Electric Vehicle Survey Methodology and Assumptions

American Driving Habits, Vehicle Needs, and Attitudes toward Electric Vehicles

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Union of Concerned Scientists

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Electric Vehicle Survey Methodology and Assumptions

The Union of Concerned Scientists (UCS) and Consumer Reports (CR) commissioned a telephone survey to estimate the current suitability of plug-in electric vehicles (EVs) for personal transportation in the United States and to evaluate public opinion of EV options.

Summary

Our analysis indicates that a large fraction (42 percent) of households with vehicles could potentially use these types of EVs currently on the market. The analysis used self-reported driving and parking behavior questions and did not attempt to assess the economic feasibility of EV purchase or use. However, these results are a useful estimate of the number of households that have vehicle parking with access to electricity and could utilize an EV without modifying current driving habits.

Our study also examined the potential for use of battery electric vehicles (BEV), which use only electricity and found that 22 percent of households could potentially change to a BEV with an effective range of as low as 60 miles with few if any changes in their driving behavior. If all of the households that could potentially use an EV had one today, we would avoid 60 million metric tons of carbon dioxide emissions and save 12 billion gallons of gasoline each year.

A clear majority (65 percent) of Americans agreed with the statement "Plug-in electric vehicles are an essential part of our nation's transportation future for reducing oil use and global warming pollution," showing that most of the country recognizes that EVs are needed to reduce pollution, curb climate change, and reduce oil use. In addition, 60 percent of respondents said they would consider buying an EV, a remarkable statistic considering EVs are a relatively new technology. Overall, this survey demonstrates that EVs can work for many Americans and are perceived as necessary for meeting our nation's climate and energy goals.

Survey Methodology

Telephone surveys utilizing a random probability sample of telephone households were conducted among 1,004 adults (501 men and 503 women) 18 years of age and older to assess their driving behaviors, needs, and attitudes regarding EVs. A total of 652 landline and 352 cell phone interviews were conducted. After weighting, 914 respondents had at least one vehicle and were surveyed on driving and parking behaviors. All respondents were asked about attitudes toward EVs. Interviewing took place between September 26 and September 30, 2013.

The margin of error is +/- 3.1 percentage points at a 95 percent confidence level for questions asked of all respondents and +/- 3.2 percentage points for questions applied to vehicle owners. The questionnaire was fielded via ORC International's CARAVAN weekly national telephone omnibus survey. ORC used iterative proportional fitting (raking) to calibrate the completed interviews to the US Census Bureau's Current Population Survey for age, gender, ethnicity, geographic region, and education. All results shown in this document are results using the calibrated (weighted) responses.

METHODOLOGY STATEMENT FOR PUBLIC RELEASE

The results of this study are intended for external communications. The methodology statement for public release is: "The Union of Concerned Scientists and Consumer Reports conducted a telephone survey of a nationally representative probability sample of telephone households. A total of 652 landline and 352 cell phone interviews were completed among adults aged 18+. Interviewing took place between September 26 and September 30, 2013.

Plug-in Electric Vehicle Criteria

To evaluate whether a respondent could utilize the technical capabilities of current plug-in EVs, we examined whether respondent's answers met three criteria designed to match the capabilities of current plug-in hybrid electric vehicles (PHEVs). Because PHEVs have the same range limitations as gasoline-only vehicles, these criteria are less stringent than those used for determining battery electric vehicle suitability. Only those who met all three of the following criteria were categorized as possible candidates for using a PHEV.

1. **Have off-street parking with access to an electrical outlet or plug-in electric vehicle charger at home AND/OR have access to charging at their weekday destination (work, school, etc).** The survey asked about the presence of electrical outlets without attempting to determine voltage or current limitations. We assume that having an electrical outlet indicates either existing capability or ability to upgrade to sufficient capacity for vehicle charging.
2. **Do not currently need a vehicle with hauling or towing capacity (when asking about the vehicle respondent currently drives most frequently).** Current EVs do not have towing or significant hauling capacity. Future EVs will likely have this capability, but our analysis was limited to current availability.
3. **Do not need to carry more than four additional passengers (five total occupants) on a regular basis.** Most EVs have five seats, though the Chevrolet Volt has four and the Tesla Model S can be configured as a seven passenger vehicle.

PLUG-IN HYBRID ELECTRIC VEHICLE CRITERIA: CHARGING ACCESS

Fifty-two percent of respondents (that gave a valid response) have private, off-street parking with access to an electrical outlet or plug-in electric vehicle charger.

TABLE 1. PLUG-IN HYBRID ELECTRIC VEHICLE CRITERIA: CHARGING ACCESS AT HOME

Q: HOW WOULD YOU DESCRIBE YOUR CURRENT PARKING SITUATION AT HOME? WOULD YOU SAY…(ASKED TO THOSE RESPONDENTS WITH AT LEAST ONE VEHICLE)

Off-street (net)	84%
Private off-street parking such as a garage or dedicated spot, WITH ACCESS to an electrical outlet or plug-in electric vehicle charger.	52%
Private off-street parking WITHOUT ACCESS to an electrical outlet	27%
Private off-street parking, but you DON'T KNOW if there is an outlet or not	5%
Public or on-street parking	12%
Other	2%
Don't know	1%
Refused	<1%

Fourteen percent of respondents have access to recharge a plug-in electric vehicle at their workplace, school or other weekday destination, and 4 percent reported workplace charging without charging access at home. Workplace or destination charging can allow drivers to have a PHEV without home charging and also increases the electric drive range of all EVs.

TABLE 2. PLUG-IN HYBRID ELECTRIC VEHICLE CRITERIA: CHARGING ACCESS AWAY FROM HOME

Q: DO YOU CURRENTLY HAVE ACCESS TO RECHARGE A PLUG-IN ELECTRIC VEHICLE AT YOUR WORKPLACE, SCHOOL, OR OTHER WEEKDAY DESTINATION?

Yes	14%
No	82%
Don't know	4%

Respondents in single family housing were much more likely than those in multi-unit dwellings to report home access to charging with 61 percent of single family homes reporting access compared to 27 percent of those in multi-unit dwellings. Improved access to public and workplace charging would increase the ability for the 48 percent without access to home charging to use PHEVs. In addition, policies that address charging for those in multi-unit dwellings are important to increase the number of households that could use plug-in electric vehicles.

TABLE 3. PLUG-IN HYBRID ELECTRIC VEHICLE CRITERIA: CHARGING ACCESS & HOUSING TYPE

		Apartments, Duplex, Other Multi-unit	Single Family Home	Grand Total
Answered "Yes" to Home Charging Access	No Work Charging Access	18% (44 responses)	50% (335 responses)	**42%** **(378** responses**)**
	Work Charging Access	9% (23 responses)	11% (76 responses)	**11%** **(99** responses**)**
Answered "No" to Home Charging Access	No Work Charging Access	68% (169 responses)	35% (230 responses)	**44%** **(399** responses**)**
	Work Charging Access	5% (11 responses)	3% (22 responses)	**4%** **(34** responses**)**
Totals		100% (247 responses)	100% (663 responses)	**100%** **(910** responses**)**

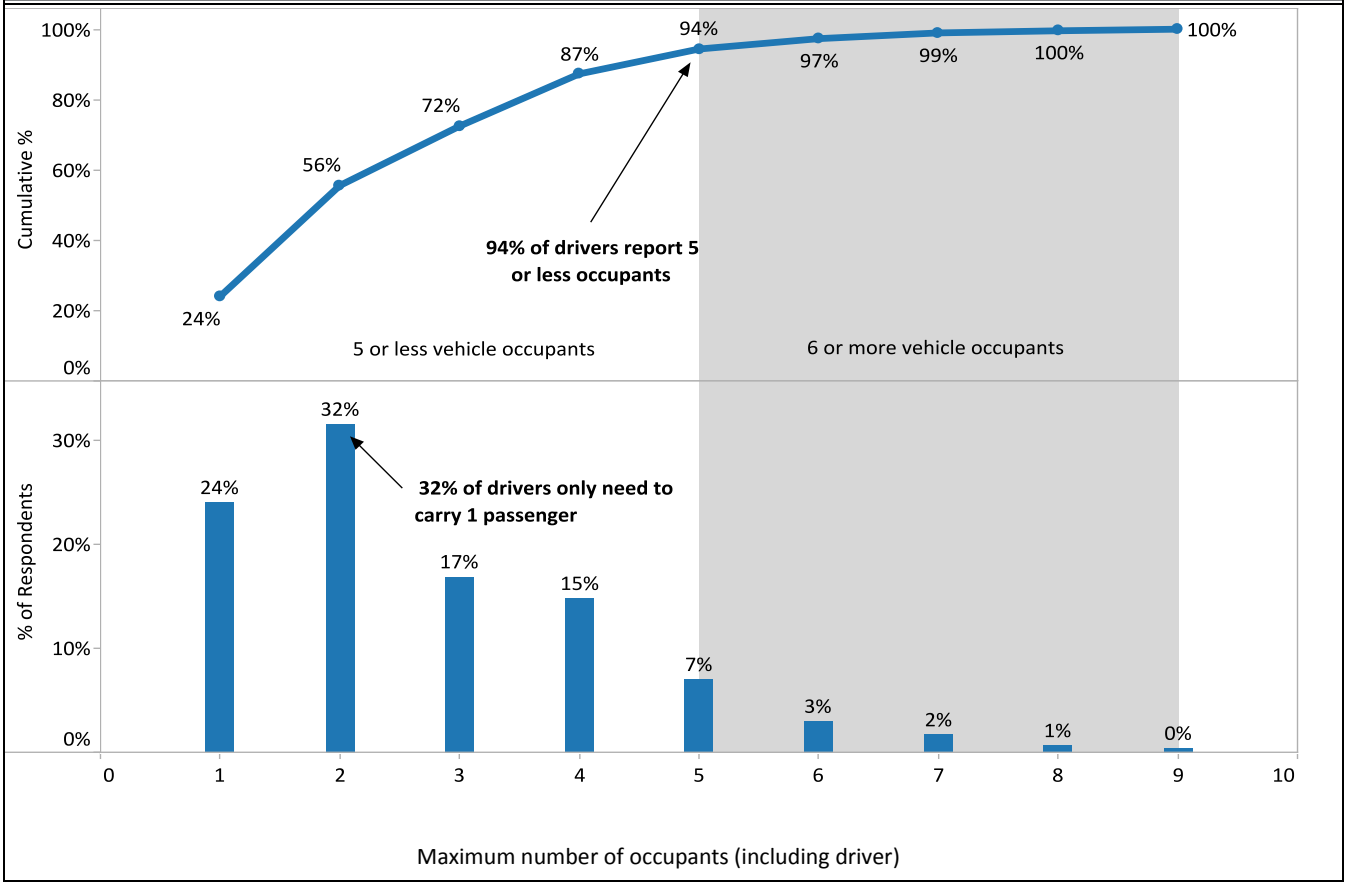
PLUG-IN HYBRID ELECTRIC VEHICLE CRITERIA: PASSENGER NEEDS

In a typical week, 94 percent of respondents need to carry four or fewer passengers in the vehicle they drive the most often. A majority (56 percent) of people reported one or two occupants in the car. Most people's passenger needs can be met by today's plug-in electric vehicles.

TABLE 4. PLUG-IN HYBRID ELECTRIC VEHICLE CRITERIA: PASSENGER NEEDS

Q: IN A TYPICAL WEEK, WHAT IS THE HIGHEST NUMBER OF OCCUPANTS, INCLUDING YOURSELF, YOU NEED TO FIT IN THE VEHICLE YOU DRIVE MOST OFTEN? (ASKED TO RESPONDENTS WITH AT LEAST ONE VEHICLE)	
1	24%
2	31%
3	17%
4	15%
5	7%
6 or more	5%
Don't know	2%
Refused	<1%
Mean	2.7
Standard deviation	1.57
Standard error	0.05

FIGURE 1. **Plug-in hybrid electric vehicle criteria: passenger needs**



PLUG-IN HYBRID ELECTRIC VEHICLE CRITERIA: HAULING OR TOWING NEEDS

Seventy-eight percent of respondents do not need the vehicle they drive the most often to have hauling or towing capacity. While future plug-in vehicles may have the ability to tow or haul, today's vehicles to not have this capability.

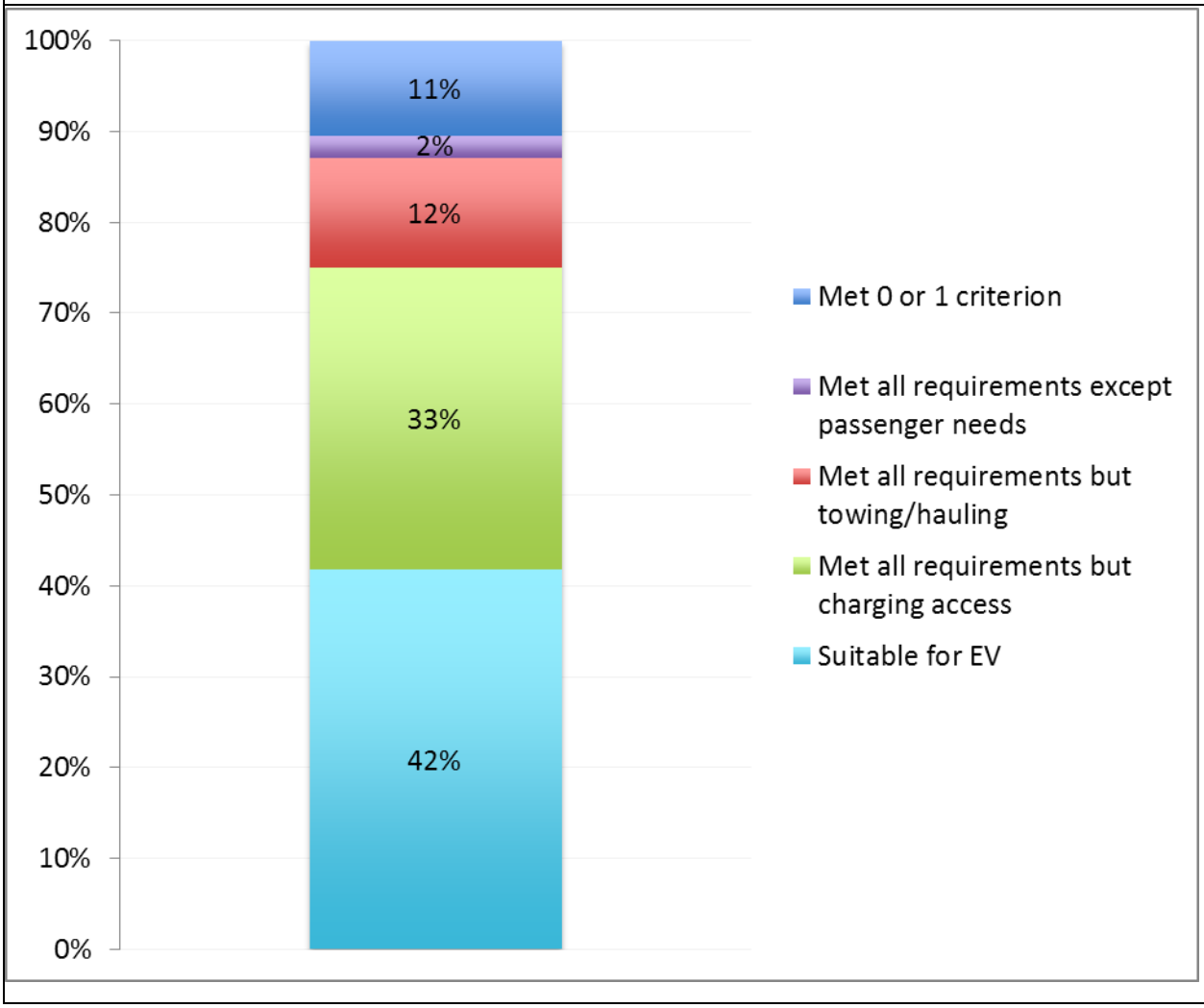
TABLE 5. PLUG-IN HYBRID ELECTRIC VEHICLE CRITERIA: HAULING OR TOWING NEEDS

Q: FOR THE VEHICLE YOU DRIVE MOST OFTEN, DOES IT NEED TO HAVE HAULING OR TOWING CAPACITY?	
Yes	19%
No	78%
Don't know	2%
Refused	<1%

PLUG-IN HYBRID ELECTRIC VEHICLE CRITERIA SUMMARY

Overall, **42 percent of respondents met all three criteria and therefore could potentially utilize a PHEV today**. Our survey did not assess whether the electrical connection at the parking spot would be sufficient for all plug-in vehicles, therefore some respondents who reported charging access may not be capable of using all types of plug-in vehicles. For PHEV eligibility, public or workplace charging access was included as sufficient for PHEV usage. An additional 33 percent of respondents met the hauling and passenger requirements for PHEV eligibility and therefore are a "plug away" from being able to use a PHEV. Access to parking with an electrical outlet was the most common impediment to EV suitability and adding capability for both home and workplace charging is the largest opportunity to increase potential plug-in vehicle market. Also, access to charging is independent of vehicle capability and thus does not require advances in vehicle technology to increase the number of households that could use a PHEV.

FIGURE 2. **Plug-in hybrid electric vehicle criteria summary**



Battery Electric Vehicle Criteria

Among those who had access to a plug and could use a plug-in electric vehicle such as a plug-in hybrid, we examined whether respondent's met the following five criteria to evaluate whether a respondent could utilize the technical capabilities of current battery electric vehicles (BEVs):

1. **Have off-street parking with access to an electrical outlet or plug-in electric vehicle charger at home.***
2. **Do not need a vehicle with hauling or towing capacity.***
3. **Do not need to carry more than 4 additional passengers on a regular basis.***
4. **Drive less than 60 miles on a weekday, including commuting and other errands.** Drivers were asked both their average driving distance and variability of their daily trip. The maximum weekday driving distance was calculated as the sum of the average driving distance and variance reported.
5. **Drive distances of 60 miles or more on weekends or holidays no more than five times a year.**

*Same as PHEV criteria

For households with more than one vehicle, the weekend/holiday driving distance criterion was not used. Though the estimated range of all BEVs extends beyond 60 miles, to be conservative, we capped the suitable average daily driving distance at 60 miles each day to match the range of the Nissan LEAF with a reduction to account for weather and other factors that can reduce useable driving range. If access to charging at both home and work or school was reported, a weekday mileage of 100 miles or less per day was used.

BATTERY ELECTRIC VEHICLE CRITERIA: ADDITIONAL VEHICLES

Sixty-four percent of respondents have multiple vehicles in their household. While multiple vehicles are not a prerequisite for a household to use a plug-in vehicle, having multiple vehicles increases the likelihood that a household could use a BEV and meet their transportation needs since the BEV would not need to be capable for meeting all transportation needs.

TABLE 6. BATTERY ELECTRIC VEHICLE CRITERIA: ADDITIONAL VEHICLES

Q: HOW MANY VEHICLES ARE THERE IN YOUR HOUSEHOLD?	
0	7%
1	28%
2	36%
3	15%
4	8%
5	2%
6	3%
Refused	<1%

BATTERY ELECTRIC VEHICLE CRITERIA: WEEKEND AND HOLIDAY TRAVEL

Eighty percent of respondents need a vehicle for weekend or holiday travel exceeding 60 miles in a day. However, only 35 percent reported more than five such trips a year. Long distance weekend travel affects the ability for single vehicle households to use a BEV. For fewer than six trips a year; it is assumed that other options such as car sharing or rentals could be used. Respondents with multiple vehicles reported taking more long weekend trips than households with one vehicle.

TABLE 7. BATTERY ELECTRIC VEHICLE CRITERIA: WEEKEND AND HOLIDAY TRAVEL

Q: HOW OFTEN DO YOU NEED A VEHICLE FOR WEEKEND OR HOLIDAY TRAVEL EXCEEDING 60 MILES IN A DAY? WOULD YOU SAY…

0 times per year	17%
Ever (Net)	80%
1-5 times per year (Subnet)	45%
1-2 times per year	25%
3-5 times per year	20%
6 times per year or more (Subnet)	35%
6-11 times per year	12%
Don't know	3%
Refused	1%

TABLE 8. BATTERY ELECTRIC VEHICLE CRITERIA: WEEKEND AND HOLIDAY TRAVEL & MULTIPLE VEHICLES

	Single Vehicle	Multiple Vehicles
5 or less long weekend trips per year	81%	60%
	(294) responses	(358) responses
6 or more long weekend trips per year	19%	40%
	(67) responses	(285) responses

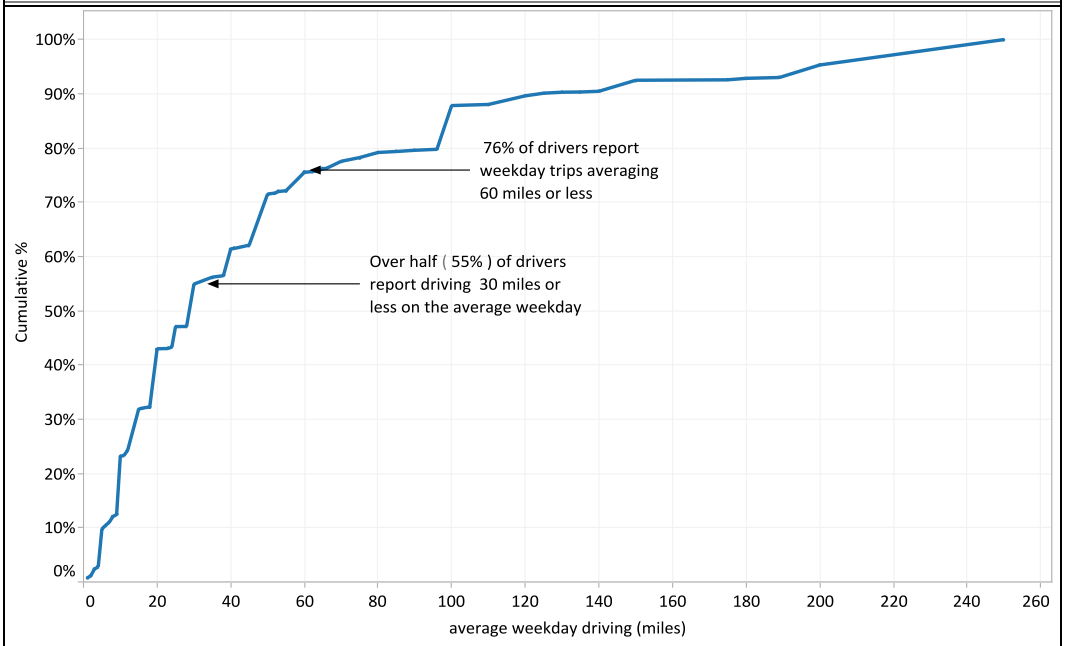
BATTERY ELECTRIC VEHICLE CRITERIA: AVERAGE DAILY DRIVING

The daily driving distance required is an important consideration for the use of a BEV. Over half of all respondents giving a valid answer have weekday driving distance of 30 miles per day or less and 76 percent report 60 miles or less.

TABLE 9. BATTERY ELECTRIC VEHICLE CRITERIA: AVERAGE DAILY DRIVING

Q: APPROXIMATELY HOW MANY MILES DO YOU DRIVE ON AN AVERAGE WEEKDAY, INCLUDING COMMUTING AND OTHER ERRANDS?	
0-4	14%
5-9	8%
10-14	10%
15-19	7%
20-24	9%
25-29	3%
30-39	8%
40-49	5%
50-59	8%
60-69	3%
70-79	2%
80-89	1%
90-99	0%
100-249	13%
249 and higher	4%
Don't know	5%
Refused	1%
Mean (including 0)	51
Standard Deviation (including 0)	61
Standard Error (Including 0)	2
Mean (Excluding 0)	53
Standard Deviation (Excluding 0)	61
Standard Error (Excluding 0)	2

FIGURE 3. **Battery electric vehicle criteria: average daily driving**



BATTERY ELECTRIC VEHICLE CRITERIA: AVERAGE DAILY DRIVING VARIANCE

Weekday driving does not always remain constant and respondents were asked how much their weekday driving typically varies. Fifty-one percent reported a weekday driving distance that did not vary. Low variance in weekday driving should make choosing an EV easier and allow consumers to better estimate the usefulness of the electric range of PHEVs

TABLE 10. BATTERY ELECTRIC VEHICLE CRITERIA: AVERAGE DAILY DRIVING VARIANCE

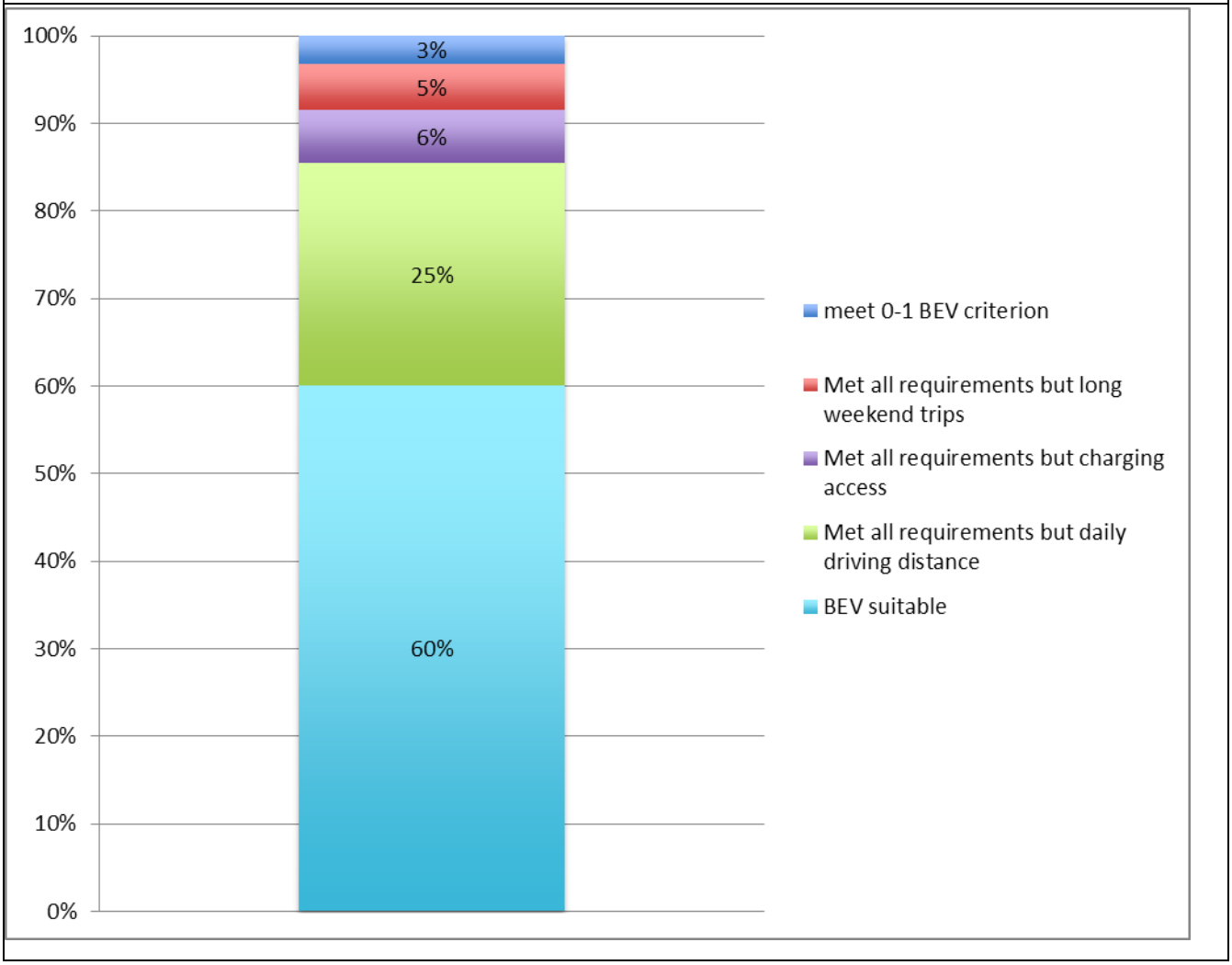
Q: DOES YOUR WEEKDAY DRIVING TYPICALLY…	
Remain the same each day because your commute does not change	51%
Commute changes (Net)	46%
20 miles or less (Subnet)	28%
Vary up to 10 miles each day	17%
Vary 11-20 miles each day	11%
More than 20 miles (Subnet)	17%
Vary 21-30 miles each day	8%
Vary 31-40 miles each day	2%
Vary more than 40 miles each day	7%
Don't know	2%
Refused	1%

To estimate a maximum weekday driving distance, the highest value in the variance range response was added to the average weekday driving response. For example, if the response for the average weekday driving distance was 30 miles and variance was reported as "vary 11-20 miles each day", the maximum weekday trip was calculated as 50 miles (30 mile average trip plus 20 miles variance). For responses of "over 40 miles," 100 miles were added to the average weekday driving distance. **Using this method, 69 percent of drivers reported 60 miles or less for their maximum weekday driving distance.**

BATTERY ELECTRIC VEHICLE CRITERIA SUMMARY

Overall, 60 percent of the respondents that met the PHEV criteria also met the five criteria for BEV eligibility, or 25 percent of the overall respondents with vehicles. The most common reason for not meeting the BEV requirements (while meeting PHEV requirements) was exceeding the 60 mile maximum weekday driving distance criterion

FIGURE #4. **Battery electric vehicle criteria summary**



Additional Data Tables and Questions from Survey

In addition to obtaining data on respondents' driving habits and transportation needs, the survey also quantified respondents' attitudes and knowledge of EVs more generally. The tables below capture the results of these questions.

Forty-five percent of respondent's agreed that they are knowledgeable about plug-in electric vehicles.

TABLE 11. ADDITIONAL DATA: KNOWLEDGE TOWARD EVS

Q: I AM KNOWLEDGEABLE ABOUT PLUG-IN ELECTRIC VEHICLES, LIKE THE CHEVY VOLT, NISSAN LEAF, OR TESLA MODEL S	
Agree (Net)	45%
Strongly agree	16%
Somewhat agree	28%
Disagree (Net)	40%
Somewhat disagree	14%
Strongly agree	26%
Neither agree nor disagree	11%
Don't know	5%
Refused	<1%

Forty percent of respondent's agree that they would pay more to purchase a plug-in electric vehicle if they could recover the additional cost through lower fuel costs within five years.

TABLE 12. ADDITIONAL DATA: FUEL COST RECOVERY AND WILLINGNESS TO PURCHASE AN EV

Q: I WOULD BE WILLING TO PAY MORE TO PURCHASE A PLUG-IN ELECTRIC VEHICLE IF I COULD RECOVER THE ADDITIONAL COST THROUGH LOWER FUEL COSTS WITHIN 5 YEARS	
Agree (Net)	40%
Strongly agree	19%
Somewhat agree	21%
Disagree (Net)	48%
Somewhat disagree	15%
Strongly disagree	33%
Neither agree nor disagree	10%
Don't know	2%
Refused	<1%

Thirty-seven percent of respondent's agree that having access to plug-in electric vehicle charging at work would increase the likelihood of considering a plug-in electric vehicle in their next vehicle purchase.

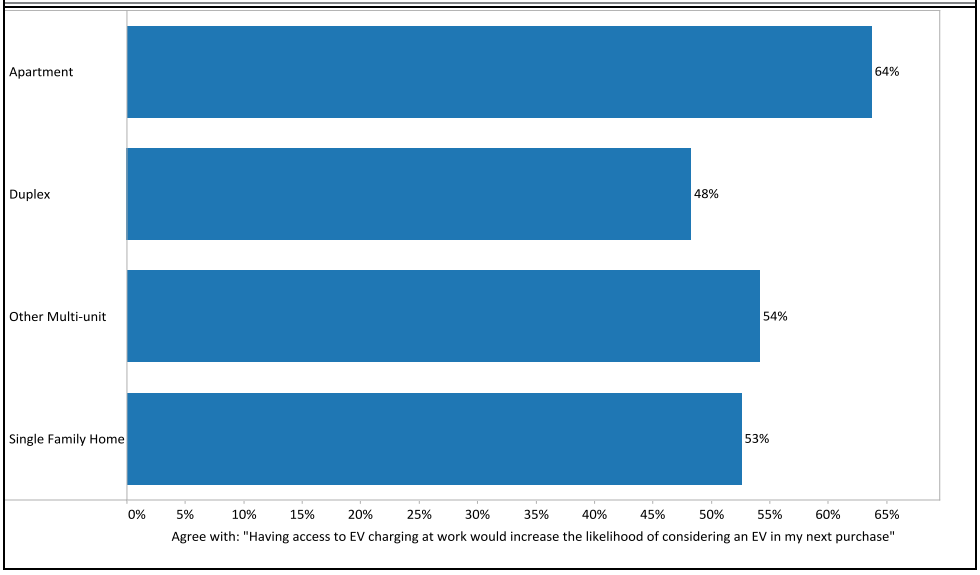
TABLE 13. ADDITIONAL DATA: EFFECT OF WORKPLACE CHARGING ACCESS

Q: HAVING ACCESS TO PLUG-IN ELECTRIC VEHICLE CHARGING AT WORK WOULD INCREASE THE LIKELIHOOD OF CONSIDERING A PLUG-IN ELECTRIC VEHICLE IN MY NEXT PURCHASE

Agree (Net)	37%
Strongly agree	19%
Somewhat agree	18%
Disagree (Net)	48%
Somewhat disagree	12%
Strongly agree	36%
Neither agree nor disagree	9%
Not applicable	3%
Don't know	2%
Refused	<1%

For those that responded that they would consider an EV for their next purchase, over half said that workplace charging would increase the likelihood of considering purchasing an EV. For those that live in apartments, almost 65 percent said workplace charging would increase the likelihood of purchasing an EV.

FIGURE #5. **Effect of workplace charging access on likelihood of considering an EV for future purchase**



Sixty-five percent of respondents agree that plug-in electric vehicles are an essential part of our nation's transportation future for reducing oil use and global warming pollution.

TABLE 14. ADDITIONAL DATA: WHETHER EVS ARE AN ESSENTIAL PART OF OUR TRANSPORTATION FUTURE

Q: PLUG-IN VEHICLES ARE AN ESSENTIAL PART OF OUR NATION'S TRANSPORTATION FUTURE FOR REDUCING OIL USE AND GLOBAL WARMING POLLUTION	
Agree (Net)	65%
Strongly agree	40%
Somewhat agree	25%
Disagree (Net)	23%
Somewhat disagree	7%
Strongly agree	17%
Neither agree nor disagree	9%
Don't know	3%
Refused	<1%

Forty-six percent of respondent's agree that a plug-in electric vehicle could fit their household's transportation needs.

TABLE 15. ADDITIONAL DATA: WHETHER AN EV COULD FIT HOUSEHOLD TRANSPORTATION NEEDS

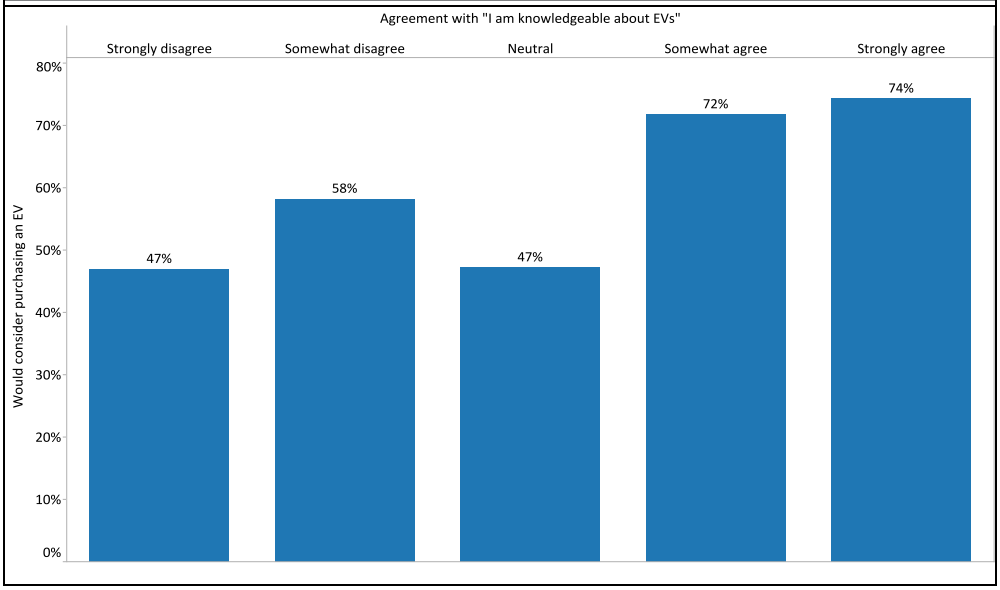
Q: I THINK A PLUG-IN ELECTRIC VEHICLE COULD FIT MY HOUSEHOLD'S TRANSPORTATION NEEDS	
Agree (Net)	46%
Strongly agree	21%
Somewhat agree	25%
Disagree (Net)	44%
Somewhat disagree	14%
Strongly agree	31%
Neither agree nor disagree	7%
Don't know	2%
Refused	<1%

Sixty percent of respondent's would consider buying a plug-in electric vehicle.

TABLE 16. ADDITIONAL DATA: WHETHER RESPONDENT WOULD CONSIDER PURCHASING EV

Q: WHICH OF THE FOLLOWING ARE TRUE FOR YOU (CHOOSE ALL THAT APPLY)	
Would consider buying an EV and/or already have an EV	60%
Would consider buying an EV (answered yes to one or both of the statements below)	60%
You would consider buying a plug-in BATTERY electric vehicle that USES ONLY ELECTRICITY, like the Nissan LEAF or the Tesla Model S	32%
You would consider buying a plug-in ELECTRIC vehicle that USES BOTH ELECTRICITY AND GASOLINE, like the Chevy Volt	56%
Already own an EV (answered yes to one or both the statements below)	3%
You already own a plug-in BATTERY electric vehicle that USES ONLY ELECTRICITY	3%
You already own a plug-in ELECTRIC vehicle that USES BOTH ELECTRICITY AND GASOLINE	2%
None of these – I would not consider buying nor already own these vehicles	38%
Don't know	1%
Refused	<1%

FIGURE6. **Willingness to consider purchasing an EV and knowledge toward EVs**

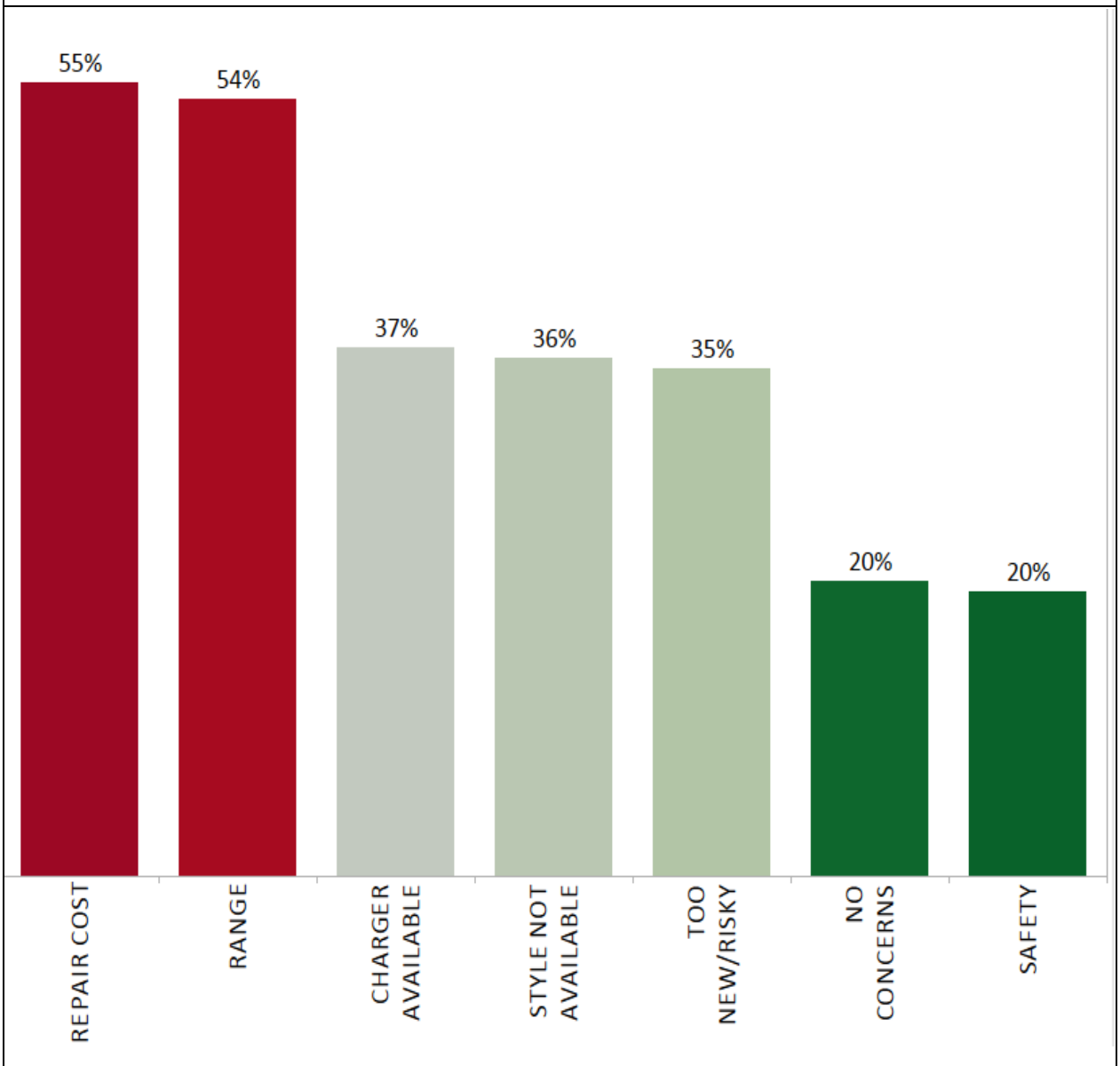


Moreover, there is a correlation between self-reported EV knowledge and the willingness to consider purchasing an EV. More than 70 percent of respondents who reported that they are knowledgeable about EVs would consider purchasing one.

CONCERNS TOWARD EVS

Twenty percent of respondents had no major concerns about owning a plug-in electric vehicle, assuming the cost to purchase one was comparable to a gasoline-only vehicle. Repair costs and the vehicle range were tied for the top concern.

FIGURE 7. **Concerns toward electric vehicles.**



Benefits Calculations

The fuel savings and emissions benefit calculations were based on a comparison of the average new 2012 gasoline-powered small vehicle, a Ford Fusion Energi PHEV, and a Nissan LEAF BEV. The average new small vehicle was estimated by EPA to achieve 28.8 miles per gallon (mpg).[1] Government ratings of the 2013 Ford Fusion Energi give a 21 mile electric range with 0.34 kilowatt per mile (kWh/mile) consumption and 43 mpg while using gasoline.[2] The 2013 Nissan LEAF is rated at 0.29 kWh/mile electricity consumption.[3] A utility factor (the fraction of miles driven on electric power) of 0.471was assumed for the Ford Fusion Energi.[4]

For all vehicles a cumulative lifetime mileage of 166,000 miles was assumed over 15 years. Annual mileage starts at 15,000 miles/year and declines 4.5 percent per year. A discount rate of 3 percent was used to calculate the present value of fuel costs. The national average for all blends of gasoline for January 2013 through November 2013 was $3.60 per gallon, as reported by the EIA.[5] For the same time period, residential electricity averaged $0.121 per kWh.[6]

The well-to-wheels greenhouse gas emissions for gasoline are 11.3 kg CO_2eq /gallon, based on the GREET 2012 model. The national average of 660.9 grams of carbon dioxide equivalent per kilowatt hour (CO_2eq /kWh) for all electricity generation was used to estimate emissions from electric vehicles. This value is based on regional 2009 generation data available in eGRID 2012, and includes both transmission losses and emissions upstream from the powerplant – including fuel extraction, processing and transportation.[7] Regional emissions factors were weighted by net power generation in each region to develop a national average emissions factor.

[1] Environmental Protection Agency (EPA). 2013. *Light-Duty Automotive Technology, Carbon Dioxide Emissions, and Fuel Economy Trends: 1975 Through 2012*. Online at, http://www.epa.gov/otaq/fetrends.htm, accessed December 3, 2013.
[2] Environmental Protection Agency (EPA), Energy Information Administration (EIA), U.S Department of Energy (DOE). 2013. *The Official U.S. Government Source for Fuel Economy Information*. Online at, http://www.fueleconomy.gov/, accessed December 3, 2013.
[3] Id.
[4] Society of Automotive Engineers (SAE). 2012. *Standard J2841 - Utility Factor Definitions for Plug-In Hybrid Electric Vehicles Using Travel Survey Data*. Online at, http://standards.sae.org/j2841_201009, accessed December 3, 2013.
[5] Energy Information Administration (EIA). 2013. *Gasoline and Diesel Fuel Update*. Online at, http://www.eia.gov/petroleum/gasdiesel/, accessed December 3, 2013.
[6] Energy Information Administration (EIA). 2013. *Electric Power Monthly*. Online at, http://www.eia.gov/electricity/monthly/epm_table_grapher.cfm?t=epmt_5_3, accessed December 3, 2013.
[7] Union of Concerned Scientists (UCS). *State of Charge: Electric Vehicles' Global Warming Emissions and Fuel-Cost Savings across the United States*. Online at, http://www.ucsusa.org/assets/documents/clean_vehicles/electric-car-global-warming-emissions-report.pdf, accessed December 3, 2013.