switch over," Bernardo said.

Another important benefit of EVs is that they don't produce tailpipe emissions, Idaho Power is sensitive to the impact its operations have on the environment, so reducing emissions, including carbon emissions, is important to us.

And because about half of Idaho Power's electricity comes from clean hydroelectric power, charging an electric vehicle is cleaner than driving a gas-powered car or truck. Learn more at idahopower.com/EV.



From The Electric Kitchen

February 2019

Mixed-up Cuban Beans and Rice

Dinner

3 Tbsp olive oil	2 cans low-sodium black beans
½ medium red onion, chopped	1 cup mango, cubed
1 large bell pepper, chopped	½ cup pineapple, chopped
1 tsp cumin	1 cup frozen, shelled edamame
¼ tsp oregano	1 cup brown, long-grain rice
2 cloves garlic, minced	Salt and pepper to taste
1 can fire-roasted diced tomatoes	Fresh cilantro, chopped

Dietary information:

Calories: **250**
Fat: **6.6g**
Carbohydrate: **36g**
Protein: **12.2g**
Sodium: **61mg**
Fiber: **10.4g**
Potassium: **558mg**

Cook rice according to package directions. In a large skillet, heat oil over medium. Add onion and bell pepper, sautéing until softened, approx. 7 minutes. Add cumin and garlic, cook and stir until very fragrant, approx. 5 min. Add tomatoes, beans, fruit and edamame. Bring to a simmer, cover and cook for 15 minutes, stirring occasionally. Season with salt, pepper and oregano. Serve ½ cup of rice with ¾ cup bean mixture. Top with cilantro. Makes approx. 8 servings.

Recipes are selected for nutritional value and low energy use in preparation. They are approved by Registered Dietitian Erin Green from the Central District Health Department in Boise.

Appendix 5

Marketing Materials: EV Bill Insert

Consider an Electric Vehicle (EV)

With prices among the lowest in the nation, record reliable service and clean-energy goals, Idaho Power proudly supports customer use of EVs.



WANT TO LEARN MORE?

- ✓ Calculate savings
- ✓ Compare cars
- ✓ Learn about Oregon tax credits and incentives
- ✓ Find charging stations
- ✓ Learn about providing charging stations at your business

Visit idahopower.com/EV

 **IDAHO POWER**®

An IDACORP Company

Why choose an EV?



Fuel Savings

Mile for mile, it **costs one-third to half** the amount to fuel an EV compared to a gas-powered vehicle.



Better Air Quality

With no tailpipe emissions, all-electric vehicles **don't contribute to air pollution.**



Less Maintenance

All-electric vehicles have fewer moving parts and fluids, resulting in **lower maintenance costs.**



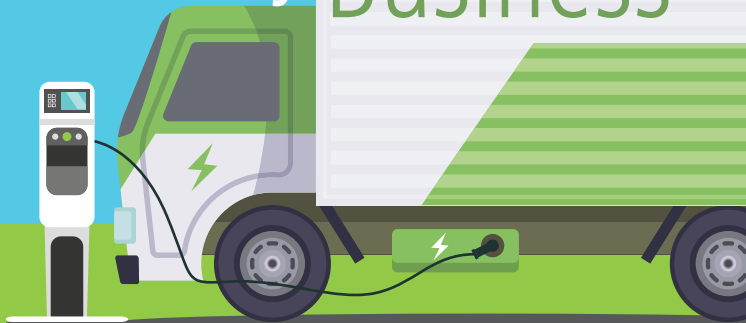
Performance

With instant acceleration, EVs are fun, quiet and **easy to drive.**

Appendix 6

Marketing Materials: EV Handout Card

EVs for EVERY Business



Visit idahopower.com/ev



- ✔ **Discover the benefits:** Fuel savings, fewer emissions, instant acceleration and a smooth ride.
- ✔ **Calculate your savings:** Mile for mile, it costs less to drive an EV.
- ✔ **Compare vehicles:** From buses, trucks and cars – find an EV with the range you need.
- ✔ **Find a charging station:** Locate a public charging station or learn about workplace or fleet charging.
- ✔ **Sign up for our EV network:** Join to hear about EV opportunities and news from Idaho Power.



Appendix 7

Marketing Materials: EV Press Release

From: Bowlin, Brad
Sent: Thursday, September 6, 2018 3:09 PM
To: Customer Contact List
Subject: FW: News Release: Electric Cars on Display in Boise; New Charging Station Online in Oregon
Attachments: ElectricCarNews.docx

The attached release went to Treasure Valley and eastern Oregon media outlets Thursday afternoon.

NEWS RELEASE

Electric Cars On Display in Boise; Advanced Electric Vehicle Charging Station Online in Huntington, Oregon

Electrify America has installed four chargers, including two state-of-the-art 350-kilowatt (kW) units, that will extend the range for EV drivers traveling on I-84 west of Boise.

BOISE, Idaho, September 6, 2018 — National Drive Electric Week rolls into the Treasure Valley Saturday, with electric cars on display at the Capitol from 10 a.m. to 12:30 p.m. The event comes on the heels of a new fast-charging station coming online along I-84 just west of the Idaho–Oregon border.

Idaho Power is a sponsor of the annual Drive Electric Week car show. We'll be at the Capitol to show off some of the electric vehicles (EVs) in our fleet and answer questions about electric cars and the future of electrified transportation.



Idaho Power also supplies electricity to the region's newest charging station, a state-of-the-art installation in Huntington, Oregon. Electrify America recently installed four chargers next to the town's lone gas pump at the T and T Country Store, 40 Washington St. West.

With a focus on both future and present-day EVs, Electrify America's charging systems range in power from 50 kW, the most commonly used fast chargers for EVs today, up to 350 kW. At 350 kW, these chargers deliver energy for up to 20 miles of range per minute, which is seven times faster than today's 50-kW DC chargers.

"The Electrify America fast chargers provide the latest in charging technology for EVs on the road today and the future models that will feature larger batteries," said Patti Best, Idaho Power Program Specialist. Idaho Power provides the electricity for the stations.

The new ultra-fast chargers come in several power options, starting at 50 kW. The Electrify America station offers connectors^[1], for all EVs, including all fast-charging capable cars. The station will charge up to four vehicles at one time.



“Huntington is an excellent spot due to its central location between Boise and Pendleton, Oregon. Visitors have a convenience store and a restaurant nearby where they can refuel themselves while their car is recharging,” said Brendan Jones, Chief Operating Officer of Electrify America. “We worked with Idaho Power to get connected into the electrical grid and ensure smooth operation. The company brought one of its own EVs out to test the equipment as well.”

Idaho Power’s Chevy Bolt is the newest in its growing fleet of electric vehicles. It has the longest range, at 238 miles, of the half-dozen all-electric EVs the company owns. With the swipe of a credit card, drivers of electric cars can roll into Huntington, hook up to the Electrify America station and start charging.

“We hope it will provide a great service to the community and increase people’s interest in zero-emissions vehicles,” Jones said.

“As the charging network grows, it creates an opportunity for more people to go electric for their transportation,” Best said. Idaho Power has worked with several businesses in its service area to install charging stations as more customers go electric.

“Expansion of a national network of fast-charging stations will help EVs evolve from being used primarily for local trips to vehicles that can be readily used over long distances,” Best said.

Media note: Photos and video of the new fast-charging station in Huntington, Oregon, are available upon request.

About Electrify America

Electrify America LLC, headquartered in Reston, Virginia, is investing \$2 billion over 10 years in Zero Emission Vehicle (ZEV) infrastructure, education and access. The investment will enable millions of Americans to discover the benefits of electric driving and support the build-out of a nationwide network of workplace, community and highway chargers that are convenient and reliable. For more information and to view the National and California ZEV investment plans, visit electrifyamerica.com.

About Idaho Power

Idaho Power, headquartered in Boise, Idaho, and locally operated since 1916, is an electric utility that employs approximately 2,000 people who serve more than 547,000 customers throughout a 24,000-square-mile area in southern Idaho and eastern Oregon. With 17 low-cost hydroelectric projects as the core of its diverse generation portfolio, Idaho Power’s residential, business and agricultural customers pay among the nation’s lowest rates for electricity. IDACORP Inc. (NYSE: IDA), Idaho Power’s independent publicly traded parent company, is also headquartered in Boise, Idaho. To learn more, visit idahopower.com or idacorpinc.com.

Contact: Brad Bowlin
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1-800-458-1443 media line

###

^[1] Connectors include CHAdeMO (50 kw) and CCS1 (150 kw up to 350 kw) versions. Tesla vehicles can charge using a CHAdeMO cable with an adaptor.

Appendix 8

Marketing Materials: Malheur County Fair EV Social Media Post



Idaho Power

Published by Melissa Thom · 5m ·



Come see us at the [Malheur County Fairgrounds](#) - now through Saturday! We'll be there with our electric Chevy Bolt (and will be eating ALL the fair food).



0
People reached

0
Engagements

-
Distribution score

Boost post

Appendix 9
Emissions

		Hydro	Coal ¹	Natural Gas ²	Unspecified ⁴
	MWh	5,802,241	2,980,808	2,777,957	2,674,219
	kWh	5,802,241,000	2,980,808,000	2,777,957,000	2,674,219,000
	% of Total	34.44%	17.69%	16.49%	15.87%
carbon monoxide (CO)	Avg. lb/kWh	0.00E+00	1.36E-03	3.41E-04	3.10E-04
nitrogen oxides (NOx)	Avg. lb/kWh	0.00E+00	1.87E-03	4.45E-04	4.13E-04
PM-2.5	Avg. lb/kWh	0.00E+00	1.26E-04	6.36E-05	4.62E-05
PM-10	Avg. lb/kWh	0.00E+00	1.68E-04	6.36E-05	5.00E-05
sulfur dioxide (SO2)	Avg. lb/kWh	0.00E+00	1.41E-03	5.66E-06	1.31E-04
volatile organic compounds (VOCs)	Avg. lb/kWh	0.00E+00	2.13E-05	2.02E-05	1.30E-05
total hydrocarbons (THC) = TOC	Avg. lb/kWh	0.00E+00	2.13E-05	1.06E-04	5.98E-05
1,3-butadiene	Avg. lb/kWh	0.00E+00	0.00E+00	4.14E-09	2.26E-09
acetaldehyde	Avg. lb/kWh	0.00E+00	1.47E-07	3.85E-07	2.24E-07
acrolein	Avg. lb/kWh	0.00E+00	8.54E-08	6.17E-08	4.14E-08
arsenic	Avg. lb/kWh	0.00E+00	9.78E-08	1.89E-09	9.92E-09
benzene	Avg. lb/kWh	0.00E+00	3.08E-07	1.16E-07	9.11E-08
chromium	Avg. lb/kWh	0.00E+00	7.36E-08	1.32E-08	1.39E-08
formaldehyde	Avg. lb/kWh	0.00E+00	5.70E-08	6.84E-06	3.74E-06
mercury	Avg. lb/kWh	0.00E+00	2.39E-08	2.46E-09	3.51E-09
naphthalene	Avg. lb/kWh	0.00E+00	4.61E-09	1.25E-08	7.25E-09
nickel	Avg. lb/kWh	0.00E+00	7.57E-08	1.98E-08	1.77E-08

Footnotes

- 1 Average lb/kWh emissions factor based on average of rates from Jim Bridger (L)
- 2 Average lb/kWh emissions factor based on average from IPC's Langley, Danskir
- 3 Uses the average emissions from NG plants.
- 4 Average lb/kWh emissions factor for unspecified purchases based on average c

	Avg. lb/kWh	Avg lbs./Year	Total lbs./Year
carbon monoxide (CO)	3.10E-04	1.19E+00	44
nitrogen oxides (NOx)	4.13E-04	1.59E+00	59
PM-2.5	4.62E-05	1.78E-01	7
PM-10	5.00E-05	1.92E-01	7
sulfur dioxide (SO2)	1.31E-04	5.04E-01	19
volatile organic compounds (VOCs)	1.30E-05	5.00E-02	2
total hydrocarbons (THC) = TOC	5.98E-05	2.30E-01	9
1,3-butadiene	2.26E-09	8.71E-06	0
acetaldehyde	2.24E-07	8.61E-04	0
acrolein	4.14E-08	1.59E-04	0
arsenic	9.92E-09	3.82E-05	0
benzene	9.11E-08	3.51E-04	0
chromium	1.39E-08	5.36E-05	0
formaldehyde	3.74E-06	1.44E-02	1
mercury	3.51E-09	1.35E-05	0
naphthalene	7.25E-09	2.79E-05	0
nickel	1.77E-08	6.82E-05	0

Footnotes

- 1 Average miles/vehicle per year in 2022: Oregon 11,556
- 2 Average miles/KWh: 3
- 3 Number of BEVs: 37

Generation/Purchases by Fuel Type

Wind	Solar	Landfill Gas ³	Waste Heat ³	Wood Residual ³	Methane ³	Diesel ³
1,735,174	728,471	65,661	61,912	19,785	1,672	26
1,735,174,000	728,471,000	65,661,000	61,912,000	19,785,000	1,672,000	26,000
10.30%	4.32%	0.39%	0.37%	0.12%	0.01%	0.00%
0.00E+00	0.00E+00	3.41E-04	3.41E-04	3.41E-04	3.41E-04	3.41E-04
0.00E+00	0.00E+00	4.45E-04	4.45E-04	4.45E-04	4.45E-04	4.45E-04
0.00E+00	0.00E+00	6.36E-05	6.36E-05	6.36E-05	6.36E-05	6.36E-05
0.00E+00	0.00E+00	6.36E-05	6.36E-05	6.36E-05	6.36E-05	6.36E-05
0.00E+00	0.00E+00	5.66E-06	5.66E-06	5.66E-06	5.66E-06	5.66E-06
0.00E+00	0.00E+00	2.02E-05	2.02E-05	2.02E-05	2.02E-05	2.02E-05
0.00E+00	0.00E+00	1.06E-04	1.06E-04	1.06E-04	1.06E-04	1.06E-04
0.00E+00	0.00E+00	4.14E-09	4.14E-09	4.14E-09	4.14E-09	4.14E-09
0.00E+00	0.00E+00	3.85E-07	3.85E-07	3.85E-07	3.85E-07	3.85E-07
0.00E+00	0.00E+00	6.17E-08	6.17E-08	6.17E-08	6.17E-08	6.17E-08
0.00E+00	0.00E+00	1.89E-09	1.89E-09	1.89E-09	1.89E-09	1.89E-09
0.00E+00	0.00E+00	1.16E-07	1.16E-07	1.16E-07	1.16E-07	1.16E-07
0.00E+00	0.00E+00	1.32E-08	1.32E-08	1.32E-08	1.32E-08	1.32E-08
0.00E+00	0.00E+00	6.84E-06	6.84E-06	6.84E-06	6.84E-06	6.84E-06
0.00E+00	0.00E+00	2.46E-09	2.46E-09	2.46E-09	2.46E-09	2.46E-09
0.00E+00	0.00E+00	1.25E-08	1.25E-08	1.25E-08	1.25E-08	1.25E-08
0.00E+00	0.00E+00	1.98E-08	1.98E-08	1.98E-08	1.98E-08	1.98E-08

Units 1-4) and N. Valmy (Unit 2) coal plants
 1 and Bennett Mountain NG plants

of all resource mix.

	Grams/Mile	Grams/Year	Total lbs./Year
Total Hydrocarbons (HC)	0.251	2901	237
Exhaust CO	3.812	44051	3593
Exhaust NOx	0.157	1814	148
Exhaust PM2.5	0.004	46	4

Footnotes

1 Emissions from Light Duty Vehicle: <https://www.bts.gov/cc>

2 Pounds/Gram: 0.00220462

Geothermal	SUM ALL		
276	16,848,202		
276,000	16,848,202,000		
0.00%	100.00%		
0.00E+00	3.10E-04	Avg. lb/kWh	carbon monoxide (CO)
0.00E+00	4.13E-04	Avg. lb/kWh	nitrogen oxides (NOx)
0.00E+00	4.62E-05	Avg. lb/kWh	PM-2.5
0.00E+00	5.00E-05	Avg. lb/kWh	PM-10
0.00E+00	1.31E-04	Avg. lb/kWh	sulfur dioxide (SO2)
0.00E+00	1.30E-05	Avg. lb/kWh	volatile organic compounds (VOCs)
0.00E+00	5.98E-05	Avg. lb/kWh	total hydrocarbons (THC) = TOC
0.00E+00	2.26E-09	Avg. lb/kWh	1,3-butadiene
0.00E+00	2.24E-07	Avg. lb/kWh	acetaldehyde
0.00E+00	4.14E-08	Avg. lb/kWh	acrolein
0.00E+00	9.92E-09	Avg. lb/kWh	arsenic
0.00E+00	9.11E-08	Avg. lb/kWh	benzene
0.00E+00	1.39E-08	Avg. lb/kWh	chromium
0.00E+00	3.74E-06	Avg. lb/kWh	formaldehyde
0.00E+00	3.51E-09	Avg. lb/kWh	mercury
0.00E+00	7.25E-09	Avg. lb/kWh	naphthalene
0.00E+00	1.77E-08	Avg. lb/kWh	nickel

content/estimated-national-average-vehicle-emissions-rates-vehicle-vehicle-type-using-gasoline-and

1 **CERTIFICATE OF SERVICE**

2 **UM 2035**

3 I hereby certify that on March 10, 2023, I served a true and correct copy of Idaho
4 Power Company's 2023-2025 Transportation Electrification Plan, by e-mail to said
5 person(s) as indicated below.

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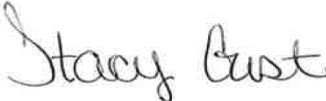
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DATED: March 10, 2023.



Stacy Gust, Regulatory Administrative Assistant