

Attitudes and Awareness of Energy Efficiency and Alternative Energy Resources in West Virginia

Draft Final Report

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Attitudes and Awareness of Energy Efficiency and Alternative Energy Resources in West Virginia

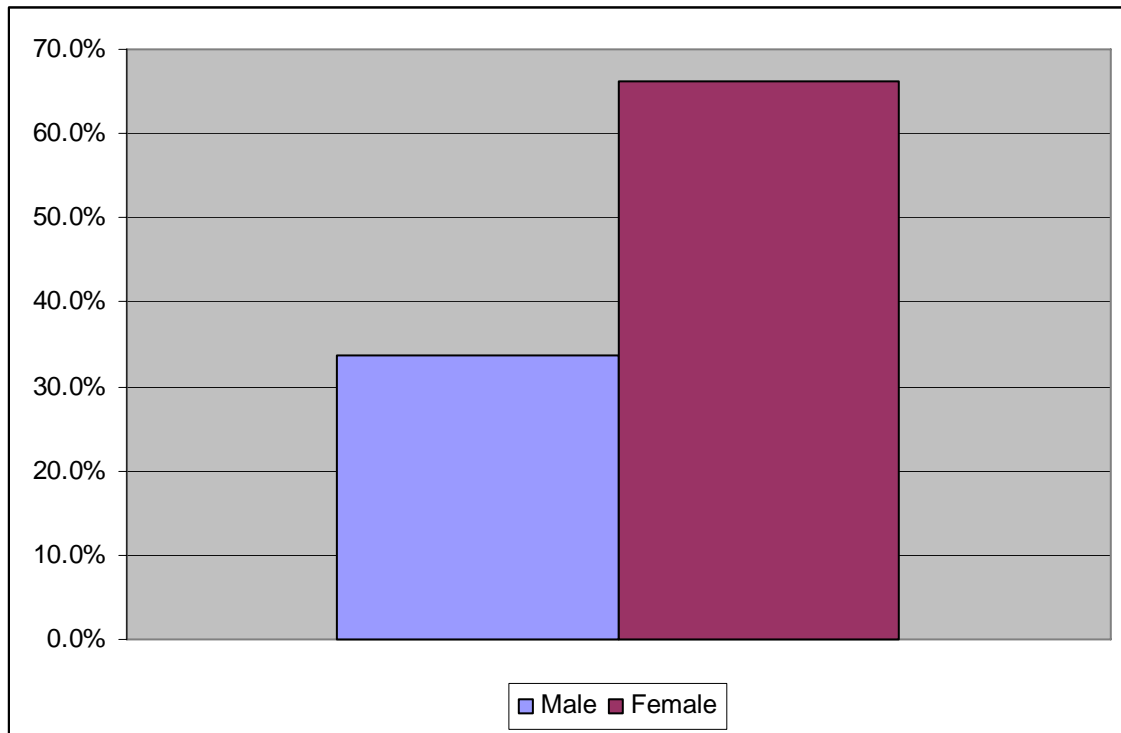
Introduction

The Center for Business and Economic Research (CBER) in partnership with the West Virginia Development Office (WVDO) conducted a telephone survey to gauge the awareness and interest in alternative and renewable energy resources in the State of West Virginia. Participants were selected using random telephone number generation software from a pool of residential phone numbers statewide. The interviews were performed during the month of October 2006 by consultation staff trained by the CBER. The CBER engaged in a brief pilot survey effort to determine the effectiveness of the instrument. No changes were made to the instrument following the pilot period.

A total of 432 valid survey responses were obtained. Interviews that were not completed or lacked responses to a significant portion of the survey questions were purged and are not included in the following tallies.

The gender of the survey respondents was documented but was not directly asked by the interviewers. As illustrated in Figure 1, an overwhelming majority of the survey respondents (just over 66 percent) were female.

Figure 1: Respondent Gender



1. Energy efficiency: To identify interest in energy efficient homes

The questions in the survey's first section were aimed at gauging the respondents' interest in (and awareness of) energy efficient homes and appliances. Respondents were asked four questions on these topics.

- How much of your monthly income do you spend on electricity and natural gas?
- If you were to buy a new home now, how much more would you be willing to pay for an energy efficient home over a standard home?
- Are you aware of the program for rating energy efficient appliances called ENERGY STAR?
- If you are a homeowner, what energy efficient items does your home have?

Approximately 45 percent of respondents indicated that their combined monthly expenditures on electricity and natural gas were between \$50 and \$99. More than 70 percent of respondents indicated that these purchases were less than \$150 per month. 16 percent failed to provide an answer to the question. Responses to this question are provided in Figure 2 and Table 1.

Figure 2: Monthly Household Expenditures on Electricity and Natural Gas

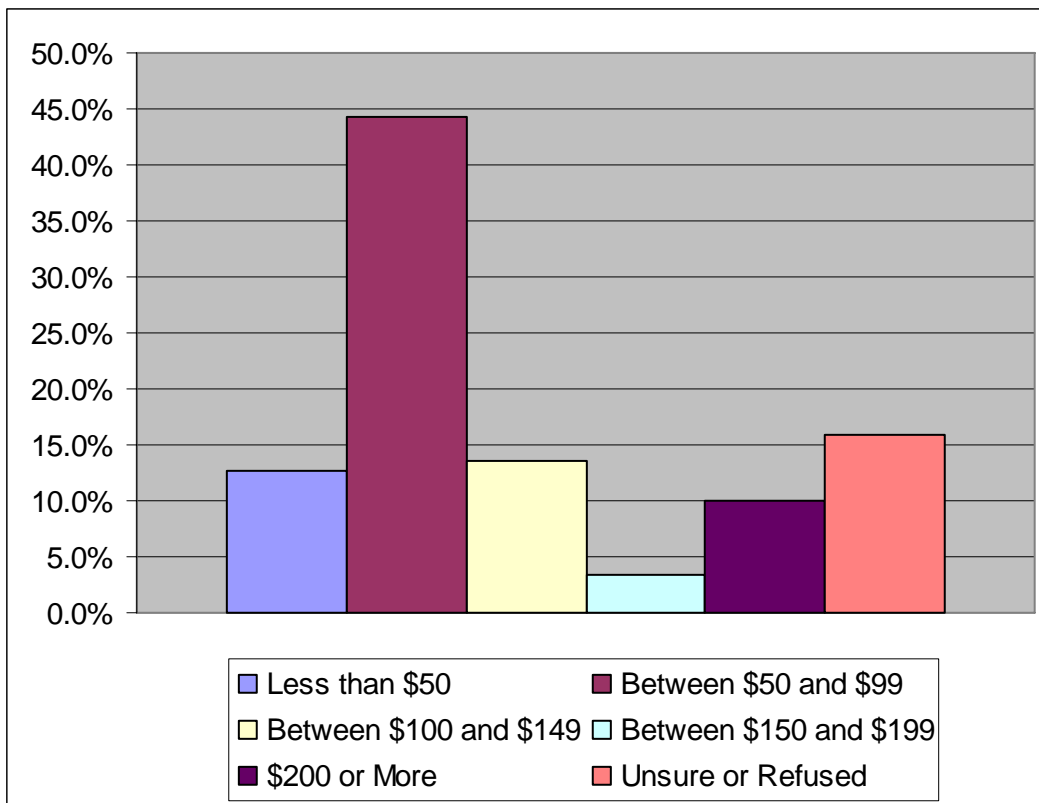


Table 1: Monthly Household Expenditures on Electricity and Natural Gas

| Response | Number | Percentage |
|-------------------------|--------|------------|
| Less than \$50 | 55 | 12.7% |
| Between \$50 and \$99 | 191 | 44.2% |
| Between \$100 and \$149 | 59 | 13.7% |
| Between \$150 and \$199 | 15 | 3.5% |
| \$200 or More | 43 | 10.0% |
| Unsure or Refused | 69 | 16.0% |
| Total | 432 | 100.0% |

Respondents were then asked to consider their willingness to pay more for a new energy efficient home versus a standard home. More than 55 percent of respondents indicated that they were either unwilling to pay any premium (25.9 percent) or were unsure how much they would be willing to pay (29.2 percent). Approximately 12 percent of respondents said they would be willing to pay more than \$5,000 for a new energy efficient home over a standard one. See Figure 3 and Table 2 for more information.

Figure 3: Willingness to Pay More for Energy Efficient Homes

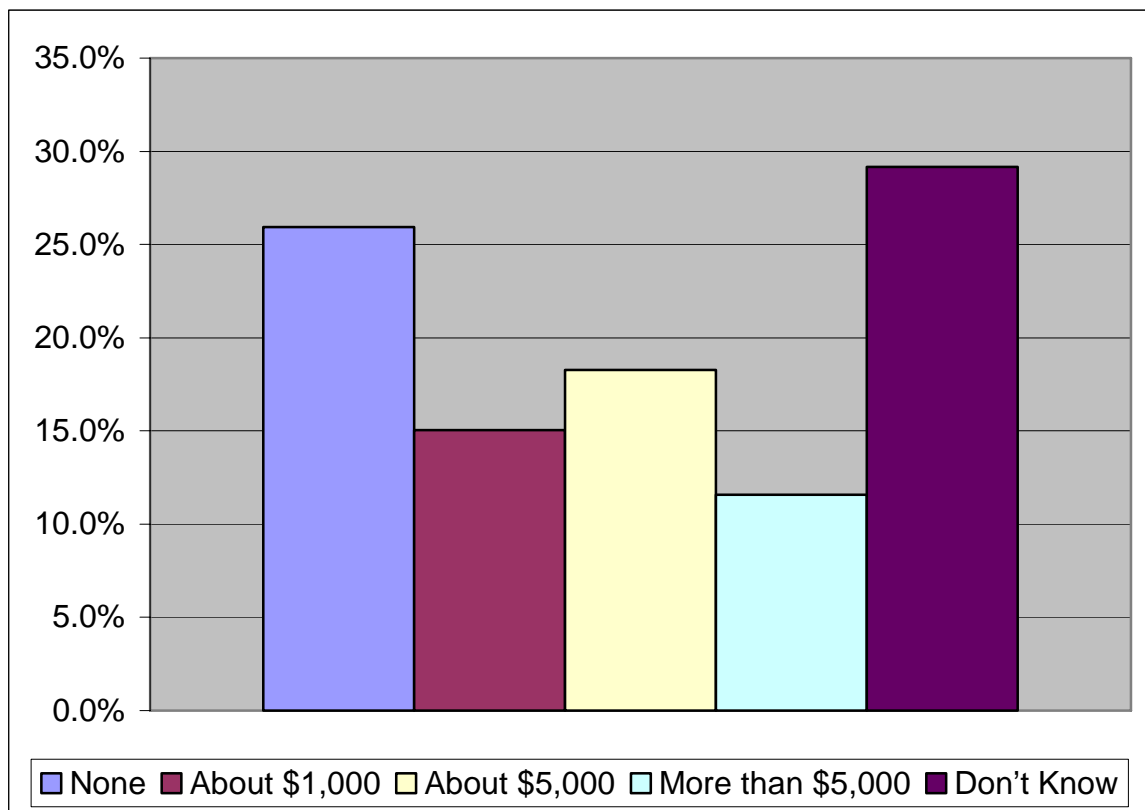


Table 2: Willingness to Pay More for Energy Efficient Homes

| Response | Number | Percentage |
|-------------------|--------|------------|
| None | 112 | 25.9% |
| About \$1,000 | 65 | 15.0% |
| About \$5,000 | 79 | 18.3% |
| More than \$5,000 | 50 | 11.6% |
| Don't Know | 126 | 29.2% |
| Total | 432 | 100.0% |

The next two questions in the survey concerned the ENERGY STAR program (for rating energy efficient appliances) and energy efficient items in homes. As illustrated in Figure 4 and Table 3, nearly 58 percent of respondents indicated that they were not familiar with the ENERGY STAR program. Respondents (who were determined to be householders) were then asked if items on a list of energy efficient improvements and appliances were present in their homes (see Table 4). More than 75 percent indicated the presence of 2 or 3 pane windows; roughly 65 percent have more than 6 inches of insulation in the attic; and nearly 60 percent have insulation in their crawlspace or basement. Among appliances, nearly 60 percent indicated owning an energy efficient refrigerator and approximately 54 percent own an energy efficient washer/dryer. Please see Table 4 for more information.

Figure 4: Awareness of the ENERGY STAR Program

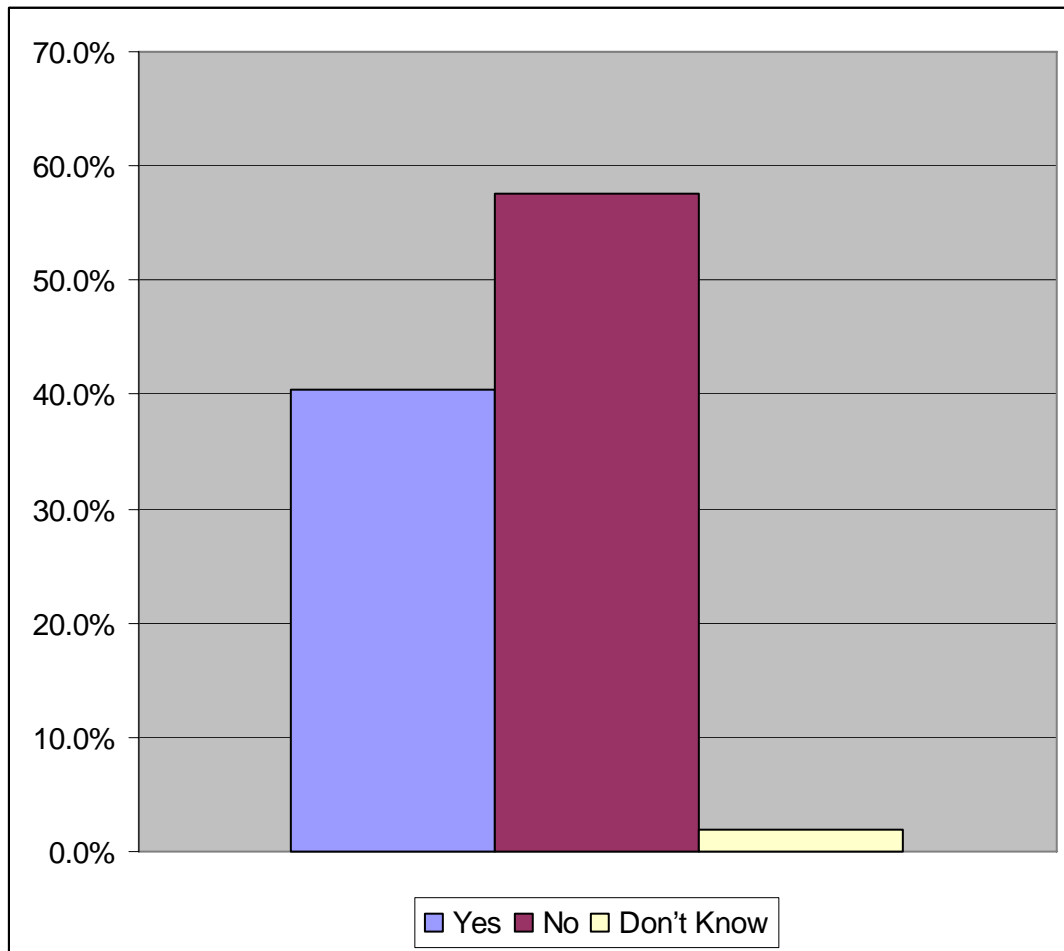


Table 3: Awareness of the ENERGY STAR Program

| Response | Number | Percentage |
|-----------------|---------------|-------------------|
| Yes | 175 | 40.5% |
| No | 249 | 57.6% |
| Don't Know | 8 | 1.9% |
| Total | 432 | 100.0% |

Table 4: Energy Efficient Items In Respondent Homes

| Item | Yes | No | Don't Know | Total |
|--|------------|-----------|-------------------|--------------|
| Compact fluorescent light bulbs | 196 | 213 | 23 | 432 |
| | 45.4% | 49.3% | 5.3% | |
| More than six inches of insulation in the attic | 279 | 82 | 71 | 432 |
| | 64.6% | 19.0% | 16.4% | |
| Insulation in the crawl space or basement | 256 | 111 | 65 | 432 |
| | 59.3% | 25.7% | 15.0% | |
| Two or three-pane windows (or similar) | 326 | 75 | 31 | 432 |
| | 75.5% | 17.4% | 7.2% | |
| Programmable thermostat | 200 | 201 | 31 | 432 |
| | 46.3% | 46.5% | 7.2% | |
| Air conditioner | 208 | 175 | 49 | 432 |
| | 48.1% | 40.5% | 11.3% | |
| Refrigerator | 257 | 122 | 53 | 432 |
| | 59.5% | 28.2% | 12.3% | |
| Freezer | 162 | 218 | 52 | 432 |
| | 37.5% | 50.5% | 12.0% | |
| Washer/dryer | 236 | 155 | 41 | 432 |
| | 54.6% | 35.9% | 9.5% | |
| Water heater | 234 | 147 | 51 | 432 |
| | 54.2% | 34.0% | 11.8% | |
| Dishwasher | 159 | 221 | 52 | 432 |
| | 36.8% | 51.2% | 12.0% | |
| Computer | 145 | 224 | 63 | 432 |
| | 33.6% | 51.9% | 14.6% | |
| Ceiling Fan | 199 | 185 | 48 | 432 |
| | 46.1% | 42.8% | 11.1% | |

2. Renewable energy: To determine interest in renewable energy

The second section of the survey endeavored to determine the respondent's interest in renewable energy and their attitudes toward State support of renewable energy programs. Concerning these topics, respondents were asked the following four questions.

- Should the state of West Virginia promote the purchase of renewable energy such as solar panels, small wind turbines or geothermal systems by homeowners and businesses?
 - If Yes, how should the state promote these purchases?
- Should the state promote investments made to reduce energy use in homes and businesses?
 - If Yes, how should the state promote these investments?
- If your electricity were produced using renewable and alternative resources (wind, solar, waste coal, biomass – wood waste or landfill gas, low-impact hydropower), how much more would you be willing to pay?
- Should the state support a policy allowing electric utility customers to buy renewable and alternative energy?

Nearly 78 percent of respondents felt that the State should promote the purchases of renewable energy by homeowners and businesses (see Figure 5 and Table 5). The respondents were then asked about three methods by which the State could promote such purchases (see Table 6). 79.1 percent of respondents indicated that the State should use Tax Credits as a means to promote the purchase of renewable energy by homeowners and businesses. Nearly 70 percent deemed Rebates as a positive method and approximately two-thirds indicated that Low-interest Loans were appropriate.

Figure 5: State Promotion of Renewable Energy by Homeowners and Businesses

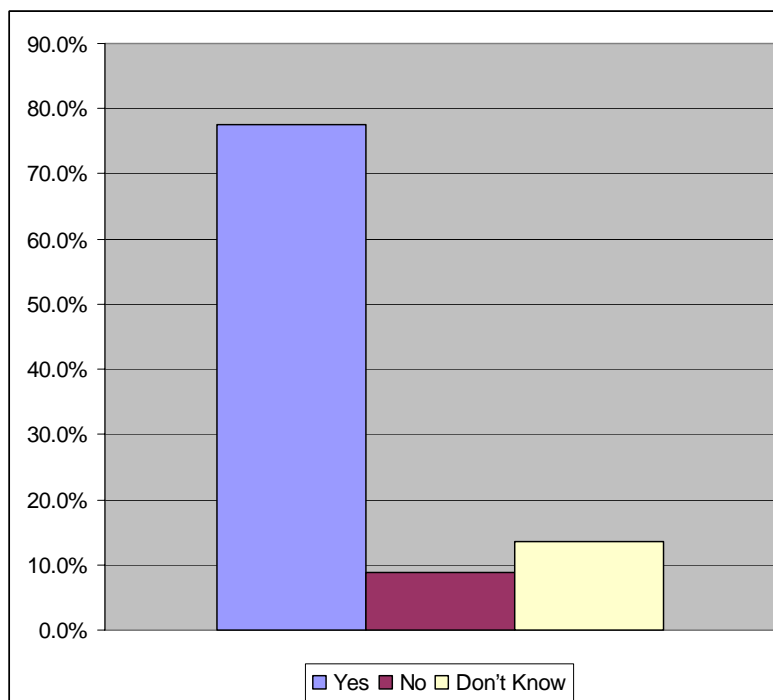


Table 5: State Promotion of Renewable Energy by Homeowners and Businesses

| Response | Number | Percentage |
|------------|--------|------------|
| Yes | 335 | 77.5% |
| No | 38 | 8.8% |
| Don't Know | 59 | 13.7% |
| Total | 432 | 100.0% |

Table 6: How Should the State Promote Purchases of Renewable Energy by Homeowners and Businesses?

| Item | Yes | No | Don't Know | Total |
|---------------------------|--------|-------|------------|-------|
| Tax Credits | 265 | 54 | 16 | 335 |
| | 79.1% | 16.1% | 4.8% | |
| Low-interest Loans | 222 | 95 | 18 | 335 |
| | 66.3% | 28.4% | 5.4% | |
| Rebates | 234 | 81 | 20 | 335 |
| | 69.9% | 24.2% | 6.0% | |
| Other | 13 | 0 | 0 | 13 |
| | 100.0% | 0.0% | 0.0% | |

Nearly 83 percent of those surveyed indicated that the State should promote investments to reduce energy use in homes and businesses (see Figure 6 and Table 7). Again, respondents were asked about three methods by which the State could promote such purchases (see Table 8). The resulting percentages were quite similar to those observed in the prior question. 77.9 percent of respondents indicated that the State should use Tax Credits as a means to promote investments that reduce the energy use by homeowners and businesses. Nearly 70 percent deemed Rebates as a positive method and approximately 64 percent indicated that Low-interest Loans were appropriate.

Among specified responses for an "Other" means of promoting purchases of renewable energy were:

- State Government funds
- discounts on home insurance
- grants
- Using Federal money only
- and educating the public

Figure 6: State Promotion to Reduce Energy Use in Homes and Businesses

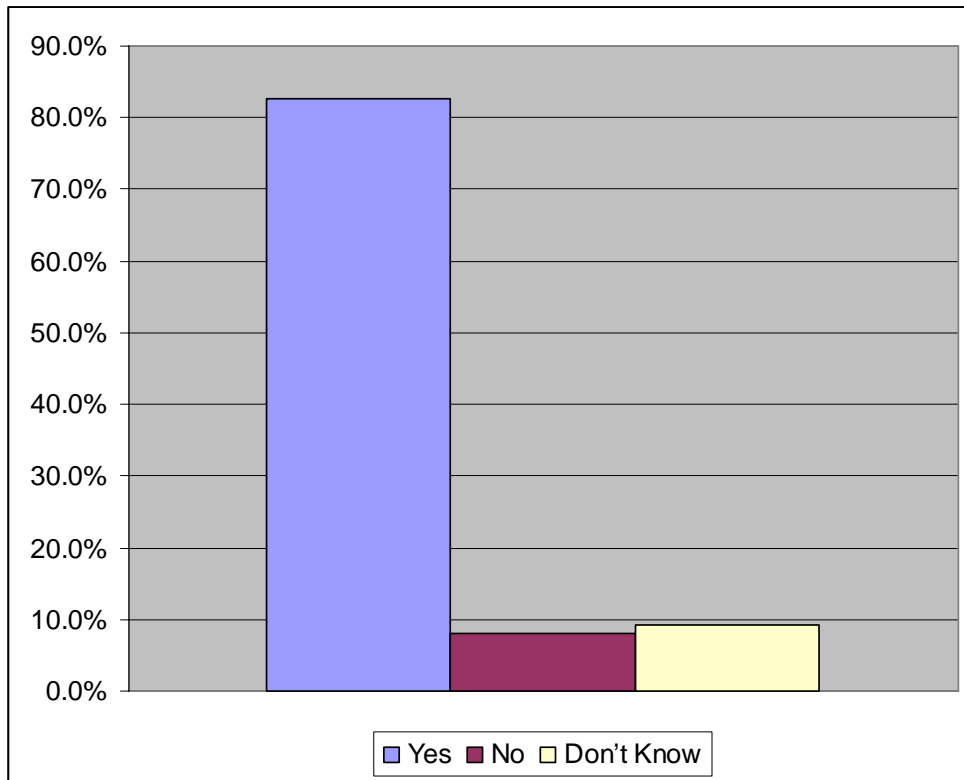


Table 7: State Promotion to Reduce Energy Use in Homes and Businesses

| Response | Number | Percentage |
|------------|--------|------------|
| Yes | 357 | 82.6% |
| No | 35 | 8.1% |
| Don't Know | 40 | 9.3% |
| Total | 432 | 100.0% |

Table 8: How Should the State Promote Reduced Energy Use in Homes and Businesses

| Item | Yes | No | Don't Know | Total |
|---------------------------|-------|-------|------------|-------|
| Tax Credits | 278 | 55 | 24 | 357 |
| | 77.9% | 15.4% | 6.7% | |
| Low-interest Loans | 228 | 99 | 30 | 357 |
| | 63.9% | 27.7% | 8.4% | |
| Rebates | 247 | 83 | 27 | 357 |
| | 69.2% | 23.2% | 7.6% | |
| Other | 14 | 1 | 0 | 15 |
| | 93.3% | 6.7% | 0.0% | |

Respondents were then asked to gauge their willingness to pay a premium for electricity produced using renewable and alternative resources such as wind, solar, waste coal, biomass (i.e. wood waste or landfill gas), or low-impact hydropower. 53.2 percent of those surveyed indicated that they would not be willing to pay any premium for electricity produced by renewable or alternative means. 22 percent were unsure what if any premium they would be willing to pay. Roughly one-quarter of respondents indicated willingness to pay more for this type of electricity. Please see Figure 7 and Table 9 for full results.

Among specified responses for an “Other” means of promoting purchases of reduced energy use were:

- State Government funds
- Grants
- Public education about reducing energy use
- Reduction of energy bills
- Severance taxes on out-of-state coal shipments

Figure 7: Willingness to Pay a Premium for Electricity Produced Using Renewable and Alternative Resources

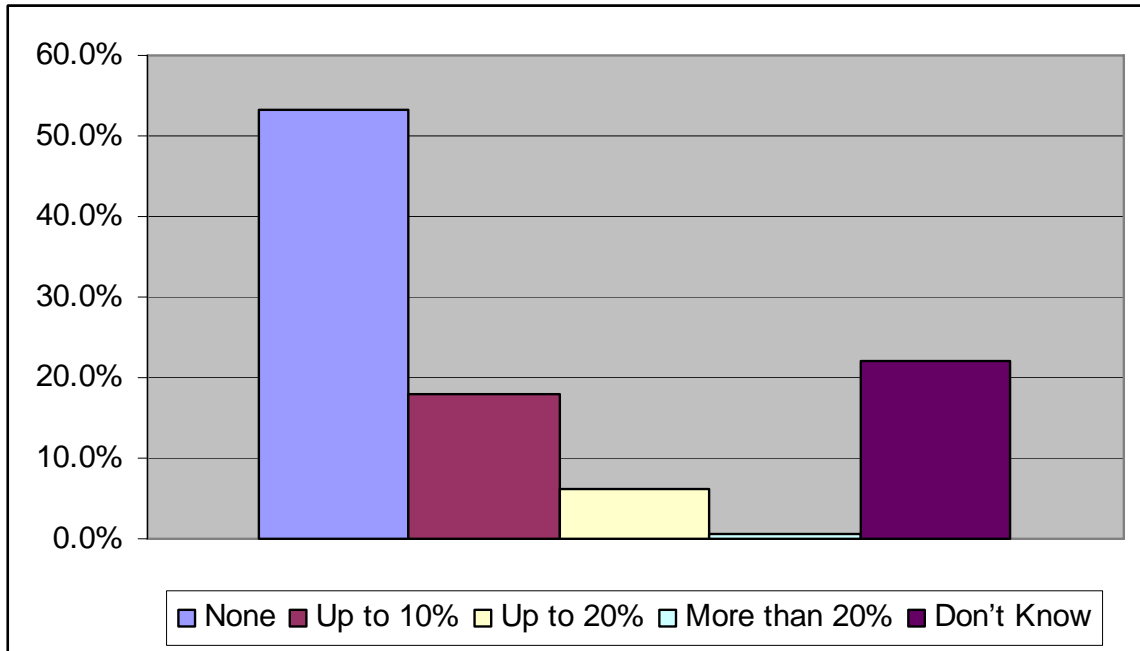


Table 9: Willingness to Pay a Premium for Electricity Produced Using Renewable and Alternative Resources

| Response | Number | Percentage |
|----------------------|--------|------------|
| None | 230 | 53.2% |
| Up to 10 percent | 77 | 17.8% |
| Up to 20 percent | 27 | 6.3% |
| More than 20 percent | 3 | 0.7% |
| Don't Know | 95 | 22.0% |
| Total | 432 | 100.0% |

Respondents were then asked whether the State should support a policy allowing electric utility customers to purchase renewable and alternative energy. Nearly 87 percent of those surveyed indicated positively in that regard (please see Figure 8 and Table 10).

Figure 8: State Policy Allowing Electric Utility Customers to Buy Renewable and Alternative Energy

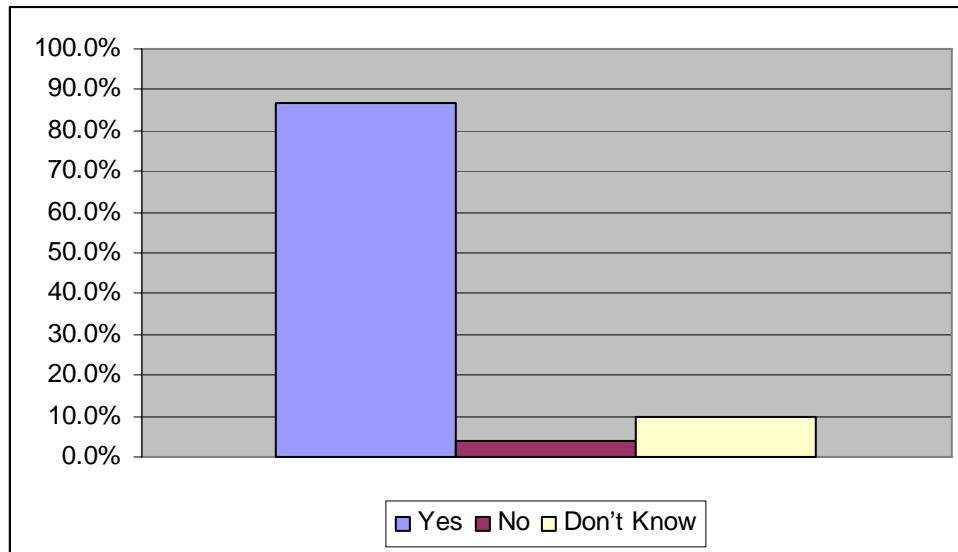


Table 10: State Policy Allowing Electric Utility Customers to Buy Renewable and Alternative Energy

| Response | Number | Percentage |
|------------|--------|------------|
| Yes | 374 | 86.6% |
| No | 16 | 3.7% |
| Don't Know | 42 | 9.7% |
| Total | 432 | 100.0% |

3. Wind: To collect opinion on developing and existing wind power in West Virginia

The survey's third section focused upon the attitudes and opinions toward wind power in the State of West Virginia. Seven questions concerning developing and existing wind power projects in the state were posed to the respondents.

- Do you think West Virginia should encourage more large-scale wind farms as an economic development strategy?
- Do you think West Virginia should support small-scale wind power for home or business use?
- Do you think wind power is beneficial to West Virginia?
- Do you think wind power is beneficial to your community?
 - (If the respondent answered No to either) Can you tell me why?
- Have you seen the turbines (windmills) at the Backbone Mountain/Mountaineer Wind Energy Center facility in Tucker County in person (as opposed to on video or on TV)?
 - If Yes, What do you think of the way they look?

69.2 percent of those surveyed thought that the State should encourage more large-scale wind farms as an economic development strategy. It should be noted that less than 10 percent were opposed to the statement, leaving 21.5 percent unsure (see Figure 9 and Table 11).

Figure 9: State Encouragement of More Large-Scale Wind Farms as an Economic Development Strategy

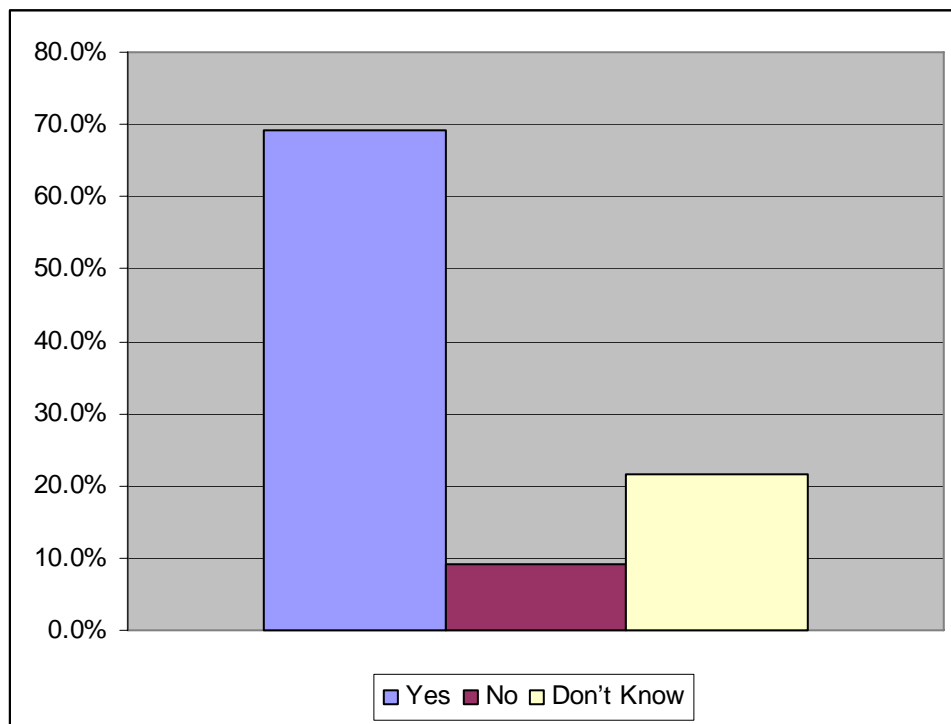


Table 11: State Encouragement of More Large-Scale Wind Farms as an Economic Development Strategy

| Response | Number | Percentage |
|------------|--------|------------|
| Yes | 299 | 69.2% |
| No | 40 | 9.3% |
| Don't Know | 93 | 21.5% |
| Total | 432 | 100.0% |

A slightly higher percentage (70.4 percent) felt that the State should encourage small-scale wind power for home and business use. Again only slightly less than 10 percent was opposed to the strategy (see Figure 10 and Table 12).

Figure 10: State Support of Small-Scale Wind Power For Home or Business Use

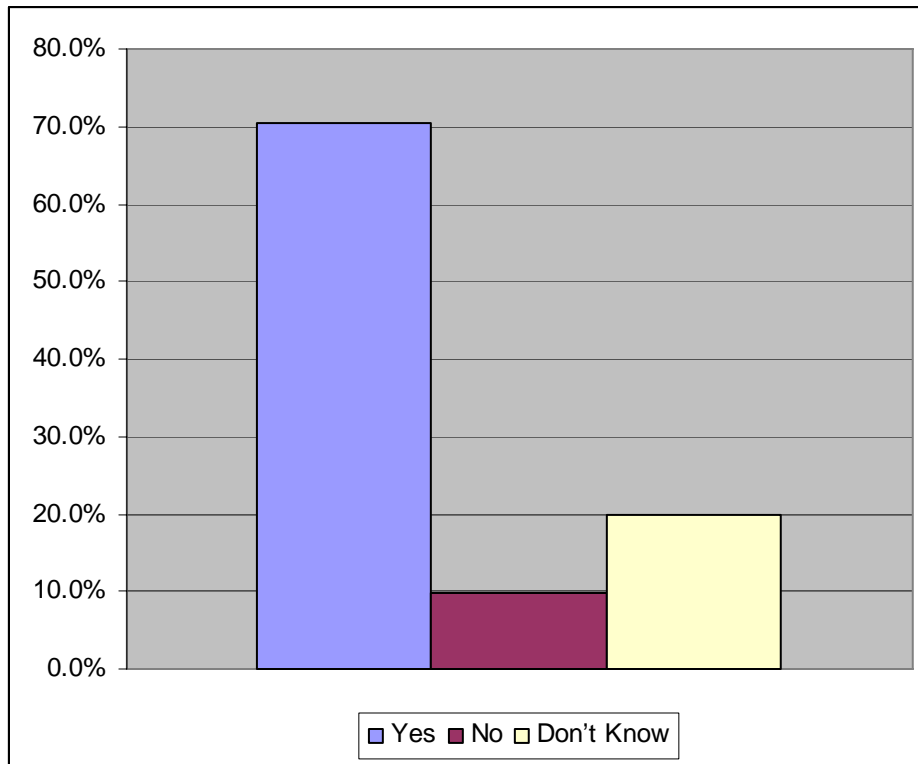


Table 12: State Support of Small-Scale Wind Power For Home or Business Use

| Response | Number | Percentage |
|------------|--------|------------|
| Yes | 304 | 70.4% |
| No | 42 | 9.7% |
| Don't Know | 86 | 19.9% |
| Total | 432 | 100.0% |

The next three questions focused on the benefits of wind power. The respondents were asked if they felt that wind power benefited either the State (see Figure 11 and Table 13) or their community (see Figure 12 and Table 14). 72.5 percent of respondents answered that wind power was beneficial to the State. However, only 64.8 percent felt that their community benefited from wind power. A significant portion of respondents were unsure if wind power was beneficial to either the State or their community (19.9 and 24.1 percent respectively).

Figure 11: Wind Power is Beneficial to West Virginia

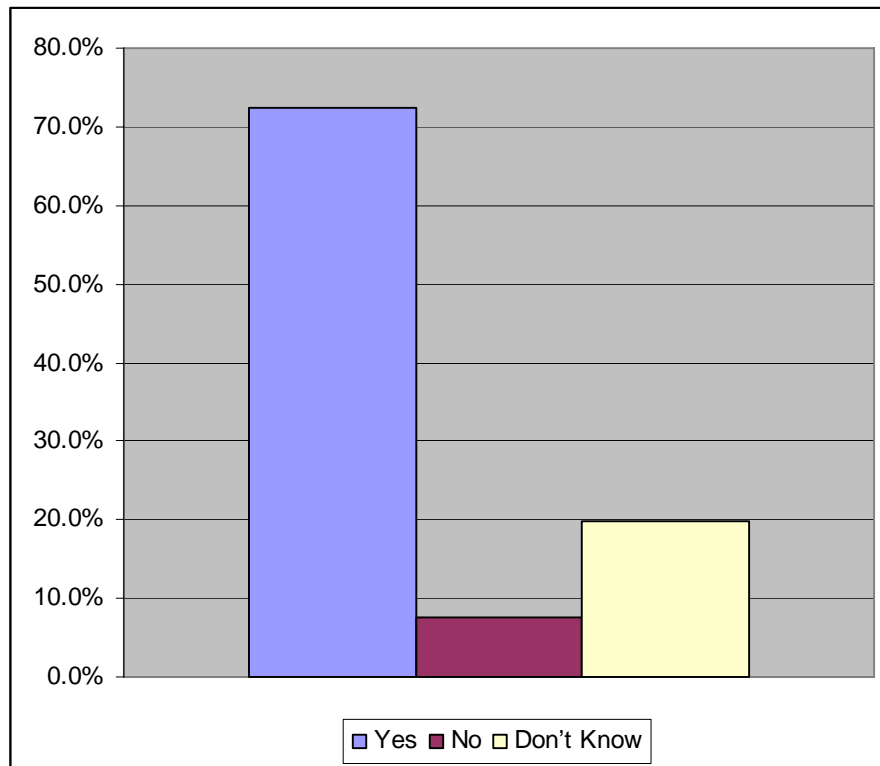


Table 13: Wind Power is Beneficial to West Virginia

| Response | Number | Percentage |
|------------|--------|------------|
| Yes | 313 | 72.5% |
| No | 33 | 7.6% |
| Don't Know | 86 | 19.9% |
| Total | 432 | 100.0% |

Figure 12: Wind Power is Beneficial to My Community

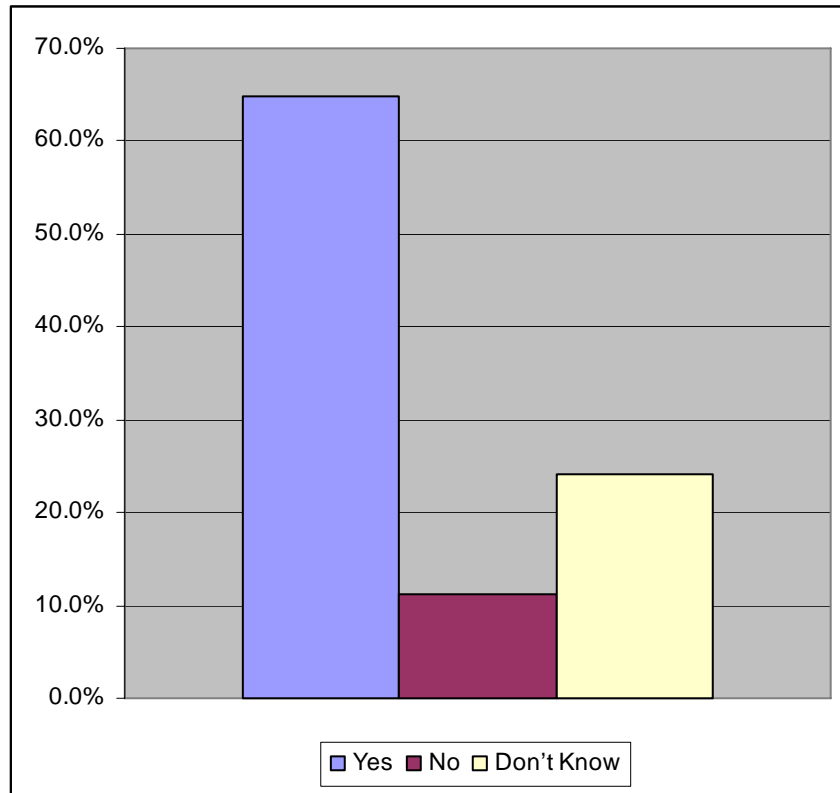


Table 14: Wind Power is Beneficial to My Community

| Response | Number | Percentage |
|------------|--------|------------|
| Yes | 280 | 64.8% |
| No | 48 | 11.1% |
| Don't Know | 104 | 24.1% |
| Total | 432 | 100.0% |

If the respondent answered “No” to either the question about benefits of wind power to the State or their community, they were then asked to select a primary reason from a list of potential options. Only 14 of those answering “No” provided a reason with 8 of those choosing some other reason than those provided. Full responses are given in Table 15.

Table 15: Primary Reason Selected That Wind Power is Not Beneficial to the State or My Community

| Response | Number | Percentage |
|-----------------------------|--------|------------|
| Tourism | 0 | 0.0% |
| Viewshed (Scenic) | 1 | 14.3% |
| Bird/Bat Impacts | 2 | 7.1% |
| Home and/or Property Values | 3 | 21.4% |
| Other | 8 | 57.1% |
| Total | 14 | 100.0% |

Respondents were then asked if they have ever seen the turbines (windmills) at the Backbone Mountain / Mountaineer Wind Energy Center Facility in Tucker County in person. 71.8 percent indicated that they have not seen the windmills (see Figure 13 and Table 16). Only 1 respondent was unsure whether they had seen the turbines or not.

Figure 13: Respondents Who Have Seen the Turbines at Backbone Mountain in Tucker County in Person

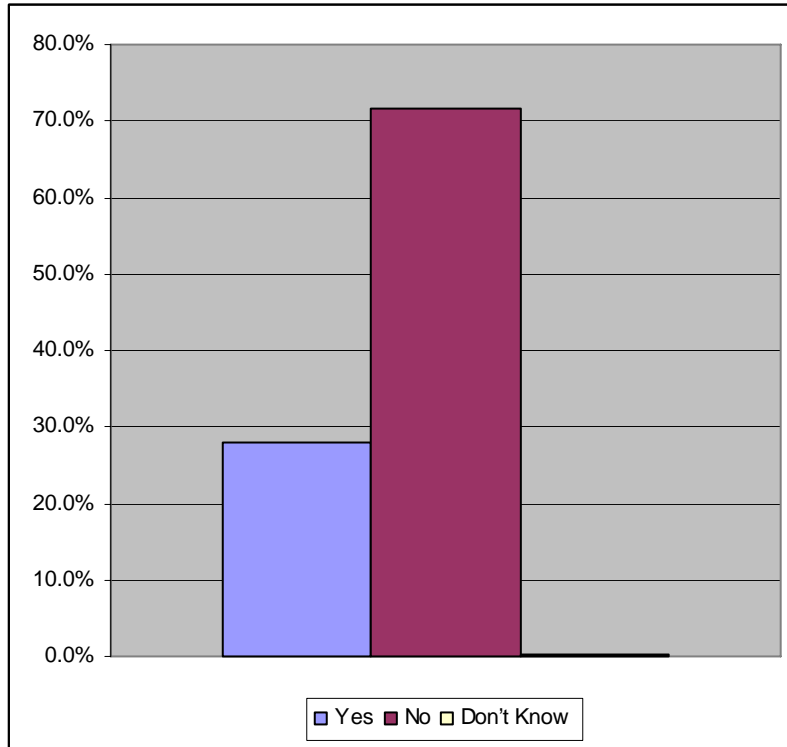


Table 16: Respondents Who Have Seen the Turbines at Backbone Mountain in Tucker County in Person

| Response | Number | Percentage |
|------------|--------|------------|
| Yes | 121 | 28.0% |
| No | 310 | 71.8% |
| Don't Know | 1 | 0.2% |
| Total | 432 | 100.0% |

Of the 121 respondents who indicated that they have seen them, 71.1 percent felt that they were either “attractive” or “look O.K.” (33.1 and 38.0 percent respectively). Only 9.1 percent felt they were “unattractive”. More information is available in Figure 14 and Table 17.

Figure 14: Opinions Regarding Appearance of Turbines at Backbone Mountain

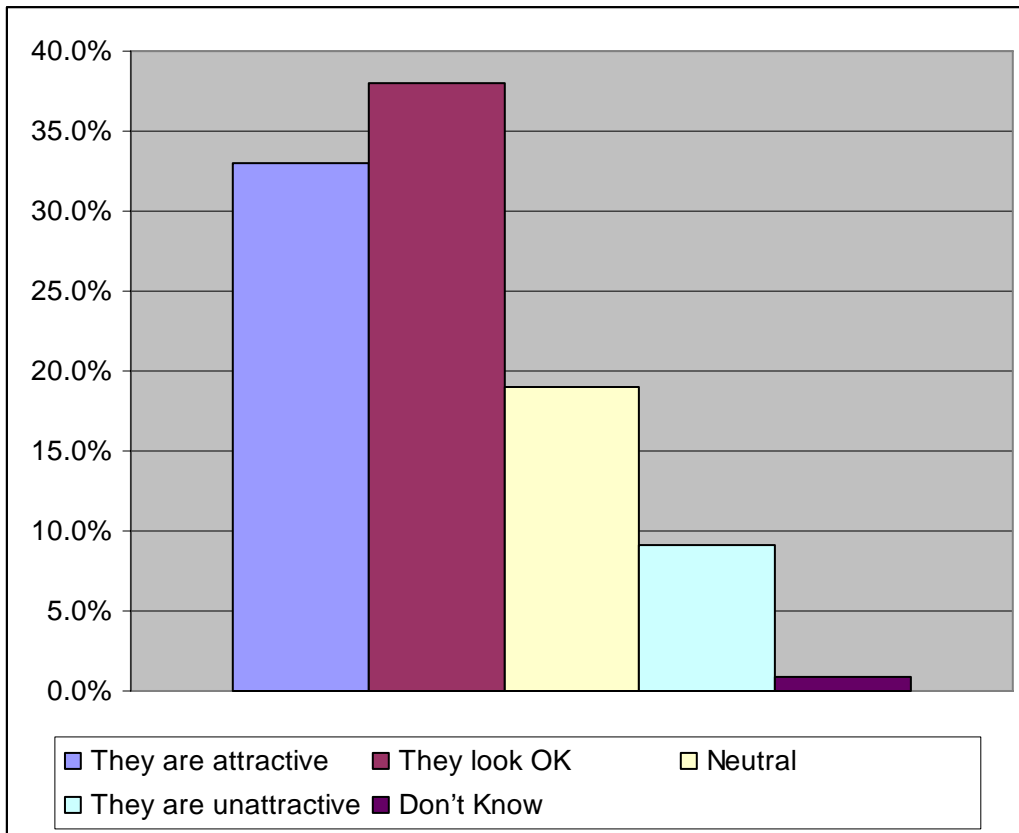


Table 17: Opinions Regarding Appearance of Turbines at Backbone Mountain

| Response | Number | Percentage |
|-----------------------|--------|------------|
| They are attractive | 40 | 33.1% |
| They look OK | 46 | 38.0% |
| Neutral | 23 | 19.0% |
| They are unattractive | 11 | 9.1% |
| Don't Know | 1 | 0.8% |
| Total | 121 | 100.0% |

4. Electricity mix: To identify knowledge about West Virginia's electricity supply

The next set of questions posed to respondents dealt with West Virginia's electric supply. Respondents were asked three questions.

- What percentage of West Virginia's electricity do you think is generated with coal?
- How much do you think West Virginia residents pay for electricity compared to other states?
- Do you feel that more of our nation's electricity should come from West Virginia coal?

Nearly 73 percent of those surveyed believed that at least half of West Virginia's electricity is generated from coal. 52.3 percent believed that at least three-quarters and 22.0 percent believed that close to 100 percent of West Virginia's electricity is generated from coal. 19 percent were unsure. These results are illustrated in Figure 15 and Table 18.

Figure 15: Perceived Portion of West Virginia Electricity Generated from Coal

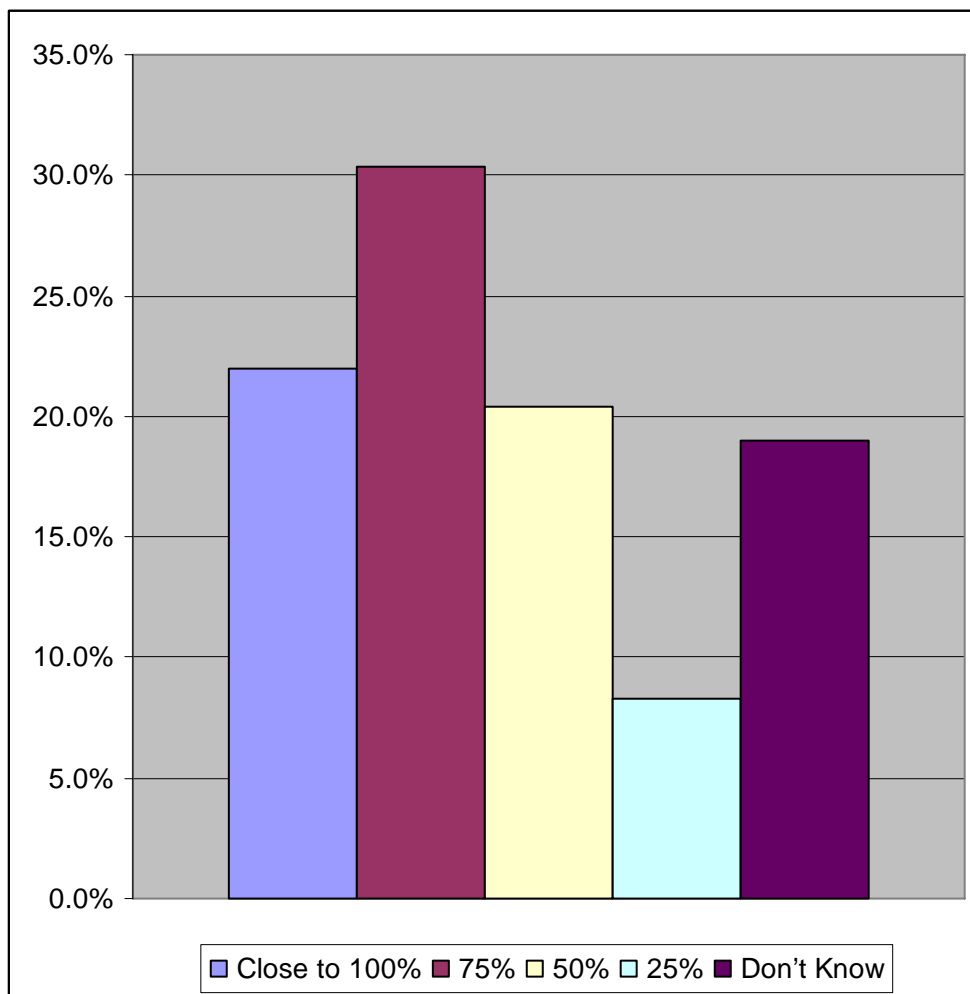


Table 18: Perceived Portion of West Virginia Electricity Generated from Coal

| Response | Number | Percentage |
|---------------|--------|------------|
| Close to 100% | 95 | 22.0% |
| 75% | 131 | 30.3% |
| 50% | 88 | 20.4% |
| 25% | 36 | 8.3% |
| Don't Know | 82 | 19.0% |
| Total | 432 | 100.0% |

Respondents were then asked to estimate the cost burden for electricity in West Virginia as compared to other states. Only 6.9 percent of those surveyed felt that West Virginia residents paid “Much More” in comparative terms. However, 35.8 percent indicated that West Virginians either paid “More” or “Much More” than those in other states. Approximately 14 percent felt that West Virginians paid either “Less” or “Much Less” by comparison. See Figure 16 and Table 19 for full results.

Figure 16: Perceived Electricity Costs for West Virginians as Compared to Residents of Other States

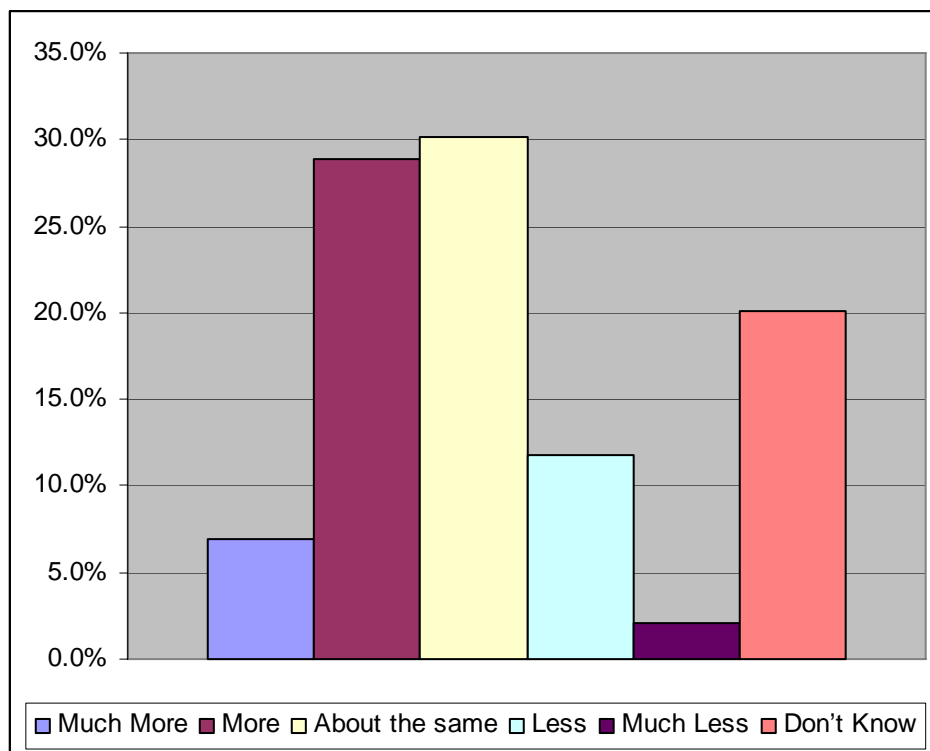


Table 19: Perceived Electricity Costs for West Virginians as Compared to Residents of Other States

| Response | Number | Percentage |
|----------------|--------|------------|
| Much More | 30 | 6.9% |
| More | 125 | 28.9% |
| About the same | 130 | 30.1% |
| Less | 51 | 11.8% |
| Much Less | 9 | 2.1% |
| Don't Know | 87 | 20.1% |
| Total | 432 | 100.0% |

81.5 percent of those surveyed felt that more of our nation's electricity should come from West Virginia coal. Only 11.3 percent disagreed. See Figure 17 and Table 20.

Figure 17: Respondents Who Feel That More of Our Nation's Electricity Should Come from West Virginia Coal

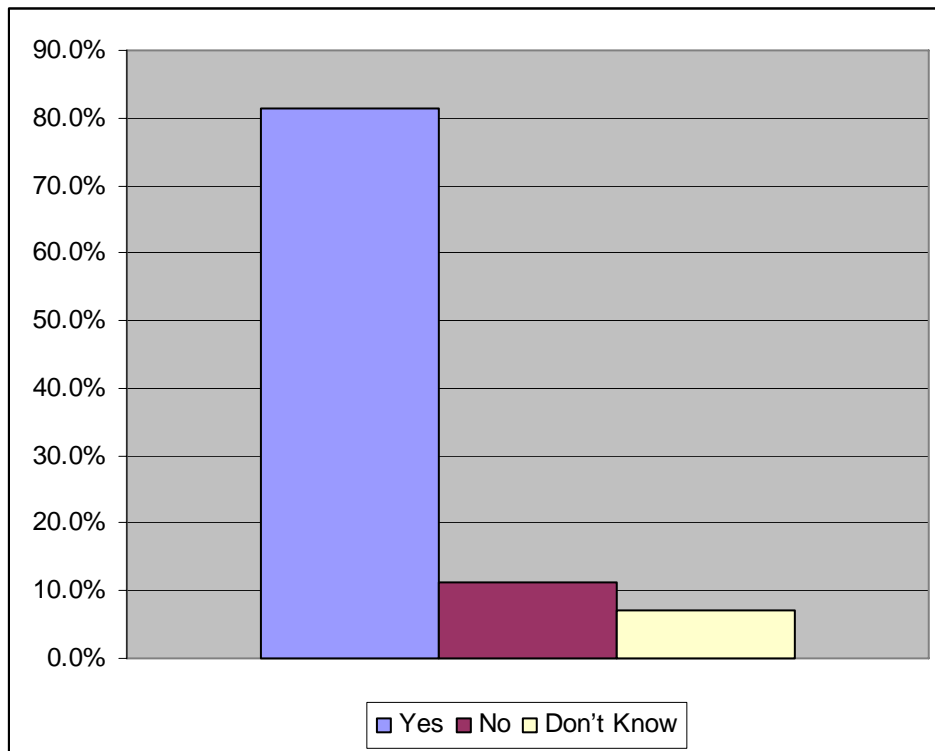


Table 20: Respondents Who Feel That More of Our Nation's Electricity Should Come from West Virginia Coal

| Response | Number | Percentage |
|-----------------|---------------|-------------------|
| Yes | 352 | 81.5% |
| No | 49 | 11.3% |
| Don't Know | 31 | 7.2% |
| Total | 432 | 100.0% |

5. Transportation fuels: To identify opinion on developing these markets

This section of the survey contained three questions concerning the developing markets of transportation fuels from coal and renewable resources.

- Should West Virginia support the production of liquid fuels from coal?
- Coal to liquids: How much more would you be willing to pay for liquid transportation fuel made from West Virginia coal?
- Do you think it is important to produce more fuel made from renewable sources grown in the U.S. such as corn or soybeans?

75.9 percent of respondents indicated that the State should support the production of liquid transportation fuels from coal. Only 4.6 percent were opposed (see Figure 18 and Table 21).

Figure 18: The State Should Support the Production of Liquid Fuels from Coal

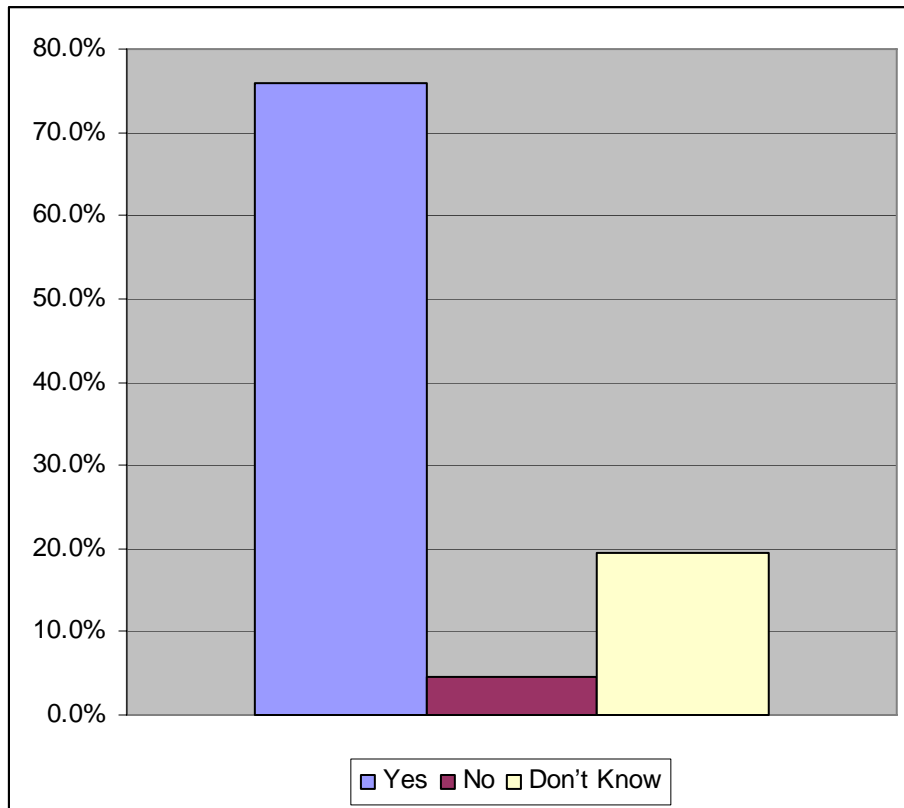


Table 21: The State Should Support the Production of Liquid Fuels from Coal

| Response | Number | Percentage |
|------------|--------|------------|
| Yes | 328 | 75.9% |
| No | 20 | 4.6% |
| Don't Know | 84 | 19.4% |
| Total | 432 | 100.0% |

However, when asked to what extent the respondent would be willing to pay a premium for such fuels made from West Virginia coal, nearly half (49.5 percent) indicated that they would not be willing to do so. Approximately 30 percent were unsure what premium (if any) they would be willing to pay. Only 5.1 percent indicated that they would be willing to pay 20 cents a gallon more for liquid fuel produced from West Virginia coal. This data is illustrated in Figure 19 and Table 22.

Figure 19: Willingness to Pay a Premium for Transportation Fuels Made from West Virginia Coal

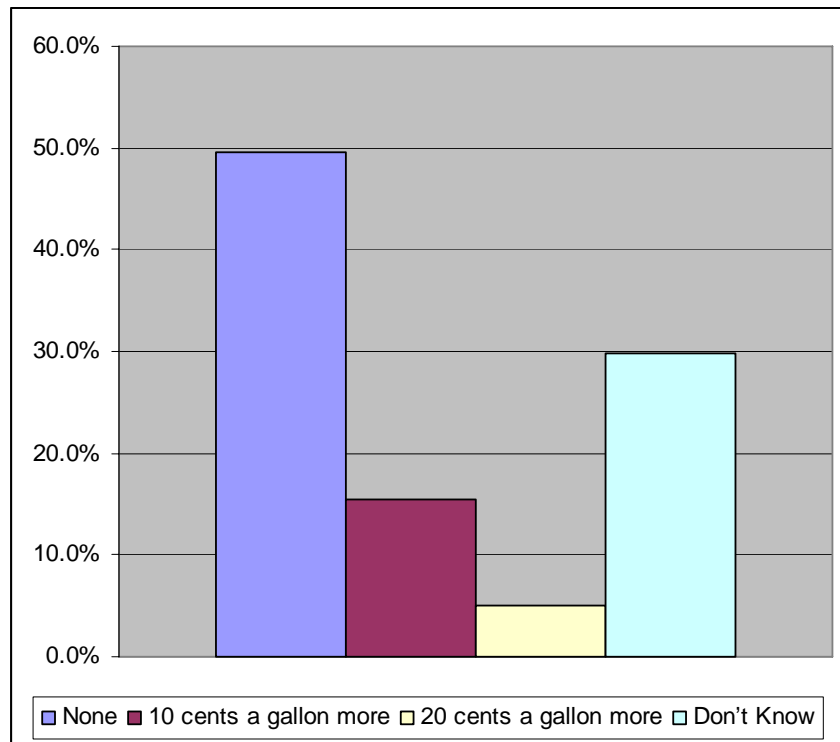


Table 22: Willingness to Pay a Premium for Transportation Fuels Made from West Virginia Coal

| Response | Number | Percentage |
|------------------------|--------|------------|
| None | 214 | 49.5% |
| 10 cents a gallon more | 67 | 15.5% |
| 20 cents a gallon more | 22 | 5.1% |
| Don't Know | 129 | 29.9% |
| Total | 432 | 100.0% |

Respondents were also asked if they felt it was important to produce more fuel made from renewable resources grown in the United States such as corn or soybeans. 79.9 percent answered in the affirmative. Full results are provided in Figure 20 and Table 23.

Figure 20: It Is Important to Produce More Fuel Made from Renewable Resources Grown in the United States

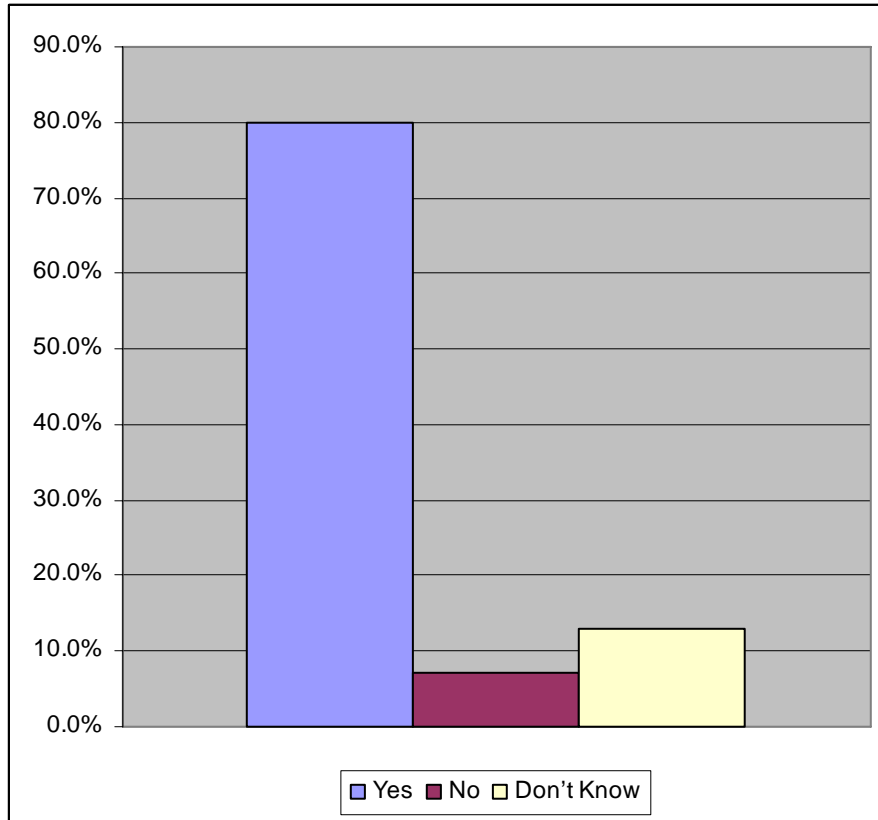


Table 23: It Is Important to Produce More Fuel Made from Renewable Resources Grown in the United States

| Response | Number | Percentage |
|------------|--------|------------|
| Yes | 345 | 79.9% |
| No | 31 | 7.2% |
| Don't Know | 56 | 13.0% |
| Total | 432 | 100.0% |

6. Vehicles: To identify interest in alternative fuel vehicles

The next section of the survey contained four questions designed to identify interest in alternative fuel vehicles.

- Would you consider buying an electric vehicle (car or scooter)?
- Would you consider buying a low-emission, high efficiency diesel vehicle?
- Would you consider buying a hybrid vehicle?
- Would you consider buying a flexible fuel vehicle that can operate on ethanol?

When asked if the respondent would consider purchasing and electric vehicle, opinion was nearly evenly divided. 43.5 percent answered that they would consider such a purchase while 45.4 percent indicated that they would not (see Figure 21 and Table 24).

Figure 21: Would Consider Purchase of an Electric Vehicle

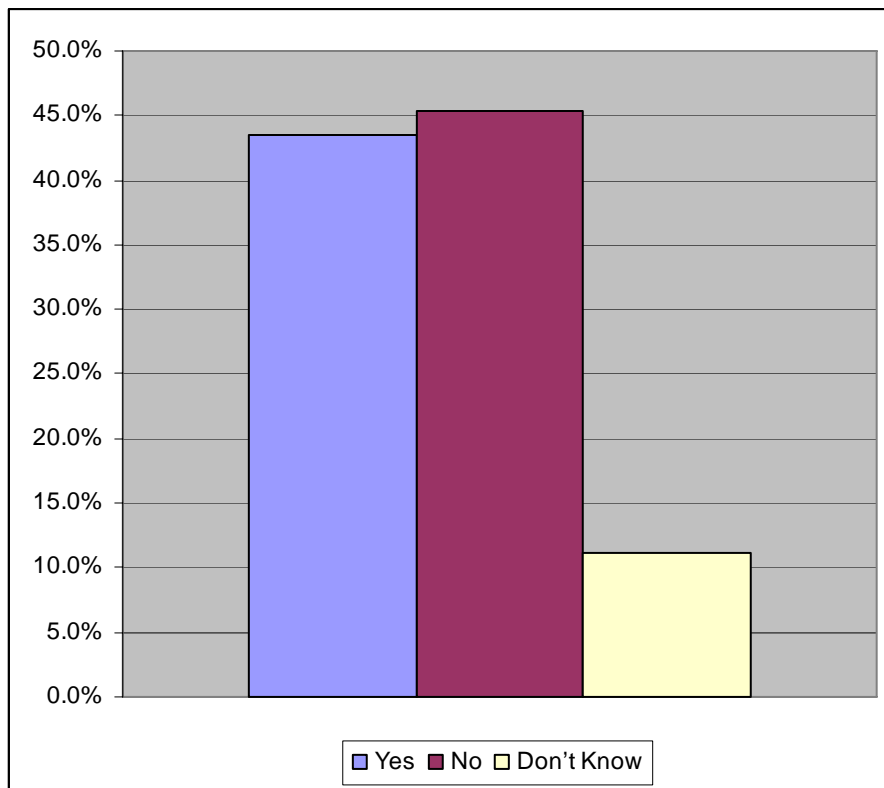


Table 24: Would Consider Purchase of an Electric Vehicle

| Response | Number | Percentage |
|------------|--------|------------|
| Yes | 188 | 43.5% |
| No | 196 | 45.4% |
| Don't Know | 48 | 11.1% |
| Total | 432 | 100.0% |

Only 36.3 percent of respondents indicated that they would consider purchasing a low-emission, high-efficiency diesel vehicle. See Figure 22 and Table 25.

Figure 22: Would Consider Purchase of a Low-Emission, High-Efficiency Diesel Vehicle

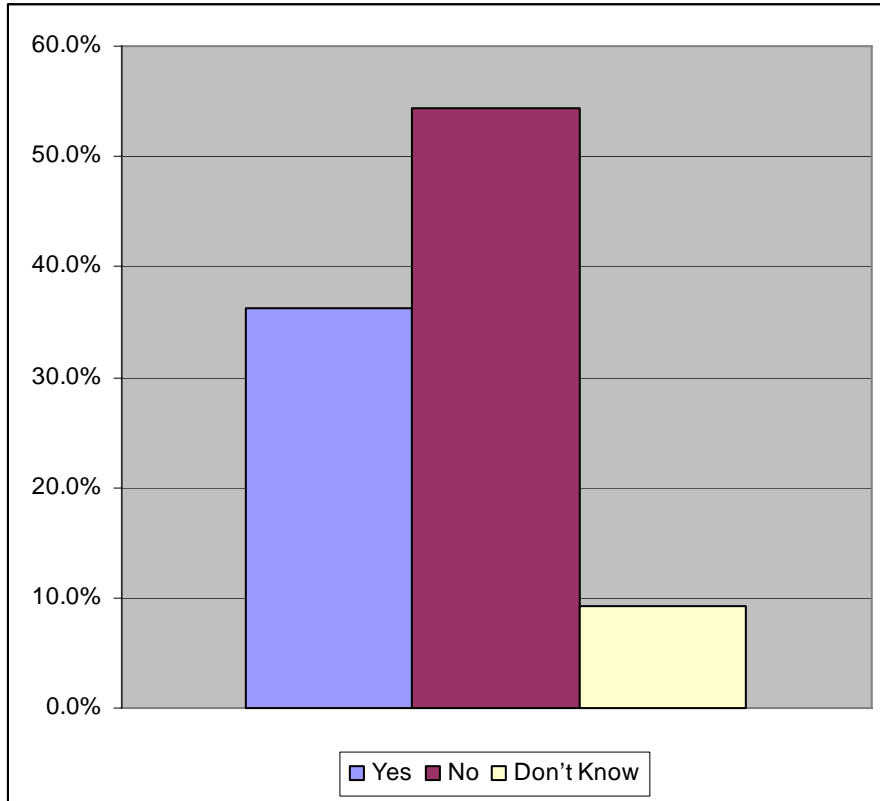


Table 25: Would Consider Purchase of a Low-Emission, High-Efficiency Diesel Vehicle

| Response | Number | Percentage |
|------------|--------|------------|
| Yes | 157 | 36.3% |
| No | 235 | 54.4% |
| Don't Know | 40 | 9.3% |
| Total | 432 | 100.0% |

52.5 percent of respondents indicated that they would consider the purchase of a hybrid vehicle (see Figure 23 and Table 26) and nearly 60 percent indicated that they would consider the purchase of a flex-fuel vehicle that can operate on ethanol (see Figure 24 and Table 27).

Figure 23: Would Consider Purchase of Hybrid Vehicle

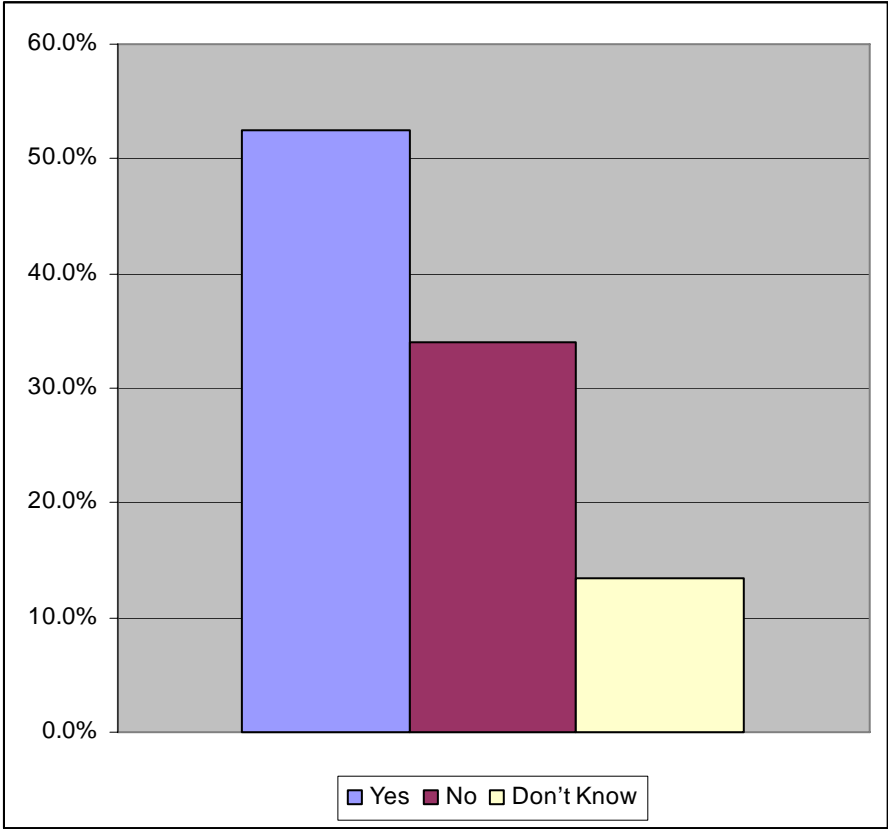


Table 26: Would Consider Purchase of Hybrid Vehicle

| Response | Number | Percentage |
|------------|--------|------------|
| Yes | 227 | 52.5% |
| No | 147 | 34.0% |
| Don't Know | 58 | 13.4% |
| Total | 432 | 100.0% |

Figure 24: Would Consider Purchase of Flex-fuel Vehicle That Can Operate on Ethanol

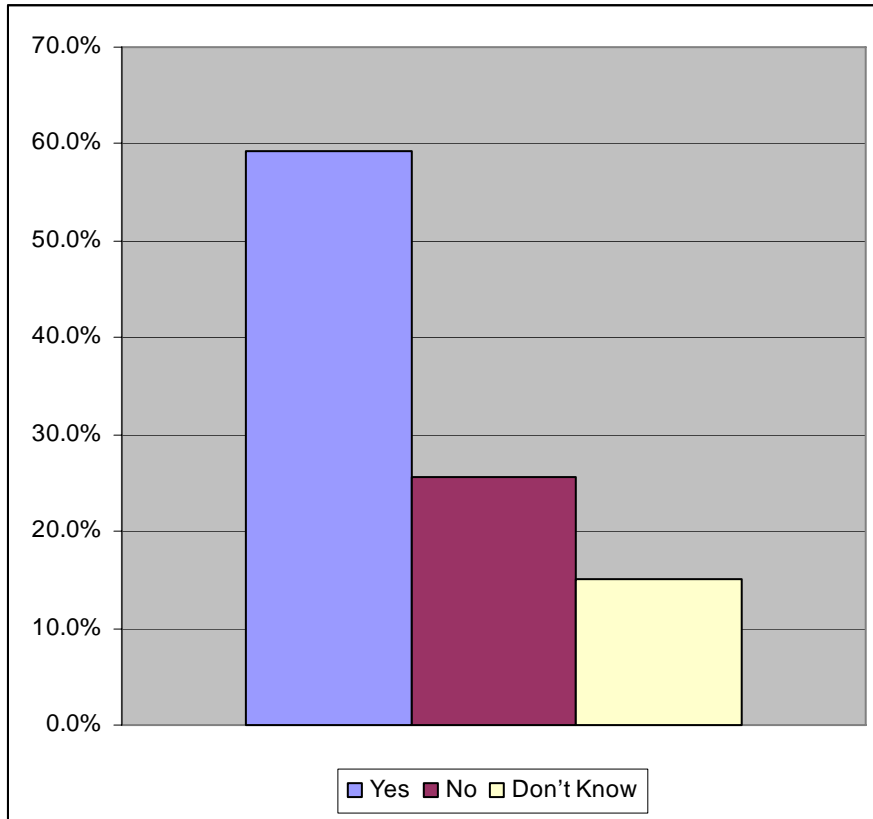
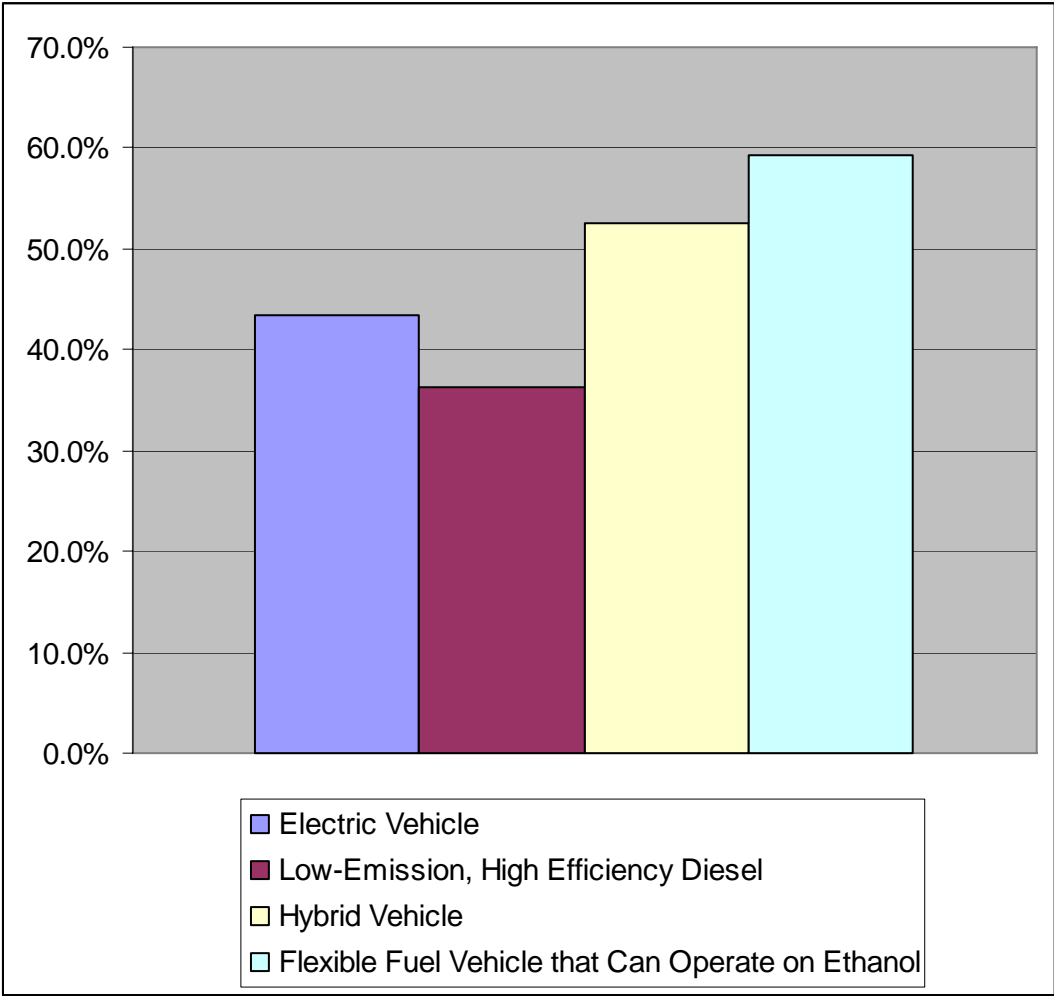


Table 27: Would Consider Purchase of Flex-fuel Vehicle That Can Operate on Ethanol

| Response | Number | Percentage |
|------------|--------|------------|
| Yes | 256 | 59.3% |
| No | 111 | 25.7% |
| Don't Know | 65 | 15.0% |
| Total | 432 | 100.0% |

Figure 25 illustrates the percentage of respondents who would consider buying various types of alternative fuel vehicles.

Figure 25: Would Consider the Purchase of Various Types of Alternative Fuel Vehicles



7. In what county do you live in?

Respondents were asked to provide their county of residence. The most responses were obtained from Cabell, Kanawha and Raleigh Counties. Table 28 provides the complete breakdown by county of residence.

Table 28: Respondent County of Residence

| County | Responses | Percentage | County | Responses | Percentage |
|------------|-----------|------------|------------|-----------|------------|
| Barbour | 3 | 0.7% | Mineral | 10 | 2.3% |
| Berkeley | 14 | 3.2% | Mingo | 10 | 2.3% |
| Boone | 4 | 0.9% | Monongalia | 17 | 3.9% |
| Braxton | 2 | 0.5% | Monroe | 1 | 0.2% |
| Brooke | 4 | 0.9% | Morgan | 3 | 0.7% |
| Cabell | 40 | 9.3% | Nicholas | 8 | 1.9% |
| Calhoun | 3 | 0.7% | Ohio | 10 | 2.3% |
| Clay | 3 | 0.7% | Pendleton | 2 | 0.5% |
| Doddridge | 1 | 0.2% | Pleasants | 0 | 0.0% |
| Fayette | 14 | 3.2% | Pocahontas | 2 | 0.5% |
| Gilmer | 2 | 0.5% | Preston | 7 | 1.6% |
| Grant | 1 | 0.2% | Putnam | 9 | 2.1% |
| Greenbrier | 3 | 0.7% | Raleigh | 26 | 6.0% |
| Hampshire | 2 | 0.5% | Randolph | 7 | 1.6% |
| Hancock | 4 | 0.9% | Ritchie | 2 | 0.5% |
| Hardy | 4 | 0.9% | Roane | 3 | 0.7% |
| Harrison | 14 | 3.2% | Summers | 10 | 2.3% |
| Jackson | 5 | 1.2% | Taylor | 5 | 1.2% |
| Jefferson | 9 | 2.1% | Tucker | 2 | 0.5% |
| Kanawha | 39 | 9.0% | Tyler | 3 | 0.7% |
| Lewis | 3 | 0.7% | Upshur | 5 | 1.2% |
| Lincoln | 16 | 3.7% | Wayne | 20 | 4.6% |
| Logan | 12 | 2.8% | Webster | 2 | 0.5% |
| Marion | 12 | 2.8% | Wetzel | 3 | 0.7% |
| Marshall | 8 | 1.9% | Wirt | 1 | 0.2% |
| Mason | 6 | 1.4% | Wood | 20 | 4.6% |
| McDowell | 3 | 0.7% | Wyoming | 1 | 0.2% |
| Mercer | 11 | 2.5% | NA | 1 | 0.2% |

8. Demographics:

This section of the survey was designed to capture three demographic characteristics of the survey respondents. Respondents were made aware that they were free to refuse to answer any question in the demographic section with which they were not comfortable in providing an answer.

- Would you please tell me in which of the following ranges your age falls?
- What is the highest level of education you have obtained?
- Which of these broad categories best describes your total household income?

One third of the survey respondents indicated that their age fell between 50 and 64. Only 11.8 percent indicated that they were under age 35. 2 Respondents refused to provide this information. Figure 26 and Table 29 provide age group data.

Figure 26: Respondent Age Range

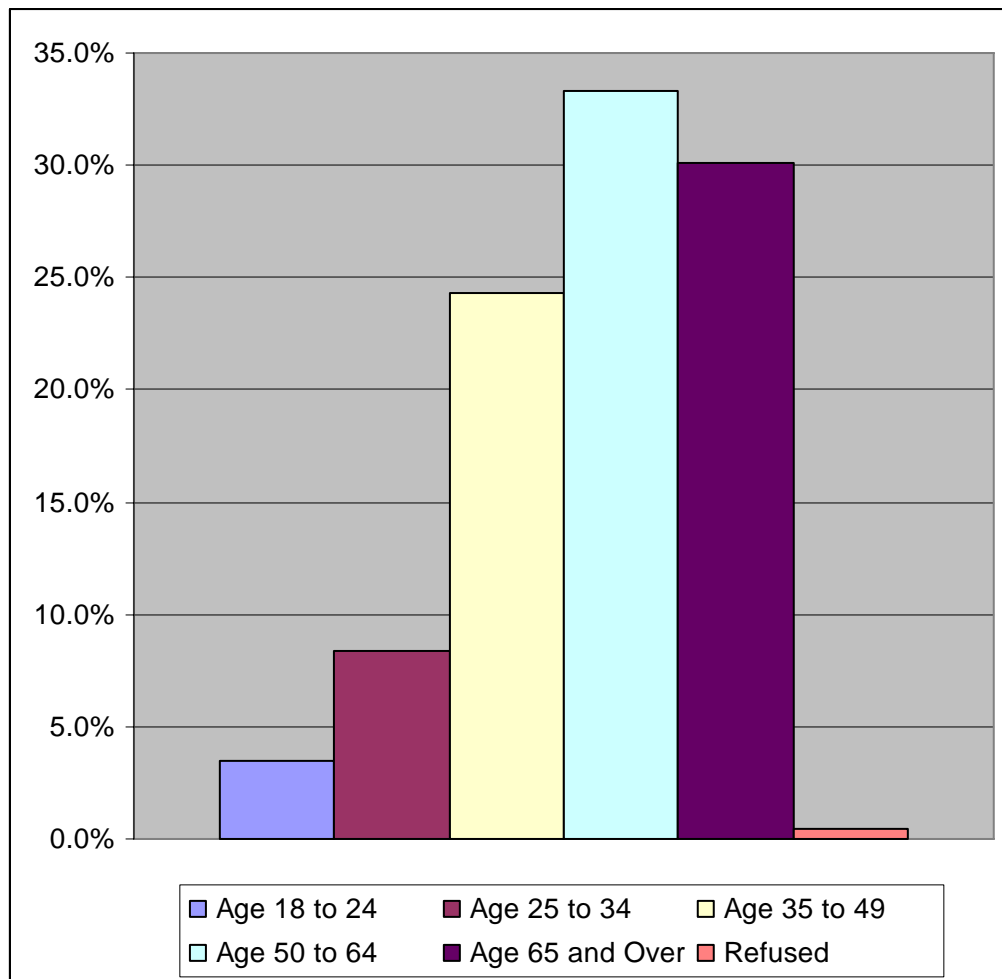


Table 29: Respondent Age Range

| Response | Number | Percentage |
|-----------------|--------|------------|
| Age 18 to 24 | 15 | 3.5% |
| Age 25 to 34 | 36 | 8.3% |
| Age 35 to 49 | 105 | 24.3% |
| Age 50 to 64 | 144 | 33.3% |
| Age 65 and Over | 130 | 30.1% |
| Refused | 2 | 0.5% |
| Total | 432 | 100.0% |

Respondents were also asked to provide the highest level of education that they had obtained. 85 percent of those surveyed indicated held a high school degree or higher. Only 11.6 percent of respondents had not completed high school. 15 respondents refused to provide information on their educational attainment. See Figure 27 and Table 30 for full results.

Figure 27: Highest Level of Education Obtained

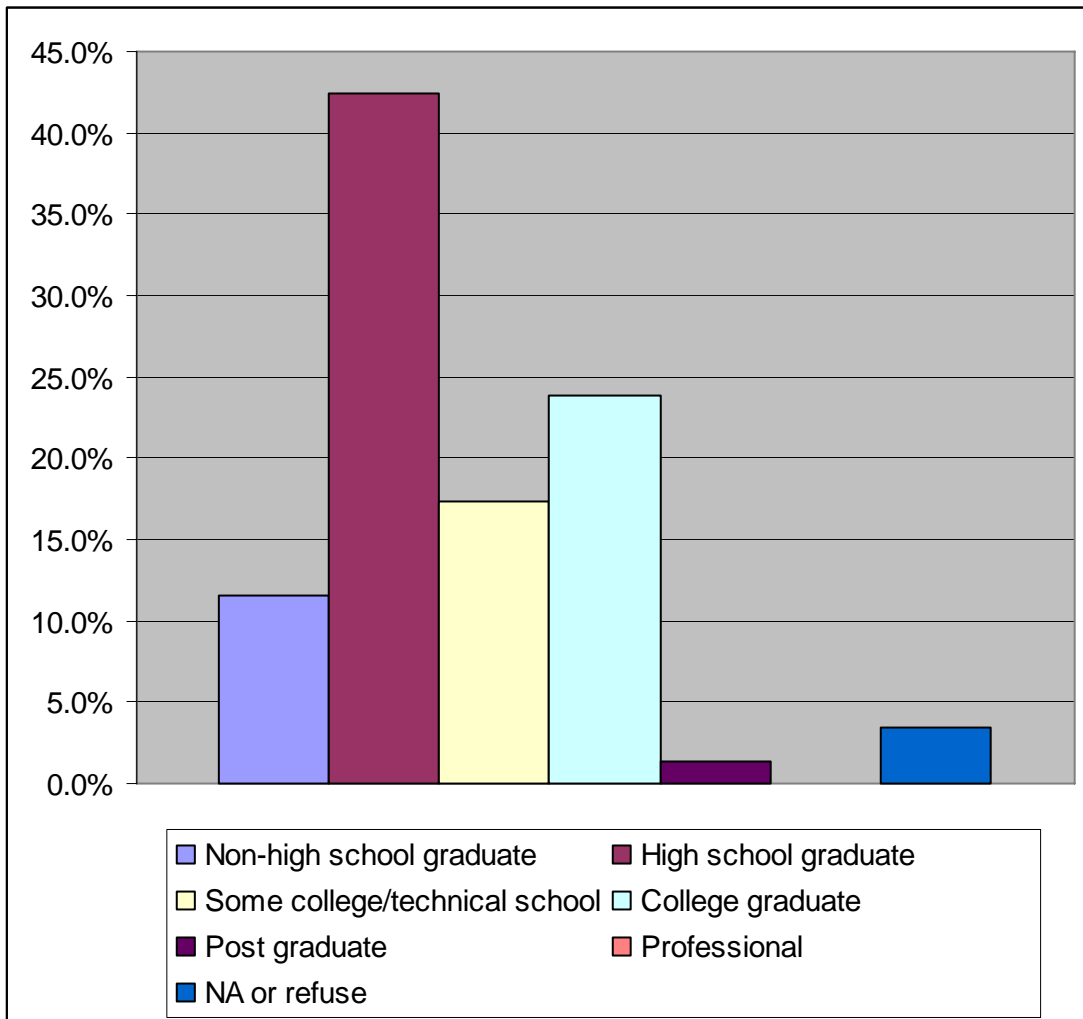


Table 30: Highest Level of Education Obtained

| Response | Number | Percentage |
|-------------------------------|--------|------------|
| Non-high school graduate | 50 | 11.6% |
| High school graduate | 183 | 42.4% |
| Some college/technical school | 75 | 17.4% |
| College graduate | 103 | 23.8% |
| Post graduate | 6 | 1.4% |
| Professional | 0 | 0.0% |
| Refused | 15 | 3.5% |
| Total | 432 | 100.0% |

The final demographic question concerned respondent household income. Equal percentages (20.4 percent) reported household incomes of “Under \$20,000” and “Between \$20,000 and \$40,000. 32.9 percent (or 142 respondents) refused to provide household income information. Household income data is presented in Figure 28 and Table 30.

Figure 28: Respondent Household Income

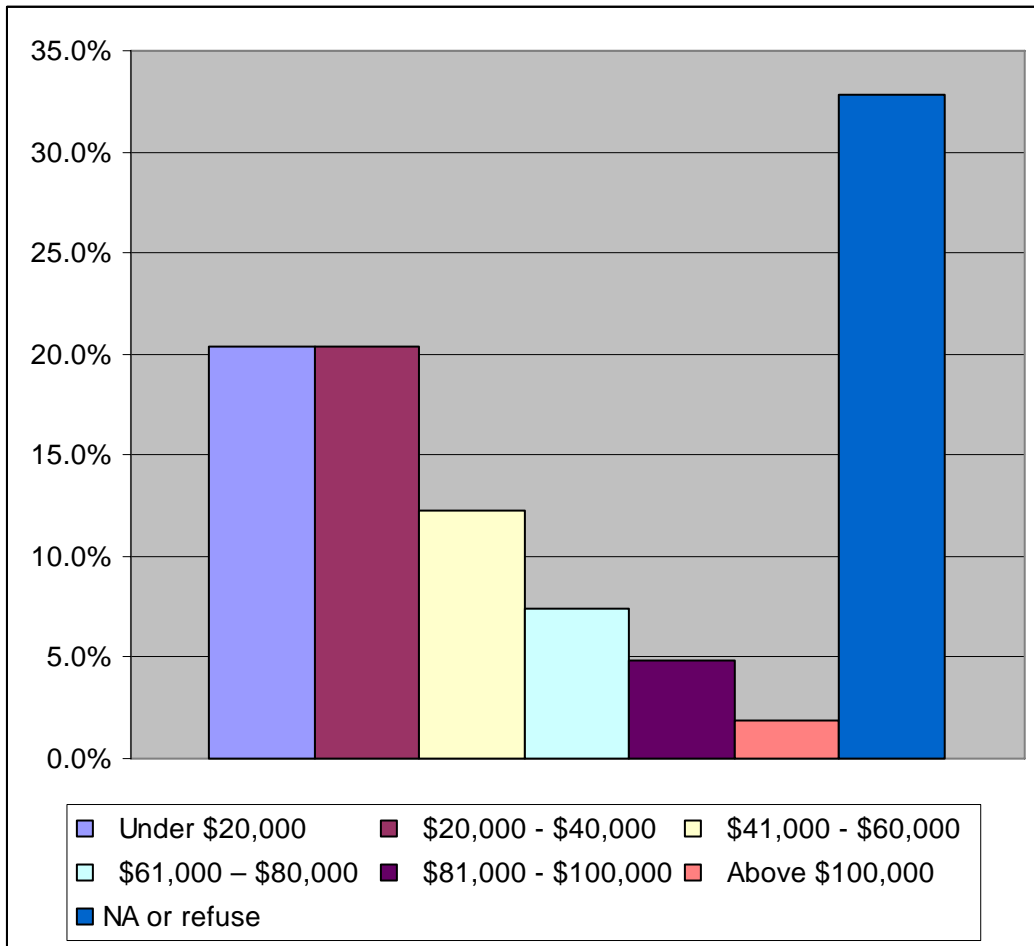


Table 31: Respondent Household Income

| Response | Number | Percentage |
|----------------------|---------------|-------------------|
| Under \$20,000 | 88 | 20.4% |
| \$20,000 - \$40,000 | 88 | 20.4% |
| \$41,000 - \$60,000 | 53 | 12.3% |
| \$61,000 - \$80,000 | 32 | 7.4% |
| \$81,000 - \$100,000 | 21 | 4.9% |
| Above \$100,000 | 8 | 1.9% |
| Refused | 142 | 32.9% |
| Total | 432 | 100.0% |

9. Do you have any comments that were not addressed directly by the survey questions?

Finally, in an effort to elicit additional input the respondent was asked to provide further comments and/or concerns that were not addressed by the survey instrument. 36 respondents took the opportunity to provide additional feedback. These comments are provided below without tabulation and in simple alphabetical order.

Table 32: Respondent Comments

| Respondent Comments |
|--|
| Anything to save money is worth a try. |
| Bio-diesel is good. |
| Dissatisfied with those in WV government positions - they are disconnected from the people. |
| Electric companies should be investigated and should check the meters every month. Would support anything if it did not hurt the air. |
| Hate mountain top removal. |
| He supports the University to do things for the University but does not like Marshall employees being employed to do things for the state. |
| I like the idea of getting more out of coal. |
| I support fuel alternatives |
| I think we should put more work in WV. It would be nice to purchase the car that run on ethanol made in WV. |
| I think WV should explore other options to make energy efficient homes and appliances. |
| I wish the price of natural gas would come down for homeowners. |
| If they could get rid of the waste, use the coal for gas. |
| If were to use vehicles that can operate on ethanol, we would need filling stations. Would buy one, but don't know of anyplace to buy ethanol. |
| Just make sure that we help our state. |
| Let WV use windmill power. Not other states using our power. |
| Need more nuclear power and wind turbines |
| Need to lower the costs |
| Nice to look for cheaper use that is clean. |
| Promote anything that would be cost efficient for the young people growing up. |
| Rather see state utilize natural resources. |
| Sometimes we get ripped off by the fuel companies - especially in gasoline and sometimes electric. |
| Use the water in rivers for hydro-plants. Use hydro first then use wind. |
| Use water for energy. Wind will help too. |
| We have always had the gold mines, but we ship the gold to other places. |
| We have no control. The government is going to run things the way they want to. |
| We need to do everything possible to utilize WV's coal. |
| We pay way too much taxes especially for personal property. |
| Well, I think things are in a mess right now. |
| Why can't we use already used oil from fast food? It's already been approved. |
| Windmills are beautiful and they fit in the environment. Valley fills take the environment away. |
| Windmills kill birds and eagles. It is a good source of energy but it may soil our states beauty. |
| Windmills would be a wonderful thing for WV |
| Would like to have fuel produced from sugar. |
| Would like to see something good come out of this. |
| You're doing this for Marshall and I'm a WVU graduate. |