

Appendix D:
Fuel Economy, GHG, Other Emissions, and Alternative Fuels Education Program
Quantitative Survey
January 27, 2012

Target Audience:	U.S. drivers ages 18 and older who currently own or lease a vehicle and are the primary or a shared decision maker on vehicle purchases for their household.
Length of Interview:	20 minutes
Data Collection Mode:	Online Survey
Data Collection Dates:	TBD (Dependent on OMB approval date)

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2127-XXXX. Public reporting for this collection of information is estimated to be approximately 20 minutes per response, including the time for reviewing instructions, completing and reviewing the collection of information. All responses to this collection of information are voluntary. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, National Highway Traffic Safety Administration, 1200 New Jersey Ave, S.E., Washington, DC, 20590

Research Objectives:

- 1) Test consumer comprehension of existing fuel economy-related content¹. The research will explore:
 - a. Among consumers, what is the existing level of knowledge regarding fuel economy and where did consumers obtain the information they already have?
 - b. What knowledge gaps are important to address through NHTSA's consumer education program?
 - c. In terms of fuel economy, GHG and other emissions, alternative fuels and thermal management technologies, what issues do consumers care most about?
 - d. Does the existing fuel economy-related content already collected by NHTSA (Appendix C) add to their current levels of knowledge?
 - e. Is the fuel economy-related content written in a way that is clear and comprehensible?

- 2) Test consumer-facing messages related to NHTSA's consumer education campaign. The research will explore:
 - a. Do these marketing messages effectively encourage consumers to seek fuel-economy related content from NHTSA?

¹ Note that for the purposes of this information collection request the term "fuel economy-related content" encompasses information on the impact of driver behaviors and vehicle maintenance on fuel economy as well as the relationships between a vehicle's fuel economy and GHG and other emissions, alternative fuels and thermal management technologies. This content is included in the Messaging Audit document which can be found in Appendix C of this package.

- b. What are the best methods (*i.e.*, channels of communication) for reaching consumers with these messages?

[INTRODUCTORY TEXT]

Thank you for agreeing to participate in this online study. The survey will take about 20 minutes to complete. All responses are anonymous and will only be viewed in aggregate.

This study is being conducted on behalf of the National Highway Traffic Safety Administration (NHTSA). Please note that an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a current valid OMB control number. The OMB control number for this study is _____. This survey is voluntary. We will not collect any personal information that would allow anyone to identify you. Any information you do provide will be kept private to the fullest extent of the law.

Screening²

1. In which of the following categories is your age?
 - 1 Under 18 [TERMINATE]
 - 2 18 to 24
 - 3 25 to 34
 - 4 35 to 44
 - 5 45 to 54
 - 6 55 to 64
 - 7 65 or older

2. Are you...?
 - 1 Male
 - 2 Female

3. In which of the following states do you currently reside?
[DROP DOWN LIST OF 50 STATES AND D.C., TERMINATE IF RESPONDENT DOES NOT LIVE IN THE U.S.]

4. Do you or a family member currently, or have you or a family member previously worked for any of the following?
 - 1 The automotive industry [TERMINATE]
 - 2 An ethanol or alternative fuel producer [TERMINATE]
 - 3 A market research company or department [TERMINATE]
 - 4 A marketing company or department [TERMINATE]
 - 5 None of the above

5. Do you currently possess a valid driver's license?
 - 1 Yes
 - 2 No [TERMINATE]

6. Do you currently own or lease a passenger vehicle? [MULTIPLE RESPONSE]
 - 1 Yes – Own
 - 2 Yes – Lease
 - 3 No [TERMINATE]

² “Screening” – The purpose of this section is to determine whether or not a respondent qualifies for this study and to provide demographic information that can be useful in identifying target audiences for the messages.

7. Thinking about your next vehicle purchase or lease, would you say you are the primary decision maker, have shared responsibility, or will someone else make the decision?
- 1 I am the primary decision maker
 - 2 I have shared responsibility with someone else
 - 3 I do not have any responsibility for vehicle purchasing decisions [TERMINATE]
8. When purchasing a new vehicle, meaning a new model year vehicle, what are the three most important factors that you consider? [SELECT UP TO THREE RESPONSES, RANDOMIZE, ANCHOR 17]
- 1 Vehicle price
 - 2 Fuel economy
 - 3 Standard options available
 - 4 Technology options available
 - 5 Manufacturer reputation
 - 6 Appearance / External styling
 - 7 Eco-friendly features
 - 8 5-star safety ratings
 - 9 Financing options
 - 10 Dealer incentives
 - 11 Warranty
 - 12 Total cost of ownership
 - 13 Environmental impact of the vehicle
 - 14 Country of origin
 - 15 Comfort
 - 16 Type of fuel the vehicle can use
 - 17 Something Else [SPECIFY]
9. How interested are you in looking up information about ways to improve your vehicle's fuel economy?
- 1 Not at all interested
 - 2
 - 3
 - 4
 - 5
 - 6
 - 7 Very interested
10. How interested are you in looking up information about alternative fuels that can be used to power passenger vehicles?
- 1 Not at all interested
 - 2
 - 3
 - 4
 - 5
 - 6
 - 7 Very interested

Psychographics³

11. Which of the following statements best describes you?

- 1 I prefer to be the first to buy and try new technologies
- 2 I prefer to wait until new product hype has calmed before I purchase and try new technologies
- 3 I prefer to wait until new technologies have been thoroughly tested and reviewed, and others I know have purchased and used new technologies before I purchase
- 4 None of the above

12. How well does each of the following statements describe you?

[RANDOMIZE]

- a. I prefer to buy products that offer the latest technologies
- b. Spending time with my family is my top priority
- c. Buying American products is important to me
- d. I am very interested in how mechanical things, such as engines, work
- e. I seek out information on things I can do to help the environment or reduce my carbon footprint
- f. I am willing to pay more for high-quality items

- 1 Does not describe me at all
- 2
- 3
- 4
- 5
- 6
- 7 Describes me very well

13. How well does each of the following statements describe you?

[RANDOMIZE]

- a. I am interested to learn more about what I can do to improve my vehicle's fuel economy
- b. I often take the opportunity to discuss my knowledge of automobiles with others
- c. I think of vehicles as basic transportation and nothing more
- d. I want a vehicle that reflects my commitment to the environment
- e. I consider myself to be an automotive enthusiast
- f. I always follow the advice of my mechanic
- g. I always maintain my vehicle as recommended by the manufacturer's manual
- h. I want the cheapest and easiest to maintain vehicle I can find

- 1 Does not describe me at all
- 2
- 3
- 4
- 5
- 6
- 7 Describes me very well

³ "Psychographics" – The purpose of this section is to provide psychographic information that can be useful in identifying target audiences for the messages.

Fuel Economy⁴

14. How much do you agree or disagree with the following statements:

[RANDOMIZE]

- a. The upfront expense of a fuel-efficient vehicle can be recouped by saving money at the pump
- b. The way I drive my vehicle can impact its fuel economy
- c. By improving my fuel economy, I can help reduce climate change
- d. There is a direct relationship between the fuel economy of my vehicle and its greenhouse gas emissions

- 1 Disagree completely
- 2
- 3
- 4
- 5
- 6
- 7 Agree completely

15. When evaluating the fuel economy of vehicles, that is the number of miles a vehicle can travel on a gallon of gasoline (*i.e.*, miles per gallon or MPG), how important are the following considerations to you personally?

A more fuel efficient vehicle... [RANDOMIZE]

- a. Saves money on gas
- b. Has the newest vehicle technology
- c. Helps the environment
- d. Helps improve the air quality in my town or city
- e. Helps reduce U.S. dependence on oil
- f. Helps reduce U.S. dependence on *foreign* oil
- g. Saves me trips to the gas station
- h. Provides me with incentives like the ability to ride in the HOV lane
- i. Reduces my carbon dioxide emissions

- 1 Not at all important when considering a fuel efficient vehicle
- 2
- 3
- 4
- 5
- 6
- 7 The most important factor when considering a fuel efficient vehicle
- 8 Not applicable / I have never thought of this

⁴ "Fuel Economy" – The questions in this section satisfy Objectives 1a, 1b and 1c

16. Below is a list of driver behaviors. How much of an impact do you believe each of the following have on your vehicle's fuel economy (MPG)? Please use a 1 to 7 scale where 1 means that the item has a VERY NEGATIVE impact on fuel economy (fewer miles per gallon), 4 means the item has NO IMPACT on fuel economy and 7 means the item has a very positive impact on fuel economy (more miles per gallon).

[RANDOMIZE]

- a. Idling while waiting for someone, instead of turning off the vehicle
- b. Maintaining a constant speed
- c. Driving with a roof top carrier or bicycle/ski rack
- d. Driving with a full trunk or truck bed
- e. Idling to allow my vehicle to warm up on cold mornings
- f. Driving 10MPH above the posted speed limit
- g. Parking in the shade on a hot day
- h. Keeping up with a vehicle's recommended maintenance schedule
- i. Opening the windows when driving on the highway
- j. Using the recommended motor oil
- k. Ensuring tires are inflated to the optimum pressure

- 1 Has a very negative impact on my vehicles' fuel economy
- 2
- 3
- 4 Has no impact on my vehicles fuel economy
- 5
- 6
- 7 Has a very positive impact on my vehicles' fuel economy

Alternative Fuels:⁵

17. How familiar are you with the following alternative fuels that can be used to power vehicles?

[RANDOMIZE]

- a. Ethanol
- b. Biodiesel
- c. Electricity
- d. Natural gas

- 1 I have never heard of this fuel
- 2 I have heard of this fuel, but I am not familiar with it
- 3 I am somewhat familiar with this fuel
- 4 I am very familiar with this fuel, but have never used it personally
- 5 I currently use this fuel or have used this fuel in the past

18. What do you know about vehicles being run using [ethanol/biodiesel/electricity/natural gas]?
[RANDOMLY SELECT ONE FUEL FROM Q16 THAT RESPONDENT IS AT LEAST SOMEWHAT FAMILIAR WITH – IF RESPONDENT IS FAMILIAR WITH MORE THAN ONE FUEL, CHOOSE THE FUEL THAT HAS BEEN EVALUATED BY THE FEWEST NUMBER OF RESPONDENTS; SKIP IF Q17A-D=1,2]
[OPEN END]

⁵ "Alternative Fuels" – The questions in this section satisfy Objectives 1a, 1b and 1c

19. Thinking about alternative fuels, how much do you agree or disagree with the following statements about a vehicle that can run on an alternative fuel?

A vehicle that runs on alternative fuels ...

- a. Saves money on gas
- b. Has the newest vehicle technology
- c. Support domestic production of alternative fuels
- d. Are flexible in the type of fuel they use
- e. Saves me trips to the gas station
- f. Provides me with incentives like being able to drive in the HOV lane
- g. Helps support economic development in certain Midwestern states
- h. Uses fuel that can be derived from renewable sources

- 1 Disagree completely
- 2
- 3
- 4
- 5
- 6
- 7 Agree completely

20. If you were to consider purchasing a vehicle that can run on alternative fuels, how important would the following factors be to you personally?

A vehicle that runs on alternative fuels ...

- a. Saves money on gas
- b. Has the newest vehicle technology
- c. Support domestic production of alternative fuels
- d. Are flexible in the type of fuel they use
- e. Saves me trips to the gas station
- f. Provides me with incentives like being able to drive in the HOV lane
- g. Helps support economic development in certain Midwestern states
- h. Uses fuel that can be derived from renewable sources

- 1 Not at all important when considering a vehicle purchase
- 2
- 3
- 4
- 5
- 6
- 7 The most important factor when considering vehicle purchase

21. For your next vehicle purchase, how likely are you to consider purchasing a vehicle that is able to run on an alternative fuel?

- 1 Not at all likely
- 2
- 3
- 4
- 5
- 6
- 7 Very likely

Communication Channels⁶

22. When looking for information about new vehicles, what sources do you currently look to? Please be as specific as possible.

[OPEN END]

- 1 I have never looked for vehicle information

23. When looking for information about fuel or fuel economy, what sources do you currently look to? Please be as specific as possible.

[OPEN END]

- 1 I have never looked for fuel or fuel economy information

24. If you were looking for information on fuel economy or alternative fuels, would you be likely to use the following sources?

[RANDOMIZE]

- a. CNN.com
- b. Consumer Reports / ConsumerReports.com
- c. Cars.com
- d. Edmunds.com
- e. KelleyBlueBook.com (KBB.com)
- f. Vehicle manufacturer websites
- g. Alternative fuel manufacturer websites
- h. My mechanic
- i. Friends and family
- j. Academic or scientific research studies
- k. FuelEconomy.gov
- l. SaferCar.gov
- m. Auto insurance company website or materials
- n. Brochures available at auto repair and maintenance facilities
- o. Information in my vehicle's owner's manual
- p. New car dealer
- q. Oil company or energy company websites
- r. Blogs

- 1 Yes
- 2 No
- 3 I have never heard of this

⁶ "Communication Channels" – The questions in this section satisfy Objective 2b

25. How much would you say you trust the following government sources to provide you with information about fuel economy and alternative fuels?

[RANDOMIZE]

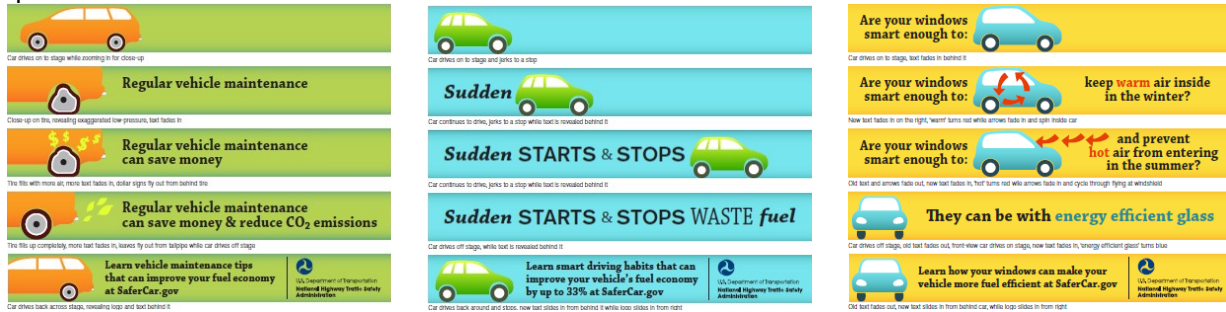
- a. National Highway Traffic Safety Administration (NHTSA)
- b. Department of Transportation (DOT)
- c. Environmental Protection Agency (EPA)
- d. Department of Energy (DOE)

- 1 Do not trust at all
- 2
- 3
- 4
- 5
- 6
- 7 Trust very much

Message Testing⁷⁸

For the next few questions, you will be reviewing storyboards for advertisements. The storyboard is designed to demonstrate animation – the animation begins with the top frame, then continues in sequence. Below each frame, you will see a description of the action that is occurring in each frame.

Please take a few moments to look at each advertisement, then provide your responses to the related questions.



[RANDOMIZE ORDER, IMAGE IS SHOWN FULL-SIZE BY ITSELF WITH A NEXT BUTTON]

[FOR Q26-30, DISPLAY IMAGE AT THE TOP OF SCREEN WITH ONE QUESTION PER SCREEN]

⁷ Note: Currently 3 storyboards are available. Prior to submission, 2 additional storyboards will be created that include messages for alternative fuels and GHG and other emissions so that we are testing one message per topic area: 1) Fuel economy and driver behaviors; 2) fuel economy and vehicle maintenance; 3) alternative fuels; 4) thermal management technologies; and, 5) GHG and other emissions.

⁸ “Message Testing” – The questions in this section satisfy Objective 2a

[REPEAT Q26-30 FOR EACH CONCEPT]

26. What do you think this advertisement is trying to communicate to you?
[OPEN END]

27. How believable is the message presented in this advertisement?

- 1 Not at all believable
- 2
- 3
- 4
- 5
- 6
- 7 Very believable

28. How relevant is this message to you, personally?

- 1 Not at all relevant
- 2
- 3
- 4
- 5
- 6
- 7 Very relevant

29. Thinking about other messaging you've seen about vehicles, how unique is the message presented in this advertisement?

- 1 Not at all unique
- 2
- 3
- 4
- 5
- 6
- 7 Very unique

30. How likely are you to visit **SaferCar.gov** after seeing this ad?

- 1 Not at all likely
- 2
- 3
- 4
- 5
- 6
- 7 Very likely

[AFTER ALL MESSAGES ARE EVALUATED]

31. After seeing these ads, how interested are you in looking up information about ways to improve your vehicle's fuel economy?

- 1 Not at all interested
- 2
- 3
- 4
- 5
- 6
- 7 Very interested

32. After seeing these ads, how interested are you in looking up information about alternative fuels that can be used to power passenger vehicles?

- 1 Not at all interested
- 2
- 3
- 4
- 5
- 6
- 7 Very interested

33. Which subject that is covered in these advertisements is most interesting to you personally?

- 1 Driving behaviors that help improve fuel economy
- 2 Vehicle maintenance tips that help improve fuel economy
- 3 Thermal-management technologies, like energy-efficient glass
- 4 Alternative fuels
- 5 Information about greenhouse gases and other emissions

34. [IF Q33=1] Which ONE of the following topics is most likely to encourage you to look for more information about driving behaviors that help improve fuel economy?

How the fuel economy of my vehicle is affected by...

[RANDOMIZE, ANCHOR 08-09]

- 1 Idling while waiting for someone, instead of turning off the vehicle
- 2 Maintaining a constant speed
- 3 Idling to allow my vehicle to warm up on cold mornings
- 4 Driving 10MPH above the posted speed limit
- 5 Parking in the shade on a hot day
- 6 Opening the windows versus using the air conditioner
- 7 Shifting into a higher gear or overdrive
- 8 Something else [SPECIFY]
- 9 None of these

35. [IF Q33=2] Which ONE of the following topics is most likely to encourage you to look for more information about maintenance tips that help improve fuel economy?

How the fuel economy of my vehicle is affected by...

[RANDOMIZE, ANCHOR 08-09]]

- 1 Keeping up with a vehicle's recommended maintenance schedule
 - 2 Using the recommended motor oil
 - 3 Ensuring tires are inflated to the optimum pressure
 - 4 Purchasing fuel-efficient or lower rolling-resistance tires
 - 5 Replacing the air filter
 - 6 Driving with a roof top carrier or bicycle/ski rack
 - 7 Driving with a full trunk or truck bed
 - 8 Something else [SPECIFY]
 - 9 None of these
36. [IF Q33=3] Which ONE of the following topics is most likely to encourage you to look for more information about thermal management technologies?

How the fuel economy of my vehicle can be improved by...

[RANDOMIZE, ANCHOR 06-07]

- 1 How energy-efficient glass works
- 2 How energy-efficient air conditioning works
- 3 The potential country-wide fuel savings that can result from using thermal management technologies
- 4 The impact of thermal management technologies on gas mileage
- 5 The impact of thermal management technologies on emissions
- 6 Something else [SPECIFY]
- 7 None of these

37. [IF Q33=4] Which ONE of the following topics is most likely to encourage you to look for more information about alternative fuels?

[RANDOMIZE, ANCHOR 09-10]]

- 1 How ethanol is produced
- 2 Ethanol's impact on economic development for Mid-Western states
- 3 How biodiesel is produced
- 4 How biodiesel can be used
- 5 Sources of natural gas
- 6 Information about the tanks of natural gas vehicles
- 7 Sources from which electricity can be generated
- 8 The quietness of electric vehicles
- 9 Something else [SPECIFY]
- 10 None of these

38. How credible do you believe SaferCar.gov is to provide you with this information?

- 1 Not at all credible
- 2
- 3
- 4
- 5
- 6
- 7 Very credible

39. Below is a list of different places you might find advertising like the items you just evaluated.

Which of the following places are you interested in seeing or hearing advertising like this?

[SELECT ALL THAT APPLY, RANDOMIZE, ANCHOR 18]

- 1 Billboards
- 2 On buses/trains
- 3 At bus stops or train stations
- 4 Inside taxis
- 5 On top of taxis
- 6 Ads sent to a cell phone or other mobile device
- 7 At the movies
- 8 At the gas pump
- 9 On television
- 10 Online in the form of a banner ad
- 11 On the radio
- 12 In magazines
- 13 In newspapers
- 14 At the DMV
- 15 At a car dealership
- 16 At an auto repair or maintenance facility
- 17 In mail sent by my insurance company
- 18 Somewhere else [PLEASE SPECIFY]

Demographics⁹

40. Which of the following statements best represents your plans for purchasing or leasing a new vehicle for you or your family? By new vehicle, we mean new model year vehicle, not used or previously owned.

- 1 I plan to purchase or lease a new vehicle in the next 1 to 3 months
- 2 I plan to purchase or lease a new vehicle in the next 4 to 6 months
- 3 I plan to purchase or lease a new vehicle in the next 7 to 12 months
- 4 I plan to purchase or lease a new vehicle longer than 12 months from now
- 5 I have no plans to purchase or lease a new vehicle

⁹ “Demographics” – The purpose of this section is to provide demographic information that can be useful in identifying target audiences for the messages.

41. Approximately how many miles do you drive your primary vehicle per week?
- 1 0 to 49 miles
 - 2 50 to 99 miles
 - 3 100 to 199 miles
 - 4 200 to 299 miles
 - 5 300 to 499 miles
 - 6 500 miles or more
42. How many passenger vehicles does your household currently own or lease?
[ENTER NUMBER]
43. How many of each of the following types of vehicle(s) does your household currently own or lease? [ENTER NUMBER; SUM OF Q43 MUST EQUAL NUMBER PROVIDED IN Q42]
- a. Gasoline-engine vehicle
 - b. Gasoline-electric hybrid vehicle
 - c. Diesel engine vehicle
 - d. Flex-fuel or alternative fuel vehicle
44. What are the year, make and model of the vehicle that you primarily drive?
[OPEN END]
- a. YEAR:
 - b. MAKE:
 - c. MODEL:
45. What is the last grade you completed in school?
- 1 Some grade school (1-8)
 - 2 Some high school (9-11)
 - 3 High school graduate (12)
 - 4 Technical or vocational school
 - 5 Some College
 - 6 College Graduate
 - 7 Graduate or Professional School
 - 8 Other
46. Are you of Hispanic or Latino descent?
- 1 Yes
 - 2 No
47. Select one or more of the following that best describes your race? [ACCEPT MULTIPLE RESPONSES]
- 1 American Indian or Alaska Native
 - 2 Asian
 - 3 Black or African-American
 - 4 Native Hawaiian or other Pacific Islander
 - 5 White

48. Which ONE of the following best describes your total household income?

- 1 Under \$25,000
- 2 \$25,000 to less than \$50,000
- 3 \$50,000 to less than \$75,000
- 4 \$75,000 to less than \$100,000
- 5 \$100,000 to less than \$150,000
- 6 \$150,000 to less than \$200,000
- 7 \$200,000 or more
- 8 Unsure or Refused