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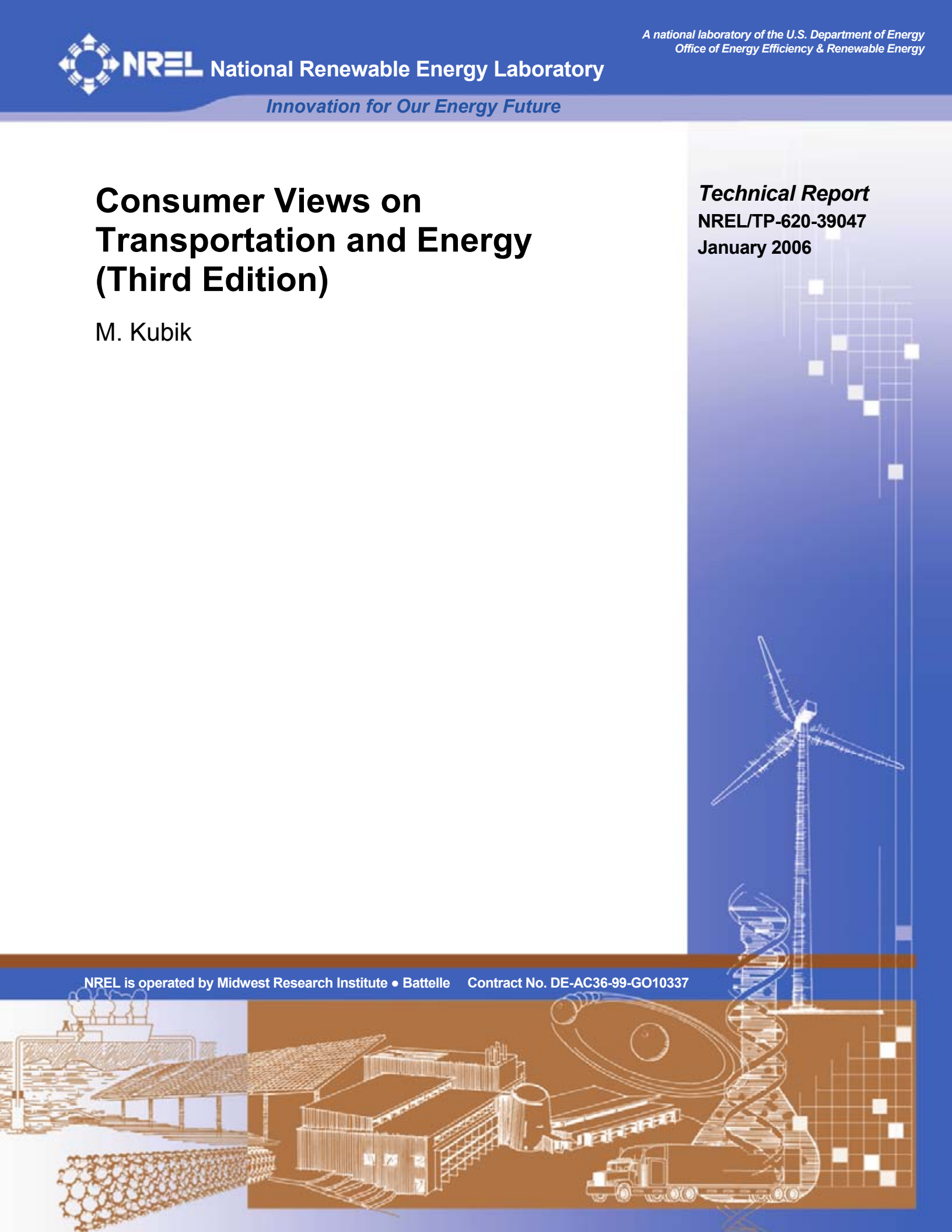
Consumer Views on Transportation and Energy (Third Edition)

M. Kubik

Technical Report
NREL/TP-620-39047
January 2006



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Prepared under Task No. ASA5.1315

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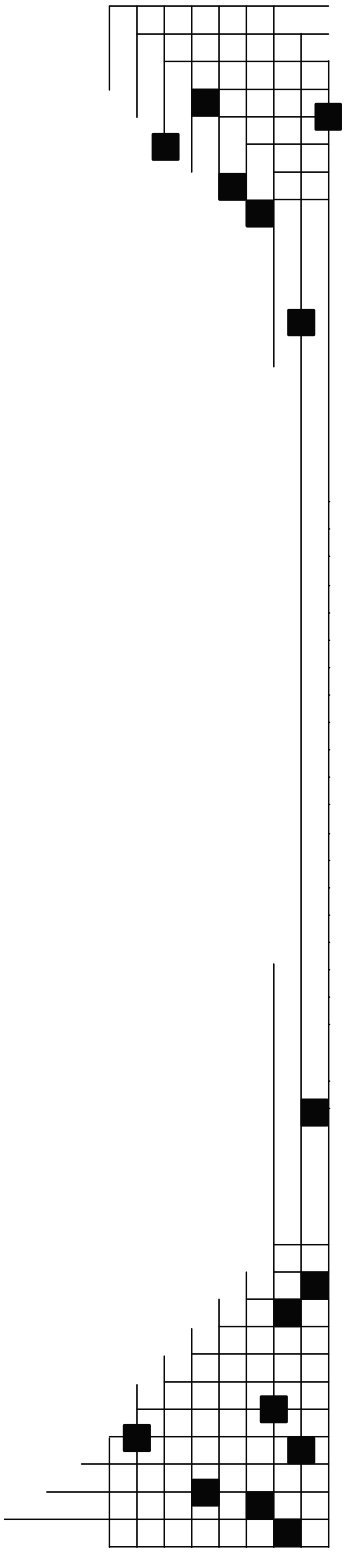

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1. INTRODUCTION

This report was written to provide the U.S. Department of Energy's (DOE's) Office of Energy Efficiency and Renewable Energy (EERE) with an idea of how the American public views various transportation, energy, and environmental issues.

The data presented in the third edition of this report have been drawn from multiple sources: surveys conducted by the Opinion Research Corporation (ORC)[1] for the National Renewable Energy Laboratory (NREL) that are commissioned and funded by EERE, Gallup polls, news organization polls, surveys conducted by independent groups and academic institutions, and other sources. Most of the surveys are telephone interviews conducted with randomly selected national samples of adults 18 and older (some were done via the Internet). The surveys use national samples, and the sample size is noted, wherever it is available. The surveys were selected based on their relevance to this overall topic.

The *Consumer Views on Transportation and Energy* report consists of four sections, including the introduction (**Section 1**). **Section 2** examines public concern about U.S. dependence on imported oil and public assessment of the energy situation in the United States. Section 2 also examines public beliefs about actions to address energy problems, as well as actual and perceived effects of gasoline prices on individuals and households.

Section 3 analyzes what Americans think about alternative fuels such as electricity, ethanol, hydrogen, and other fuel types. **Section 4** focuses on conventional and advanced-technology vehicles. In this report, advanced-technology vehicles include hybrid-electric and diesel vehicles. Section 4 also analyzes owners' decisions about purchasing more fuel-efficient vehicles and advanced-technology vehicles.

In this edition of *Consumer Views on Transportation and Energy,* ORC and Gallup poll results for 2002-2005 have been included. ORC surveys were conducted twice a year in 2002, 2004 and 2005 and once in 2003.[2] The new Gallup polls were conducted throughout 2005. ORC and Gallup asked some of the same energy and environment questions during the past several years. The latest results have been added to the prior ones to show the most current opinions and trends during the past several years.

The report also features new questions from both ORC and Gallup. These 2005 surveys examined "hot" topics such as gas-price increases, environmental issues, and vehicle-purchase preferences.

[1] Opinion Research Corporation (ORC) is a research and consulting firm, founded in 1938, that conducts commercial marketing research programs worldwide, in both the private and public sectors.
[2] March 2002, November 2002, March 2003, May and August 2004, May and September 2005.

2. ENERGY, OIL, AND POLICY

Public opinion polls reveal that the U.S. public perceives the country's energy situation as a serious issue (**Table 2.1.1**). This section examines the public's assessment of the energy situation, actual and perceived effects of gasoline prices on driving, and public beliefs about actions to address energy problems.

2.1 PUBLIC ASSESSMENT OF THE ENERGY SITUATION

Q2.1.1: How serious would you say the energy situation is in the United States – very serious, fairly serious, or not at all serious?

Table 2.1.1. Seriousness of Energy Situation (selected years, 1977-2005)

Date	Very serious (%)	Fairly serious (%)	Not at all serious (%)	No opinion (%)
March 2005	31	56	10	3
March 2004	29	57	12	2
March 2003	28	59	11	2
March 2002	22	63	12	3
March 2001	31	59	9	1
Feb. 1991	40	44	14	2
Aug. 1990	28	45	23	4
April 1979	44	36	16	4
March 1978	41	39	15	5
April 1977	44	40	11	5

Source*:* Gallup (selected years, 1977-2005), N=496

Q2.1.2: Do you think that the United States is or is not likely to face a critical energy shortage during the next five years?

Table 2.1.2. Likelihood to Face an Energy Shortage (selected years, 1978-2005)

Date	Yes, is (%)	No, is not (%)	Already facing one (%)	No opinion (%)
March 2005	52	45	*	3
March 2004	49	47	1	3
March 2003	56	40	1	3
March 2002	48	49	1	2
March 2001	60	36	1	3
November 1978	45	41	4	10

Source*:* Gallup (selected years, 1977-2005), N=496

2.2 ACTUAL AND PERCEIVED EFFECTS OF GASOLINE PRICES ON DRIVING

Among those who responded to questions related to this section, it was clear that increases in gas prices affect driving habits and lifestyle traits. This is consistent with data showing that when gasoline prices are lower, people tend to use their vehicles more; and conversely, when gasoline prices increase, driving declines (**Table 2.2.1**).

Q2.2.1: As a result of the recent rise in gas prices, would you say you have – or have not – done each of the following?

Table 2.2.1. Gas Price Increase – Effect on Lifestyle (June 2004)

Lifestyle trait	Yes, have (%)	No, have not (%)	No opinion (%)
Made more of an effort to find the gas station with the cheapest gas in your area	69	30	1
Seriously considered getting a more fuel-efficient car the next time you buy a vehicle	53	46	1
Cut back significantly on how much you drive	45	54	1
Cut back significantly on your household spending because of the higher gas prices	34	66	*
Altered your summer vacation plans	29	70	1

Source: Gallup (June 3-6, 2004), N=465

Q2.2.2: Have recent price increases in gasoline caused any financial hardship for you or your household?

Table 2.2.2. Gas Price Increase – Effect on Finances (selected years, 2000-2005)

Timeframe	Yes, caused hardship (%)	No, has not caused hardship (%)	No opinion (%)
Aug. 28-30, 2005	69	31	0
April 1-2, 2005	42	58	0
May 21-23, 2004	47	52	1
Feb. 17-19, 2003	35	65	0
May 7-9, 2001	47	53	0
May 23-24, 2000	36	64	0

Source: Gallup (selected years, 2000-05), N=465

Q2.2.3: What has been your or your family's primary response with regard to your vehicle or vehicle travel and the currently high gasoline prices? Anything else? (unaided)

Table 2.2.3. Gas Price Increase – Response (September 2005)

Response	Total (%)	Small car (%)	Large car (%)	Minivan (%)	Pickup/ van (%)	SUV (%)
Drive less (travel less, consolidate trips, carpool, walk more, take bus, ride bike more)	44	54	42	53	42	33
No effect (travel just as often)	16	12	24	1	22	21
Gas prices are ridiculous (outrageous – too high)	13	9	13	19	10	12
Don't like it (unhappy, angry)	8	7	8	10	10	7
Just pay the price (necessity)	5	3	8	8	6	6
Use most efficient vehicle I own	3	2	1	2	2	6
Prices are result of gouging	2	3	2	5	4	1
Changed vehicle	2	3	3	1	1	2
Don't own car/don't drive	2	1	1	0	2	1
Other	9	9	9	8	7	11
Don't know	6	3	3	10	4	7

Source: ORC for NREL (2005b), Study No. 714388, N=1,042
Note: Percentages do not total 100, because each respondent could volunteer more than one response.
For information on other demographic breakdowns, see Appendix A

Q2.2.4: If these high gasoline prices continued for the next several years, with respect to purchasing a new vehicle, how much more efficient would you want the vehicle you purchase to be? Would you say……. (aided question)

Table 2.2.4. Fuel Efficiency of New Vehicle (September 2005)

Efficiency	Total (%)	Small car (%)	Large car (%)	Minivan (%)	Pickup/ van (%)	SUV (%)
25% or less	**20**	**17**	**29**	**17**	**24**	**28**
0 to 15% more efficient	9	7	12	11	12	14
16 to 25% more efficient	11	10	17	7	12	15
26% or more	**66**	**81**	**69**	**78**	**70**	**68**
26 to 49% more efficient	12	16	10	22	12	15
50% or greater increase	54	65	59	56	58	53
Do not plan to buy new vehicle	**11**	**2**	**1**	**0**	**2**	**3**
Don't know/don't drive	**2**	*	**1**	**5**	**5**	**1**
Mean (% more efficient)	**43**	**45**	**41**	**43**	**42**	**40**

Source: ORC for NREL (2005b), Study No. 714388, N=1,042
For information on other demographic breakdowns, see Appendix A

Q2.2.5: If these high gasoline prices continued for the next several years, with respect to driving less, would you say you would reduce the miles you travel by……. (aided question)

Table 2.2.5. Reduction in Miles Traveled (September 2005)

Reduction in miles	Total (%)	Small car (%)	Large car (%)	Minivan (%)	Pickup/ van (%)	SUV (%)
25 % or less	**51**	**55**	**54**	**59**	**53**	**62**
Less than 5%	16	15	13	24	17	26
5 to 15%	16	17	18	15	18	19
16 to 25%	19	23	22	20	18	17
26% or more	**31**	**35**	**36**	**29**	**26**	**22**
26 to 49%	9	8	13	7	10	10
50% or more	23	26	22	22	16	12
None	**12**	**8**	**9**	**12**	**17**	**15**
Don't know/don't drive	**5**	**3**	**2**	**0**	**5**	**2**
Mean (% reduction in miles)	**23**	**25**	**24**	**21**	**20**	**17**

Source: ORC for NREL (2005b), Study No. 714388, N=1,042
For information on other demographic breakdowns, see Appendix A

Q2.2.6: Just your opinion, why would you say the price of gasoline has been increasing so much in recent months? (open-ended question)

Table 2.2.6. Gas Price Increase – Perceived Cause (May 2004)

Price factor	Percent
Big business/oil companies/price gouging/refineries want more profit	22
The war in Iraq	19
OPEC/Saudi Arabia manipulating supply	9
Supply and demand	8
Government/politics	7
President Bush	5
Lack of U.S. refining capability/lack of supply/drilling	4
Gas shortage/lack of production	4
Unrest in the Middle East	4
Economy/inflation	2
Summer vacation time/prices always go up around this time	2
Foreign policy	1
Other	6
No opinion	15

Source: Gallup (May 21-23, 2004), N=496
Note: Percentages do not total 100, because each respondent could volunteer more than one response.

Q2.2.7: Assuming that prices for regular gasoline remain near $2.50 per gallon, for your next new vehicle purchase, would you ……. (aided question)

Table 2.2.7. Gas Prices Near $2.50 a Gallon and Amount Willing to Pay for New Vehicle (May 2005)

Type of Vehicle	Percent
Pay an additional $2,500 to buy a hybrid version of your vehicle that reduced your gasoline use by 30%	37
Pay an additional $4,000 to buy a plug-in hybrid version of your vehicle that could reduce your gasoline use by 45% if you traveled about 20 miles per day on its battery only	14
Neither	44
Don't know	4
Total	99

Source: ORC for NREL (2005a), N = 1,012

Q2.2.8: Assuming that prices for regular gasoline decline to and remain at about $1.50 per gallon, for your next new vehicle purchase, would you ……. (aided question)

Table 2.2.8. Gas Prices at $1.50 a Gallon and Amount Willing to Pay for New Vehicle (May 2005)

Type of Vehicle	Percent
Pay an additional $2,500 to buy a hybrid version of your vehicle that reduced your gasoline use by 30%	34
Pay an additional $4,000 to buy a plug-in hybrid version of your vehicle that could reduce your gasoline use by 45% if you traveled about 20 miles per day on its battery only	10
Neither	51
Don't know	5
Total	100

Source: ORC for NREL (2005a), N = 1,012

Q2.2.9: How high would gasoline prices need to be before you would be willing to pay $2,000 more for a vehicle that reduced your gasoline use by a third? Would you say …….. (aided question)

Table 2.2.9. Gas Prices and Willingness to Pay $2,000 More for New Vehicle (May 2005)

Price of gas (per gallon)	**Percent**
$1.50	12
$2	8
$2.50	15
$3 or higher	34
Never – wouldn't pay $2,000 more to reduce your fuel use by a third	22
Don't know	8
Total	99

Source: ORC for NREL (2005a), N = 1,012

2.3 PUBLIC BELIEFS ABOUT ACTIONS TO ADDRESS ENERGY PROBLEMS

When it comes to opinions regarding priorities for the United States, protecting the environment and developing U.S. energy supplies are nearly equal in the minds of respondents. This trend was supported in surveys conducted by two different groups. (**Tables 2.3.2 and 2.3.3**).

Q2.3.1: Which of the following approaches to solving the nation's energy problems do you think the United States should follow right now:

Emphasize production of more oil, gas, and coal supplies OR

Emphasize more conservation by consumers of existing energy supplies.

Table 2.3.1. Energy Production Priorities – Production vs. Conservation (2001-05)

Date	More production (%)	More conservation (%)	Both/equally (vol.) (%)	Neither/other (vol.) (%)	No opinion (%)
March 2005	28	61	7	2	2
March 2004	31	59	6	2	2
March 2003	29	60	7	2	2
March 2002	30	60	6	2	2
March 2001	33	56	8	1	2

Source: Gallup (2001-05), N=496

Q2.3.2: With which one of these statements about the environment and energy production do you most agree:

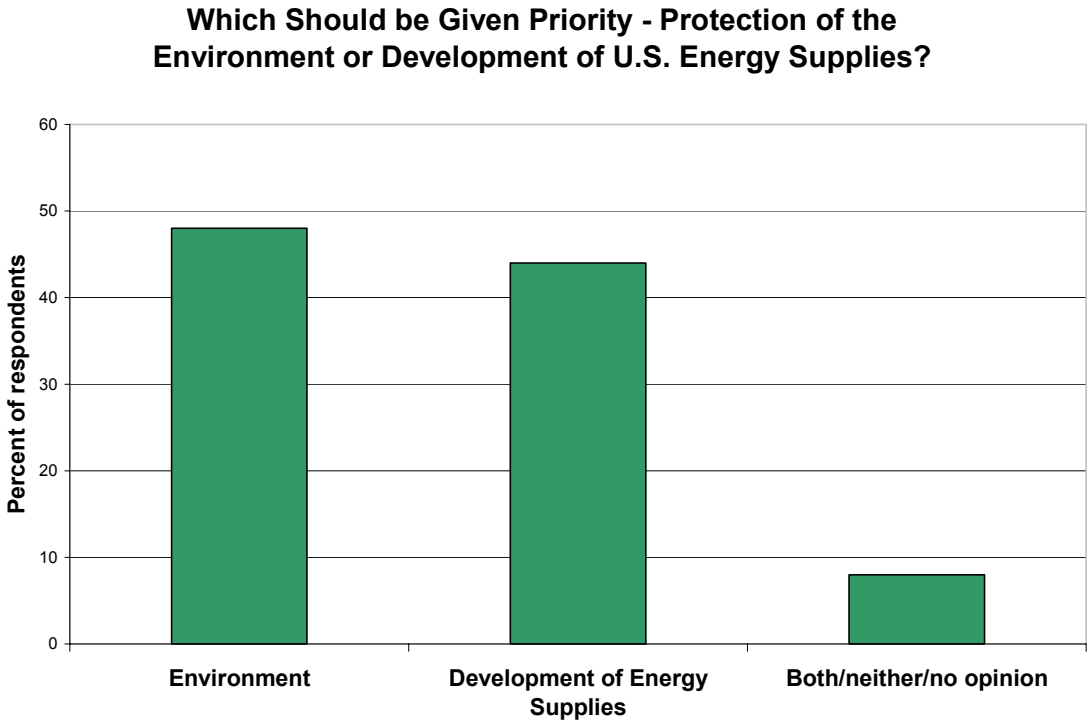
Protection of the environment should be given priority, even at the risk of limiting the amount of energy supplies (such as oil, gas, and coal), which the United States produces OR

Development of U.S. energy supplies (such as oil, gas, and coal) should be given priority, even if the environment suffers to some extent.

Table 2.3.2. Energy Production Priorities – Environment vs. Supply (2001-05)

Date	Environment (%)	Development of energy supplies (%)	Both/equally (vol.) (%)	Neither/other (vol.) (%)	No opinion (%)
March 2005	52	39	4	2	3
March 2004	48	44	3	1	4
March 2003	49	40	5	2	4
March 2002	52	40	3	2	3
March 2001	52	36	6	2	4

Source: Gallup (2001-05), N=496



Source: Gallup (March 2004)

Q2.3.3: Right now, which one of the following do you think should be a more important priority for this country: protecting the environment or developing new sources of energy?

Table 2.3.3. Priorities for the Country (selected years, 2001-05)

Date	Environment (%)	Energy (%)	Unsure (%)
March 2005	42	49	9
February 2002	45	48	7
May 2001	42	49	9

Source: Princeton Survey (March 2005), N=750

Q2.3.4: Do you favor or oppose relaxing some environmental standards to increase oil and gas production in the United States?

Table 2.3.4. Relaxing Environmental Standards (April 2004)

Political affiliation	Favor (%)	Oppose (%)	Unsure (%)
All	**46**	**43**	**11**
Democrats	34	54	12
Republicans	63	26	11
Independents	40	49	11

Source: Fox News/Opinion Dynamics Poll (April 2004), N=900

Q2.3.5: Do you think that in the past few years the environmental regulations in the United States have become more strict, have stayed about the same, or have gotten looser? (aided question)

Table 2.3.5. View of Strictness of Environmental Regulations (May 2005)

Environmental regulations	Percent
Much more strict	12
Somewhat more strict	20
Stayed about the same	26
Somewhat looser	21
Much looser	17
Don't know	5

Source: Yale Environment Survey (May 2005), N=1,002

Q2.3.6: Right now, do you think the quality of the environment is getting better, staying about the same, or getting worse? (aided question)

Table 2.3.6. Quality of the Environment at Various Levels (May 2005)

Level	Getting better (%)	Staying about the same (%)	Getting worse (%)	Don't know (%)
In your community	17	54	28	1
In the United States	16	33	50	1
Worldwide	10	22	63	5

Source: Yale Environment Survey (May 2005), N=1,002

Q2.3.7: I am going to read some specific environmental proposals. For each one, please say whether you generally favor or oppose it.

Table 2.3.7. Environmental Proposals (March 2003)

Proposal	Favor (%)	Oppose (%)	No opinion (%)
Setting higher emissions and pollution standards for business and industry	80	19	1
Imposing mandatory controls on carbon dioxide emissions and other greenhouse gases	75	22	3
More strongly enforcing federal environmental regulations	75	21	4
Setting higher auto emissions standards for automobiles	73	24	*
Expanding the use of nuclear energy	43	51	6
Opening up the Arctic National Wildlife Refuge in Alaska for oil exploration	41	55	4

Source: Gallup (March 2003), N=526

Q2.3.8: Regarding some possible ways of reducing U.S. dependence on imported oil, do you think the following are a good idea or a bad idea? (aided question)

Table 2.3.8. Ideas for Reducing Dependence on Imported Oil (May 2005)

Idea (Top 10 Responses)	Good (%)	Bad (%)	OK/Can't Rate (%)
Require the auto industry to make cars that get better gas mileage	93	6	1
Require the auto industry to make more fuel-efficient cars	90	8	1
Build more solar power facilities	90	6	3
Build more wind-turbine farms to harness wind-generated electricity	87	6	6
Increase funding for renewable energy research	86	9	4
Provide tax credits to people who buy more energy-efficient appliances such as air conditioning, clothes dryers, and water heaters	84	13	3
Promote the development of hydrogen-powered cars	81	8	11
Build more water-powered hydroelectric facilities	81	11	8
Provide tax credits to people who buy cars that get good gas mileage	79	19	2
Promote the use of hydrogen fuel cell technology	71	8	20

Source: Yale Environment Survey (May 2005), N=1,002

3. ALTERNATIVE FUELS

A number of surveys researched the U.S. adult population knowledge and opinions about alternative types of fuel such as electricity, ethanol, and hydrogen. Poll questions asked between 2000 and 2005 focused on knowledge and opinions about alternative fuels. Several of these survey questions demonstrate that opinions regarding safety and environmental attributes of these fuel sources have changed from 2000 to 2005.

Table 3.1.1. Factors Considered "Extremely Important" or "Very Important" in Influencing Decisions to Try a New Fuel Technology (2003)

Factor	Percent
How safe the fuel is for drivers and passengers	83
The cost of the fuel	78
How far you can drive before refueling	75
The cost of the vehicle	72
The convenience of refueling	67
Environmental emissions	67
Whether the fuel source is domestic instead of foreign	47
How the new fuel system affects passenger and cargo space	47
Whether or not the fuel can be recycled	45

Source: Harris poll for Millennium Cell and U.S. Borax Inc. (2003), N=1,006.

Q3.1.2: Consider a future date when gasoline is no longer available. Which of the following do you think would be the **best** fuel for use in personal vehicles: electricity, ethanol, or hydrogen?

Table 3.1.2. Public Perception of Best Fuel and Worst Fuel for Use in Personal Vehicles When Gasoline Is No Longer Available (2000 and 2004)

Fuel for Use in Personal Vehicles	Best Fuel (%)		Worst Fuel (%)	
	2000	August 2004	2000	August 2004
Electricity	52	41	15	21
Hydrogen	15	28	27	23
Ethanol	21	19	28	28
Don't know	12	13	30	29
Total	100	100	100	100

Source: ORC for NREL (2000b), Study No. 709489, N=1,000; and ORC for NREL (2004b), Study No. 713359, N=1,000.

Q3.1.3: Why did you say **electricity** would be the **best** fuel for use in personal vehicles when gasoline is no longer available? (unaided question)

Table 3.1.3. Reasons **Electricity** Would Be the **Best** Fuel for Use in Personal Vehicles When Gasoline Is No Longer Available (2000 and 2004)

Reasons	Percent	
	2000	August 2004
Environmental concerns (cleaner, less pollution, cleaner air, other environmental mentions)	29	23
Availability (abundant, common, renewable/inexhaustable, easy to produce/manufacture, not dependent on foreign oil)	22	23
Existing/developing technology (electric cars already being developed, technology already being used, many things powered by electricity)	17	13
Economical/affordable	11	7
Methods of generating (can be solar generated/powered, other related mentions)	7	3
Most familiar with it/not familiar with others	7	8
Safe	5	4
Other	5	9
Don't know	6	15

Source: ORC for NREL (2000b), Study No. 709489, N=522; and ORC for NREL (2004b), Study No. 713359, N=1,000.
Note: Percentages do not total 100, because each respondent could volunteer more than one response.

Q3.1.4: Why did you say **ethanol** would be the **best** fuel for use in personal vehicles when gasoline is no longer available?

Table 3.1.4. Reasons **Ethanol** Would Be the **Best** Fuel for Use in Personal Vehicles When Gasoline Is No Longer Available (2000 and 2004)

Reasons	Percent	
	2000	August 2004
Readily available (common, abundant, renewable/inexhaustible, easy to produce/manufacture, can generate our own fuel, other mentions)	27	28
Methods of generating (made from corn/grain, other related mentions)	18	9
Economical/affordable	15	12
Environmental concerns (cleaner, less pollution, other related mentions)	15	15
Others not practical/performance concerns	10	6
Better for/helps farmers/ farming industry	8	14
Existing/developing technology	8	9
Best source (unspecified)	5	11
More similar to gasoline	5	6
Other	12	5
Don't know	7	12

Source: ORC for NREL (2000b), Study No. 709489, N=206; and ORC for NREL (2004b), Study No. 713359, N=1,000.
Note: Percentages do not total 100, because each respondent could volunteer more than one response.

Q3.1.5: Why did you say **hydrogen** would be the **best** fuel for use in personal vehicles when gasoline is no longer available?

Table 3.1.5. Reasons **Hydrogen** Would Be the **Best** Fuel for Use in Personal Vehicles When Gasoline Is No Longer Available (2000 and 2004)

Reasons	Percent	
	2000	August 2004
Availability (common, abundant, easy to produce/manufacture, renewable/inexhaustible, other related mentions)	37	36
Environmental concerns (cleaner, less pollution, other related mentions)	27	24
Economical/affordable	12	16
Others not practical/ performance concerns	11	6
Existing/developing technology (net)	7	6
More efficient	5	1
Safety concerns	5	1
Best source (unspecified)	3	2
Other	9	9
Don't know	9	8

Source: ORC for NREL (2000b), Study No. 709489, N=151; and ORC for NREL (2004b), Study No. 713359, N=1,000.
Note: Percentages do not total 100, because each respondent could volunteer more than one response.

Q3.1.6: Why did you say **electricity** would be the **worst** fuel for use in personal vehicles when gasoline is no longer available?

Table 3.1.6. Reasons **Electricity** Would Be the **Worst** Fuel for Use in Personal Vehicles When Gasoline Is No Longer Available (2000 and 2004)

Reasons	Percent	
	2000	August 2004
Too expensive	28	23
Electric vehicles can't hold charge for long/can't travel long distances	20	9
Environmental concerns (must burn coal/fossil fuels, pollution, other related mentions)	19	23
Not enough electricity now	12	6
Safety concerns	5	2
Other	15	9
Don't know	10	13

Source: ORC for NREL (2000b), Study No. 709489, N=150; and ORC for NREL (2004b), Study No. 713359, N=1,000.
Note: Percentages do not total 100, because each respondent could volunteer more than one response.

Q3.1.7: Why did you say **ethanol** would be the **worst** fuel for use in personal vehicles when gasoline is no longer available?

Table 3.1.7. Reasons **Ethanol** Would Be the **Worst** Fuel for Use in Personal Vehicles When Gasoline Is No Longer Available (2000 and 2004)

Reasons	Percent	
	2000	August 2004
Environmental concerns (pollution, creates environmental problems, other related mentions)	38	30
Safety concerns (flammable/combustible, explosive, contains chemicals, other related mentions)	20	12
Too expensive	6	4
Lack of availability	4	4
Finite/exhaustible resource	3	2
Difficult to produce	3	3
Causes engine trouble	3	1
Other	13	7
Don't know	20	19

Source: ORC for NREL (2000b), Study No. 709489, N=281; and ORC for NREL (2004b), Study No. 713359, N=1,000.
Note: Percentages do not total 100, because each respondent could volunteer more than one response.

Q3.1.8: Why did you say **hydrogen** would be the **worst** fuel for use in personal vehicles when gasoline is no longer available?

Table 3.1.8. Reasons **Hydrogen** Would Be the **Worst** Fuel for Use in Personal Vehicles When Gasoline Is No Longer Available (2000 and 2004)

Reasons	Percent	
	2000	August 2004
Safety concerns (explosive, flammable/combustible, unstable, think of bombs, other related mentions)	50	40
Pollution and environmental concerns	8	5
Not enough is known about it	4	*
Difficult to produce	4	4
Too expensive	3	1
Other	15	9
Don't know	21	23

Source: ORC for NREL (2000b), Study No. 709489, N=274; and ORC for NREL (2004b), Study No. 713359, N=1,000.

4. CONVENTIONAL, MORE FUEL-EFFICIENT, AND ADVANCED-TECHNOLOGY VEHICLES

Section 4 focuses on vehicle owners and the decisions they make about their vehicles. It consists of three sections that encompass survey data on owners' decisions about their conventional (i.e., gasoline) vehicles, as well as more fuel-efficient and advanced-technology vehicles.

4.1 VEHICLE OWNERS' DECISIONS ON CONVENTIONAL VEHICLES

Q4.1.1: Which of the following attributes would be MOST important to you in your choice of your next vehicle? (closed-ended)

Table 4.1.1. Trends in Vehicle-Attribute Preference (selected years, 1980-2005)

	J.D. Power (percent)					ORC (percent)					
Attributes	**1980**	**1981**	**1983**	**1985**	**1987**	**1996**	**1998**	**2000**	**2001**	**May 2004**	**May 2005**
Fuel economy	42	20	13	8	4	7	4	10	10	22	12
Dependability	31	40	38	41	44	34	36	32	29	26	33
Low price	14	21	30	29	31	11	5	11	8	10	6
Quality	4	7	11	12	8	19	20	21	22	19	20
Safety	9	12	9	10	14	29	34	24	29	23	26
Don't know/ none of these							1	2	1		3
Total	100	100	100	100	101	100	100	100	99	100	100

Sources: For 1980s: J. D. Power (data based on new-car buyers). For 1996: ORC for NREL. For 1998: ORC for NREL (1998a), N = 1,000. For 2000: ORC for NREL (2000a), N = 941. For 2001: ORC for NREL (2001c), N = 989. For 2004: ORC for NREL (2004a), N = 949. For 2005: ORC for NREL (2005a), N = 1,012.

In-market car buyers were asked about their views toward sport utility vehicles (SUVs).

Table 4.1.2. Issue Is a Major Reason for Those NOT Considering the Purchase of an SUV (2003)

Issue	**January 2003**	**March 2003**
Price of gas	--	50
Not the kind of vehicle I want	51	45
Rollover/safety concerns	30	34
Impact on foreign oil dependence	28	31
Impact on environment	25	26
Too big for the road	23	23

Source: Kelley Blue Book (2003), N=524

4.2 VEHICLE OWNERS' DECISIONS ABOUT MORE FUEL-EFFICIENT VEHICLES

Q4.2.1: Suppose that the next vehicle you've decided to buy offers an option of better fuel economy, but at a higher price. The savings in fuel costs would pay back the higher price over time. How soon, in years, would the fuel savings have to pay back the additional cost to persuade you to buy the higher fuel-economy option?

Table 4.2.1. Number of Years Public is Willing to Accept for Payback of Higher Fuel-Economy Vehicle (2002)

Years	Percent
1	18
2	23
3	13
4	3
5	12
6	-
More than 6	3
Don't Know	27
Total	100
Mean	2.9

Source: ORC for NREL (2002b), N=1,000

Q4.2.2: How much **more** would you be willing to pay for the vehicle that gets 10% better fuel economy than for the vehicle you currently drive?

Table 4.2.2. Additional Amount the Public is Willing to Pay for a Vehicle with a 10 Percent Increase in Fuel Economy (2001)

Dollar Amount	Percent
Less than $500	7
$500-$1,000	15
$1,001-$2,500	17
$2,501-$5,000	15
More than $5,000	5
Nothing more	18
Don't know	23
Total	100
Mean[1] (including none)	$2,143
Mean[1] (excluding none)	$2,799

Source: ORC for NREL (2001b), Study No. 710449, N=180

[1] In this report, calculation of means, medians, and standard deviations are based on raw numbers. "Don't know" responses are not part of the calculations.

Q4.2.3: Suppose you have decided to buy a new vehicle and have a choice of an optional engine that requires a new fuel that costs the same as gasoline and is just as good as gasoline.

Version A: The optional engine costs the same as the conventional one but gets 50% more miles per gallon. However, the fuel it requires is sold only at 1 in 10 stations. Which would you most likely buy?

Version B: The optional engine costs the same as the conventional one but gets 50% more miles per gallon. However, the fuel it requires is sold only at 1 in 5 stations. Which would you most likely buy?

Version C: The optional engine costs the same as the conventional one but gets 50% more miles per gallon. However, the fuel it requires is sold only at 1 in 3 stations. Which would you most likely buy?

Table 4.2.3. Public Preference Toward Purchasing a More Fuel-Efficient Engine with Different Fuel-Availability Options (2000)

Fuel-Availability Options		Conventional Engine (%)	Optional Engine (%)	Don't Know/Refused (%)
A	The optional engine costs the same as the conventional one, but gets 50% more miles per gallon. However, the fuel it requires is sold only at 1 in 10 stations.	66	30	4
B	The optional engine costs the same as the conventional one, but gets 50% more miles per gallon. However, the fuel it requires is sold only at 1 in 5 stations.	62	36	3
C	The optional engine costs the same as the conventional one, but gets 50% more miles per gallon. However, the fuel it requires is sold only at 1 in 3 stations.	43	53	4

Source: ORC for NREL (2000d), Study No. 70920, N=111

4.3 VEHICLE OWNERS' DECISIONS ABOUT ADVANCED-TECHNOLOGY VEHICLES

Hybrid-Electric Vehicles

Q4.3.1: There are some vehicles in the U.S. market today that have hybrid-electric powertrains that combine an electric motor and a gasoline engine to achieve a higher fuel economy than similar-sized vehicles. Please name one of these hybrid vehicles, if you can.

Table 4.3.1. Names of Advanced Hybrid-Electric Vehicles Known by the Public (selected years, 2000-04)

	Percent			
	August 2000	**November 2001**	**November 2002**	**May 2004**
Any vehicle	36	44	51	48
Honda	15	24	24	17
Toyota	4	11	10	9
Ford	NA	NA	NA	6
Other	14	6	7	4
Don't Know	64	56	48	52

Source: ORC for NREL (2000) N=953, (2001) N=999, (2002c) N=999, (2000a) N=1,000, (2004a) N=1,000
Note: Percentages do not total 100, because each respondent could volunteer more than one response.

A 2003 survey of in-market consumers by Kelley Blue Book examined the influence of the media on attitudes toward SUVs. Although no hybrid-electric SUVs were available in the United States at the time of this survey (mid-2003), shoppers would think favorably of such an option and might be more likely to consider the purchase of an SUV.

Table 4.3.2. Public's Attitudes Toward Hybrid-Electric SUVs (2003)

	Percent					
	SUV Considerers		**SUV Non-Considerers**		**Total**	
	Jan 2003	**Mar 2003**	**Jan 2003**	**Mar 2003**	**Jan 2003**	**Mar 2003**
More favorable toward SUVs	52	46	45	44	48	45
Neutral	40	46	44	51	42	49
Less favorable toward SUVs	8	7	11	5	10	6

Source: Kelley Blue Book (2003), N=524

Q4.3.3: Suppose you were going to buy a new vehicle. Would you seriously consider buying a car or SUV that is a gas-electric hybrid, or not? If the hybrid vehicle cost $3,000 more than the standard model of the same vehicle would you still seriously consider buying it, or not?

Table 4.3.3. Level of Consideration for Gas-Electric Hybrid (August 2005)

Response	Percent
Yes, seriously consider	**55**
Even if $3,000 more	45
Not, if $3,000 more	9
No, would not	**43**
No opinion	**2**

Source: Gallup (August 2005), N=1,007

Q4.3.4: When you buy or lease your next vehicle, will the car's gas mileage be a more important consideration for you that it has been in the past, or will it not be any more important to you?

Table 4.3.4. Importance of Gas Mileage in Next Vehicle (August 2005)

Response	Percent
More important	75
Not more important	22
Less important	*
Don't drive	1
No opinion	2

Source: Gallup (August 2005), N=1,007

Diesel Vehicles

Q4.3.5: What fuels would you like to see replace gasoline and diesel fuel in the vehicles used in the United States? Anything else? (unaided question)

Table 4.3.5. Alternative Fuels to Replace Gasoline and Diesel Fuel in Vehicles (September 2005)

Response	Total (%)	Small car (%)	Large car (%)	Minivan (%)	Pickup/ van (%)	SUV (%)
Electricity	14	18	18	15	13	9
Hydrogen	14	21	16	15	15	11
Ethanol	11	13	11	11	10	11
Solar	7	6	10	11	10	7
Water	7	6	8	11	3	8
Hybrid fuel/cars	5	9	7	3	7	3
Corn	5	4	6	8	4	4
Vegetable oil	3	3	2	4	4	5
Natural gas	3	2	4	1	3	3
Alcohol	2	4	3	1	3	1
Diesel	2	2	*	2	4	2
Fuel cells (unspecified)	2	3	3	2	1	1
Batteries	2	2	4	1	1	1
Propane	1	2	1	2	4	0
Something environmentally friendly	1	2	3	0	1	1
Anything cheaper/less expensive	1	*	1	2	1	3
Bio-diesel	1	1	*	0	3	*
Cooking oil	1	2	*	0	1	0
Nuclear	1	1	2	0	0	1
Soy/soybeans	1	1	*	1	1	*
Methanol	1	*	1	0	1	*
Wind	1	*	*	0	1	0
Other	11	8	11	12	12	13

Source: ORC for NREL (2005b), Study No. 714388, N=1,042
Note: Percentages do not total 100, because each respondent could volunteer more than one response

Q4.3.6: Would you consider buying a diesel engine version that got 40% better fuel economy and costs an additional $1,500?

Table 4.3.6 Public's Willingness to Pay a Premium for a Clean Diesel Engine (2002)

Premium Willing to Pay For Clean Diesel	Percent		
	Total	Current Diesel Owner	Current Gas Owner
$0	33	10	34
$1-$199	8	4	8
$200-$399	7	1	7
$400-$599	16	8	17
$600-$999	4	3	4
$1,000-$1,499	14	17	14
$1,500-$1,999	4	5	4
More than $2,000	14	51	12

Source: J.D. Power and Associates (2002), N-not available

Q4.3.7: Assume that a new vehicle you want to buy has two engine options that are equally clean, dependable, powerful, odorless, and smooth running. One uses gasoline and the other uses diesel fuel and gets 40% more miles per gallon but costs $2,000 more. Which engine option would you buy?

Table 4.3.7. Purchase Preference Between Diesel and Gasoline Vehicles by Vehicle Type (2001 and 2005)

Vehicle Engine Option	Total		Vehicle Type									
			Small Car		Large Car		Minivan		SUV		Pickup/ Van	
	'01	'05	'01	'05	'01	'05	'01	'05	'01	'05	'01	'05
Gasoline	71	40	75	40	81	40	71	28	62	52	65	30
Diesel	27	52	21	55	18	56	27	65	37	44	34	69
Don't know	2	8	4	5	4	4	2	7	1	4	1	1

Source: For 2001: ORC for NREL (2001c), Study No. 710288, N=989; For 2005: ORC for NREL (2005b), Study No. 714388, N=1,042

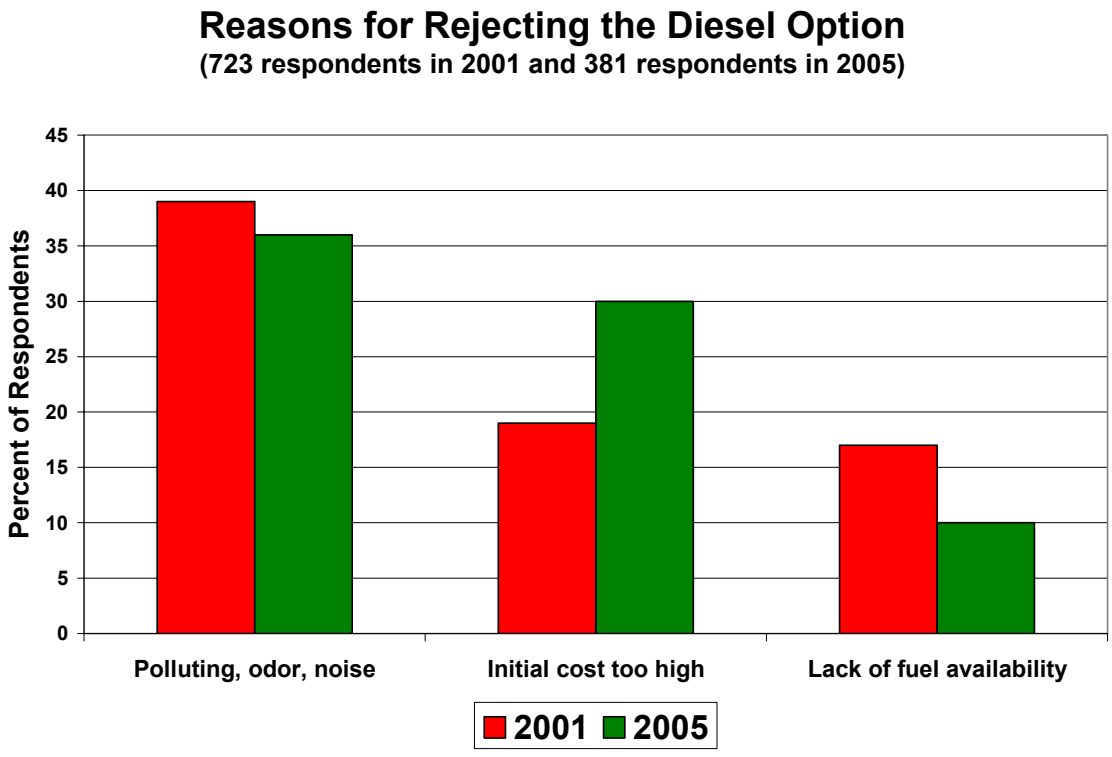
If did not choose diesel, ask:

Q4.3.8: Why did you reject the diesel option? (unaided question)

Table 4.3.8. Reasons for Rejecting a Diesel Option (2001 and 2005)

Reasons	2001 (%)	Sept. 2005 (%)
Environmental (pollutes the air, odor/smell/stink, too much noise, other related mentions)	39	12
Cost (expense, initial cost/$2,000 more, other related mentions)	19	30
Lack of fuel availability	17	10
Don't know enough/know nothing about it/never owned one	11	5
Engine problems (difficult to start in winter, other related mentions)	8	*
Just don't like diesel/husband doesn't like diesel	7	*
Prefer/used to/satisfied with gasoline	5	*
Other	4	9
Don't know	4	*

Source: For 2001: ORC for NREL (2001c), Study No. 710288, N=723. For 2005: ORC for NREL (2005b), Study No. 714388, N=1,042
Note: Percentages do not total 100, because each respondent could volunteer more than one response.



If chose diesel, ask:

Q4.3.9: Why did you choose the diesel option? (unaided question)

Table 4.3.9. Reasons for Choosing a Diesel Option (2001 and 2005)

Reasons	2001 (%)	Sept. 2005 (%)
Fuel economy (better gas mileage/fuel economy, 40% better mileage/miles per gallon)	46	42
Cost (saves money/pays for itself over time, cheaper than gasoline, economical)	34	41
Dependability (diesel engine lasts longer, more reliable)	12	9
Environmental (burns cleaner, other related mentions)	10	7
I have/drive vehicle with diesel engine	4	3
More power/horsepower	3	3
Other /don't know	10	9

Source: For 2001: ORC for NREL (2001c), Study No. 710288, N=266. For 2005: ORC for NREL (2005b), Study No. 714388, N=1,042

Note: Percentages do not total 100, because each respondent could volunteer more than one response.

General Preferences

Q4.3.10: Which one of the following are you planning to purchase for your next household vehicle?

Table 4.3.10. Vehicle-Purchase Preferences (2004 and 2005)

Type of Vehicle	2004	May 2005	September 2005
Large car, same size or larger than a Honda Accord, Chevy Malibu, or Toyota Camry	28	25	22
SUV or sport utility vehicle	23	17	17
Small car, smaller than a Honda Accord, Chevy Malibu, or Toyota Camry	20	24	33
Pickup truck or large van	18	15	14
Minivan	6	9	9
Other/ don't know	4	9	4
Do not plan to purchase new household vehicle	N/A	N/A	**
Total	99	99	99

Source: ORC for NREL (2004a), Study No. 713218, N=1,000. For May 2005: ORC for NREL (2005a), N = 1,012. For September 2005: ORC for NREL (2005b), Study No. 714388, N=1,042

** Because "don't plan to purchase new household vehicle" was not an optional response during the first two surveys, we have normalized the September 2005 results to reflect that difference.

Q4.3.11: When you purchase your next household vehicle, how likely are you to buy each of the following?

Would you say you definitely will buy it, you would be very likely to buy it, you would be likely to buy it, you would be not likely to buy it or you definitely won't buy it?

Table 4.3.11. Vehicle-Purchase Preferences – Hybrid-electric vs. Diesel (2004)

Type of Vehicle	Percent	
	Hybrid-electric	Diesel
Definitely will buy	7	4
Very likely to buy	8	4
Likely to buy	27	14
Not likely to buy	31	36
Definitely won't buy	20	38
Don't know	6	3
Total	99	99

Source: ORC for NREL (2004a), Study No. 713218, N=1,000

Q4.3.12: Suppose you were given an extra $1,000 that you must spend on acceleration, fuel economy and/or the ability to tow, when buying your next vehicle. How much would you spend on each attribute? You can spend all the money on one attribute or split it among two or three attributes.

Table 4.3.12. Priority on Vehicle Attributes (2004)

Attribute	Dollars
Fuel economy	$609
Acceleration	$248
Ability to tow	$143
Total	$1,000

Source: ORC for NREL (2004a), Study No. 713218, N=1,000

Q4.3.13: Which one of the following are you planning to purchase for your next household vehicle?

Table 4.3.13. Vehicle-Purchase Preferences (May 2005)

Type of Vehicle	Percent
A new vehicle in fewer than 3 years	24
A new vehicle in 3 to 6 years	20
A new vehicle in 7 or more years	7
A used vehicle in fewer than 3 years	18
A used vehicle in 3 to 6 years	14
A used vehicle in 7 or more years	4
Don't drive	3
Don't know/do not plan to purchase household vehicle	9
Total	99

Source: ORC for NREL (2005a), N = 1,012.

Appendix A

ORC STUDY #714388, VEHICLE FUEL EFFICIENCY

SEPTEMBER 22, 2005

TABLE 2.2.3 (A)

What has been your or your family's primary response with regard to your vehicle or vehicle travel and the currently high gasoline prices? Anything else? - Unaided

		Household Income						H.H. Size			Children In H.H.				Education			
	Total	LT $25K	$25K-LT $35K	$35K-LT $50K	$50K-LT $75K	$75K Or More	Dual Income H.H.	1	2	3 Or More	None	Total	Under 12	12-17	HS Incomplete	HS Grad	Coll Incomplete	Coll Grad
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)
Unweighted Total	1042	173	89	161	180	252	404	179	408	452	679	356	252	179	84	308	262	366
Weighted Total	1000	173	90*	164	173	230	373	146	348	501	589	403	294	194	91*	295	261	332
Drive Less (Net)	444	80	39	78	88	85	158	61	145	238	245	196	143	97	39	117	130	157
	44%	46%	43%	48%	51%F	37%	42%	42%	41%	47%	42%	49%K	49%	50%	42%	39%	50%P	47%
Travel less	179	30	21	31	34	35	65	23	57	98	100	78	59	37	13	41	58	65
	18%	17%	23%	19%	20%	15%	17%	16%	16%	20%	17%	19%	20%	19%	14%	14%	22%P	20%
Drive less	106	22	3	23	16	23	33	17	31	57	53	51	37	24	10	27	28	41
	11%	13%C	4%	14%C	9%	10%	9%	12%	9%	11%	9%	13%	13%	12%	11%	9%	11%	12%
Only make necessary trips/Don't drive unless have to	78	13	9	12	21	12	31	11	29	37	50	27	16	16	6	28	15	27
	8%	8%	10%	7%	12%F	5%	8%	7%	8%	7%	9%	7%	6%	8%	6%	10%	6%	8%
Consolidate trips/errands	38	7	3	6	3	14	14	7	11	20	21	18	12	11	0	10	10	19
	4%	4%	3%	3%	2%	6%E	4%	5%	3%	4%	4%	4%	4%	6%	0	3%	4%	6%O
Car pool	22	2	0	7	4	7	12	0	5	16	10	12	6	7	3	2	7	10
	2%	1%	0	4%	2%	3%	3%	0	2%	3%H	2%	3%	2%	4%	3%	1%	3%	3%P
Don't travel	18	4	3	1	3	2	7	2	6	10	8	9	6	2	4	7	5	2
	2%	2%	4%	1%	2%	1%	2%	1%	2%	2%	1%	2%	2%	1%	4%R	2%	2%	1%
Don't go anywhere	16	3	1	2	5	4	5	1	5	9	6	10	9	4	3	4	2	7
	2%	1%	1%	1%	3%	2%	1%	1%	1%	2%	1%	2%	3%	2%	3%	1%	1%	2%
Walk more	15	2	0	5	4	1	4	2	1	13	5	11	10	7	3	5	6	1
	2%	1%	0	3%F	3%	*	1%	1%	*	3%I	1%	3%K	3%	4%	4%R	2%	2%R	*
Conserving gas/ Conservation	12	2	0	3	4	0	1	2	4	6	9	3	3	1	0	3	4	5
	1%	1%	0	2%	2%F	0	*	2%	1%	1%	1%	1%	1%	1%	0	1%	1%	1%
Take bus	10	3	1	1	2	1	4	1	5	4	8	2	1	2	0	3	3	5
	1%	2%	1%	1%	1%	*	1%	1%	1%	1%	1%	1%	*	1%	0	1%	1%	1%

Proportions/Means: Columns Tested (5% risk level) - B/C/D/E/F - H/I/J - K/L - O/P/Q/R
Overlap formulae used. * small base

TABLE 2.2.3 (B)

What has been your or your family's primary response with regard to your vehicle or vehicle travel and the currently high gasoline prices? Anything else? - Unaided

		Household Income						H.H. Size			Children In H.H.				Education			
	Total	LT $25K	$25K-LT $35K	$35K-LT $50K	$50K-LT $75K	$75K Or More	Dual Income H.H.	1	2	3 Or More	None	Total	Under 12	12-17	HS Incom-plete	HS Grad	Coll Incom-plete	Coll Grad
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)
Weighted Total	1000	173	90*	164	173	230	373	146	348	501	589	403	294	194	91*	295	261	332
Ride bike more	7	1	1	1	4	0	4	3	0	4	3	4	4	3	1	1	4	2
	1%	*	2%	1%	3%F	0	1%	2%I	0	1%	1%	1%	1%	2%	1%	*	2%	1%
All other drive less mentions	16	4	1	1	4	3	6	5	6	5	12	4	4	2	2	3	6	5
	2%	2%	2%	*	2%	1%	2%	4%J	2%	1%	2%	1%	1%	1%	3%	1%	2%	1%
No effect/No change/Travel as often	158	20	14	20	22	56	63	27	67	64	108	50	29	27	11	40	36	67
	16%	11%	16%	12%	13%	25%BDE	17%	19%	19%J	13%	18%L	12%	10%	14%	12%	13%	14%	20%P
Gas prices are ridiculous/ outrageous/too high	125	32	10	21	18	26	49	19	35	72	68	58	52	23	18	49	29	24
	13%	19%E	11%	13%	10%	11%	13%	13%	10%	14%	12%	14%	18%	12%	19%R	17%R	11%	7%
Don't like it/Unhappy/Angry	77	12	7	17	10	18	32	10	31	36	44	33	21	17	11	23	21	21
	8%	7%	8%	11%	6%	8%	8%	7%	9%	7%	7%	8%	7%	9%	12%	8%	8%	6%
Just pay the price/Using gas/driving is a necessity	53	0	7	12	12	13	21	4	20	29	32	21	15	11	3	19	13	17
	5%	0	8%B	7%B	7%B	6%B	6%	3%	6%	6%	5%	5%	5%	6%	3%	6%	5%	5%
Use most fuel-efficient vehicle I own	25	0	2	1	8	10	11	1	8	17	13	12	7	7	0	6	10	9
	3%	0	3%	1%	5%BD	4%BD	3%	1%	2%	3%	2%	3%	2%	4%	0	2%	4%	3%
Gas prices are result of price gouging/corruption, etc.	22	2	2	5	3	6	11	3	9	10	17	6	4	4	1	9	4	8
	2%	1%	2%	3%	2%	3%	3%	2%	3%	2%	3%	1%	1%	2%	1%	3%	2%	3%
Changed Vehicle (Net)	22	3	1	2	7	3	10	2	10	9	12	9	6	6	0	4	3	14
	2%	2%	1%	1%	4%	1%	3%	1%	3%	2%	2%	2%	2%	3%	0	1%	1%	4%PQ
Bought more fuel-efficient vehicle	11	1	1	2	3	1	5	1	8	3	8	3	2	3	0	2	2	6
	1%	1%	1%	1%	2%	*	1%	1%	2%J	1%	1%	1%	1%	1%	0	1%	1%	2%
Sold/Traded in vehicle	4	0	0	1	2	1	2	1	1	3	2	3	2	2	0	1	1	3
	*	0	0	1%	1%	1%	1%	1%	*	1%	*	1%	1%	1%	0	*	*	1%
All other changed vehicle mentions	8	2	0	0	3	2	4	1	3	4	4	4	2	2	0	1	1	6
	1%	1%	0	0	2%	1%	1%	1%	1%	1%	1%	1%	1%	1%	0	*	1%	2%

Proportions/Means: Columns Tested (5% risk level) - B/C/D/E/F - H/I/J - K/L - O/P/Q/R
Overlap formulae used. * small base

TABLE 2.2.3 (C)

What has been your or your family's primary response with regard to your vehicle or vehicle travel and the currently high gasoline prices? Anything else? - Unaided

		Household Income						H.H. Size			Children In H.H.				Education			
	Total	LT $25K	$25K-LT $35K	$35K-LT $50K	$50K-LT $75K	$75K Or More	Dual Income H.H.	1	2	3 Or More	None	Total	Under 12	12-17	HS Incom-plete	HS Grad	Coll Incom-plete	Coll Grad
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)
Weighted Total	1000	173	90*	164	173	230	373	146	348	501	589	403	294	194	91*	295	261	332
Don't own car/Don't know how to drive	20 2%	9 5%EF	1 1%	5 3%E	0 0	3 1%	2 *	9 6%IJ	8 2%J	3 1%	19 3%L	1 *	1 *	1 *	5 5%R	10 3%R	4 2%	2 *
Other	93 9%	18 10%	8 9%	11 7%	14 8%	28 12%	38 10%	19 13%	28 8%	44 9%	59 10%	32 8%	26 9%	15 8%	6 6%	26 9%	24 9%	35 10%
Don't know	56 6%	16 9%D	5 6%	4 3%	7 4%	10 4%	18 5%	3 2%	21 6%	31 6%	34 6%	22 6%	15 5%	10 5%	10 10%R	23 8%R	14 5%	8 2%

Proportions/Means: Columns Tested (5% risk level) - B/C/D/E/F - H/I/J - K/L - O/P/Q/R
Overlap formulae used. * small base

TABLE 2.2.4

If these high gasoline prices continued for the next several years, with respect to purchasing a new vehicle, how much more efficient would you want the vehicle you purchase to be? Would you say... - Aided

		Household Income						H.H. Size			Children In H.H.				Education			
	Total	LT $25K	$25K-LT $35K	$35K-LT $50K	$50K-LT $75K	$75K Or More	Dual Income H.H.	1	2	3 Or More	None	Total	Under 12	12-17	HS Incom-plete	HS Grad	Coll Incom-plete	Coll Grad
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)
Unweighted Total	1042	173	89	161	180	252	404	179	408	452	679	356	252	179	84	308	262	366
Weighted Total	1000	173	90*	164	173	230	373	146	348	501	589	403	294	194	91*	295	261	332
25% or less (Net)	205	37	11	25	41	59	91	23	80	101	117	86	60	46	16	59	55	72
	20%	21%	12%	15%	24%C	26%CD	24%	16%	23%	20%	20%	21%	20%	24%	18%	20%	21%	22%
0 to 15% more efficient (7.5)	94	20	7	11	17	25	38	11	33	50	50	42	32	22	6	30	24	33
	9%	12%	7%	7%	10%	11%	10%	7%	9%	10%	9%	11%	11%	12%	6%	10%	9%	10%
16 to 25% more efficient (20.5)	111	17	4	14	24	34	54	13	48	51	67	43	28	24	10	29	31	39
	11%	10%	5%	8%	14%C	15%C	14%	9%	14%	10%	11%	11%	9%	12%	11%	10%	12%	12%
26% or more (Net)	663	107	63	117	120	156	243	87	223	353	380	281	207	136	52	198	175	226
	66%	62%	71%	71%	69%	68%	65%	59%	64%	70%H	64%	70%	70%	70%	57%	67%	67%	68%
26 to 49% more efficient (37.5)	121	9	13	18	24	38	54	17	48	56	76	45	37	21	4	35	30	50
	12%	5%	14%B	11%	14%B	16%B	14%	12%	14%	11%	13%	11%	12%	11%	4%	12%	11%	15%O
50% or greater increase in efficiency (55)	542	98	50	99	96	119	189	70	176	297	303	237	170	114	49	163	146	175
	54%	57%	56%	60%	55%	52%	51%	48%	50%	59%HI	52%	59%K	58%	59%	53%	55%	56%	53%
Do not plan to purchase new vehicle (vol.)	111	24	15	16	12	11	32	32	38	36	78	28	21	11	18	28	30	29
	11%	14%EF	17%EF	10%	7%	5%	9%	22%IJ	11%	7%	13%L	7%	7%	5%	19%PR	9%	11%	9%
Don't know/Don't drive	22	5	1	6	0	4	7	4	7	11	14	8	6	2	5	10	2	5
	2%	3%E	1%	4%E	0	2%	2%	3%	2%	2%	2%	2%	2%	1%	6%QR	3%Q	1%	1%
Mean	43.0	43.3	45.8	45.6F	42.2	41.0	41.3	43.7	41.7	43.7	42.9	43.3	43.2	42.6	44.9	43.2	43.2	42.2
Standard Deviation	17.19	18.37	15.42	15.79	17.35	17.57	17.54	16.70	17.39	17.16	17.00	17.39	17.40	17.82	16.88	17.34	17.17	17.22
Standard Error	0.57	1.54	1.82	1.33	1.35	1.15	0.92	1.44	0.92	0.85	0.71	0.96	1.15	1.38	2.13	1.06	1.14	0.95

Proportions/Means: Columns Tested (5% risk level) - B/C/D/E/F - H/I/J - K/L - O/P/Q/R
Overlap formulae used. * small base

TABLE 2.2.5 (A)

If these high gasoline prices continued for the next several years, what actions would you take with respect to driving less? Would you say you would reduce the miles you travel by... - Aided

		Household Income						H.H. Size			Children In H.H.				Education			
	Total	LT $25K	$25K-LT $35K	$35K-LT $50K	$50K-LT $75K	$75K Or More	Dual Income H.H.	1	2	3 Or More	None	Total	Under 12	12-17	HS Incom-plete	HS Grad	Coll Incom-plete	Coll Grad
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)
Unweighted Total	1042	173	89	161	180	252	404	179	408	452	679	356	252	179	84	308	262	366
Weighted Total	1000	173	90*	164	173	230	373	146	348	501	589	403	294	194	91*	295	261	332
Any (Net)	829	142	75	145	147	197	318	112	291	425	478	346	246	175	65	249	220	284
	83%	82%	84%	88%	85%	86%	85%	76%	83%	85%H	81%	86%	84%	90%	72%	85%O	84%O	86%O
25% or less (Subnet)	514	56	45	85	102	140	215	75	185	254	301	212	153	108	37	140	127	202
	51%	32%	50%B	52%B	59%B	61%B	58%	51%	53%	51%	51%	53%	52%	55%	40%	48%	49%	61%OPQ
Less than 5% (4)	162	19	16	30	31	46	71	23	45	94	74	88	59	38	14	43	43	60
	16%	11%	18%	18%	18%	20%B	19%	16%	13%	19%I	13%	22%K	20%	20%	15%	15%	17%	18%
5 to 15% (10)	160	20	15	27	32	41	57	28	64	68	109	52	43	29	9	51	39	59
	16%	11%	16%	16%	19%	18%	15%	19%	18%	14%	18%L	13%	15%	15%	10%	17%	15%	18%
16 to 25% (20.5)	191	18	15	28	39	53	87	24	76	91	119	72	51	40	14	47	45	83
	19%	10%	16%	17%	23%B	23%B	23%	16%	22%	18%	20%	18%	17%	21%	16%	16%	17%	25%PQ
26% or more (Subnet)	315	86	30	59	44	58	103	37	106	171	177	134	93	67	28	109	93	82
	31%	50%CDEF	34%	36%F	25%	25%	28%	25%	30%	34%H	30%	33%	32%	34%	31%	37%R	36%R	25%
26 to 49% (37.5)	88	17	4	18	13	23	32	7	29	52	47	41	29	18	4	25	31	28
	9%	10%	5%	11%	7%	10%	9%	5%	8%	10%H	8%	10%	10%	9%	4%	8%	12%	8%
50% or more (55)	227	69	26	41	31	35	71	30	77	119	130	93	63	49	25	84	62	54
	23%	40%DEF	29%F	25%F	18%	15%	19%	20%	22%	24%	22%	23%	22%	25%	27%R	29%R	24%R	16%
None (0)	121	21	10	12	19	30	46	20	44	56	77	43	40	13	10	31	35	39
	12%	12%	11%	7%	11%	13%	12%	14%	13%	11%	13%	11%	14%	7%	11%	11%	13%	12%
Don't know/Don't drive	50	11	5	8	8	3	9	14	14	19	33	14	9	7	16	14	6	9
	5%	6%F	5%	5%F	4%	1%	2%	10%IJ	4%	4%	6%	3%	3%	4%	17%PQR	5%	2%	3%
Mean (Including None)	23.1	31.1DEF	24.6	25.1F	20.9	19.6	21.3	20.8	23.0	23.8	22.9	23.1	22.1	24.7	25.6	25.7R	23.8	20.3

Proportions/Means: Columns Tested (5% risk level) - B/C/D/E/F - H/I/J - K/L - O/P/Q/R
Overlap formulae used. * small base

TABLE 2.2.5 (B)

If these high gasoline prices continued for the next several years, what actions would you take with respect to driving less? Would you say you would reduce the miles you travel by... - Aided

		Household Income						H.H. Size			Children In H.H.				Education			
	Total (A)	LT $25K (B)	$25K-LT $35K (C)	$35K-LT $50K (D)	$50K-LT $75K (E)	$75K Or More (F)	Dual Income H.H. (G)	1 (H)	2 (I)	3 Or More (J)	None (K)	Total (L)	Under 12 (M)	12-17 (N)	HS Incom-plete (O)	HS Grad (P)	Coll Incom-plete (Q)	Coll Grad (R)
Weighted Total	1000	173	90*	164	173	230	373	146	348	501	589	403	294	194	91*	295	261	332
Standard Deviation (Including None)	20.57	22.90	22.03	20.81	19.24	18.49	19.53	20.51	20.15	20.83	20.35	20.77	20.60	20.57	22.42	21.58	20.89	18.63
Standard Error (Including None)	0.65	1.81	2.40	1.67	1.47	1.17	0.98	1.62	1.02	1.00	0.80	1.12	1.31	1.56	2.68	1.26	1.31	0.99
Mean (Excluding None)	26.5	35.7CD EF	27.9	27.1F	23.6	22.5	24.4	24.6	26.5	26.9	26.6	26.0	25.6	26.5	29.6R	28.9R	27.5R	23.1
Standard Deviation (Excluding None)	19.89	20.91	21.40	20.33	18.82	18.07	19.01	20.10	19.37	20.17	19.55	20.25	20.03	20.15	21.49	20.77	20.04	18.18
Standard Error (Excluding None)	0.68	1.76	2.49	1.70	1.52	1.24	1.02	1.72	1.05	1.03	0.83	1.16	1.38	1.59	2.77	1.29	1.35	1.03

Proportions/Means: Columns Tested (5% risk level) - B/C/D/E/F - H/I/J - K/L - O/P/Q/R
Overlap formulae used. * small base

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This report has been assembled to provide the U.S. Department of Energy's (DOE's) Office of Energy Efficiency and Renewable Energy (EERE) with an idea of how the American public views various transportation, energy, and environmental issues. The data presented in this report have been drawn from multiple sources: surveys conducted by the Opinion Research Corporation (ORC) for the National Renewable Energy Laboratory (NREL) that are commissioned and funded by EERE, Gallup polls, news organization polls, surveys conducted by independent groups and academic institutions, and other sources.

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