Public Knowledge, Behaviors & Preferences about Energy

A Maryland Statewide Survey | Fall 2015

GEORGE MASON UNIVERSITY

JOHNS HOPKINS BLOOMBERG SCHOOL of PUBLIC HEALTH

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Credits, cover photo:

Wind turbines at sunrise was photographed by Emilian Robert Vicol and made available through a Creative Commons public domain license.

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Executive Summary

The sources of Maryland's energy, its health and environmental impacts, and its costs to consumers on their monthly energy bills are issues that animated Maryland's 2014 gubernatorial election.[1] These have become increasingly contentious topics for the state as it faces decisions over hydraulic fracturing,[2] the development of new wind farms,[3] the first liquid natural gas export facility on the East Coast,[4] and the mandated percentage of electricity generated from renewable sources.[5] Maryland is not alone; the national discourse over energy is no less heated, particularly over the new federal Clean Power Plan rules.

Marylanders have opportunities both to influence the state's energy decisions and to make choices about their own energy use. As a result, we focus on Marylanders' preferences for state policies and their own everyday household energy consumption in this report. Indeed, the individual actions of Marylanders account for a significant portion of the energy consumed in the state. Residents have substantial choice in choosing their gas and electricity suppliers whether on cost or other criteria, such as percentage of renewably sourced energy. While the majority of

Fast facts on energy in Maryland

- The two largest sources of Maryland's electricity generation are **coal-fired** (40%) and **nuclear** (40%) power plants with **natural gas** a distant third (15%).
- In 2014, 7% of the state's net generation of electricity came from **renewable sources**, of which hydroelectric power is the largest single source.
- Maryland law prohibits the use of **hydraulic fracturing of natural gas** in the state through October 2017. In the meantime the Maryland Department of the Environment is developing regulations for the practice.
- The **Renewable Energy Portfolio Standard (RPS)** requires that 20% of electricity in the state be generated from renewables by 2022.
- The General Assembly will have an opportunity to revisit the RPS in the 2016 legislative session when it reviews Maryland's overarching **Greenhouse Gas Reduction Act (GGRA)**.
- Maryland was rated among the top 10 U.S. states in 2014 for **energy efficiency** and is projecting a 12.8% reduction in per capita energy use between 2007 and the end of 2015, close to its 15% target.
- Through the **EmPOWER** program with state utilities, Marylanders are eligible for rebates for home and business energy efficiency upgrades. The program claims 4.4 million MWh of savings.

[1] Capital News Service. (2014). *Maryland gubernatorial candidates on the issues.* College Park, MD: Philip Merrill College of Journalism, University of Maryland. Available at http://cnsmaryland.org/maryland-2014-gubernatorial-candidates-issues/

[2] Hicks, J. (2015, May 29). Md. fracking moratorium to become law without Hogan's signature. *The Washington Post*. Available at http://www.washingtonpost.com/local/md-politics/md-fracking-moratorium-to-become-law-without-hogans-signature/2015/05/29/e1d10434-062c-11e5-a428-c984eb077d4e_story.html

[3] Wheeler, T. (2015, April 6). Shore wind project scrapped amid political roadblocks. *Baltimore Sun: B'More Green (blog)*. Available at http://www.baltimoresun.com/features/green/blog/bs-md-wind-energy-hurdles-20150406-story.html

[4] Ehrenfreund, M. (2014, December 5). Community divided over Cove Point natural gas terminal. *The Washington Post*. Available at http://www.washingtonpost.com/business/community-divided-over-cove-point-natural-gas-terminal/2014/12/05/8f4e7300-7003-11e4-8808-afaa1e3a33ef_story.html

[5] Wiggins, O. (2015, January 8). Maryland coalition pushes for new standards for renewable energy use. *The Washington Post*. Available at http://www.washingtonpost.com/local/md-politics/maryland-coalition-pushes-for-new-standards-for-renewable-energy-use/2015/01/08/51e05a74-9763-11e4-aabd-d0b93ff613d5_story.html

energy used in the state is by commercial businesses and industry, residential use still accounts for more than 40%.[6] It doesn't come cheaply. Marylanders pay on average $141 per month for electricity alone, more than residents in 41 other states.[7] For low-income households, energy bills for electricity and heating can accrue to 1/10th or even 1/5th of their income.[8] Energy efficiency and conservation programs are some of the most cost-effective ways to reduce energy use and put money back into Marylanders' pocketbooks. Maryland was rated among the top 10 U.S. states in 2014 for energy efficiency[9] and is projecting a 12.8% reduction in per capita energy use between 2007 and the end of 2015, close to its 15% target.[10]

For the past three years, we have been asking Marylanders questions about their preferences for the state's energy policies; their attitudes toward the energy sources they use in heating, cooling and powering their homes; and the actions they take to conserve energy at home and in their transportation choices. This year George Mason University partnered with the Johns Hopkins Bloomberg School of Public Health in fielding the survey. This report is one of three from the study; other reports highlight attitudes, behaviors and policy preferences on public health and climate change.

Key findings from this report include:

1. Marylanders support the state's mandate for renewable energy and expanding incentives for generation.

- Three-quarters (75%) of Marylanders say they support a mandate for energy suppliers to meet the current state target for renewable energy, the Renewable Energy Portfolio Standard (RPS). A similar percentage also support expanding incentives for renewable generation (77%).
- Public support for the RPS has remained consistent across the past two years (2013, 75%; 2014, 73%).

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[6] Maryland Energy Administration. (2013). *Maryland's Greenhouse Gas Reduction Plan: EmPOWER Maryland and the Regional Greenhouse Gas Initiative*. Annapolis, MD: MEA. Available at http://energy.maryland.gov/documents/EmPOWERMDandtheRegionalGreenhouseGasInitiative.pdf

[7] Bernardo, R. (2015). 2015's most and least energy-expensive states. *Wallethub*. Available at http://wallethub.com/edu/most-least-energy-expensive-states/4833/

[8] Makhijani, A., Mills, C., & Makhijani, A. (2015). *Energy justice in Maryland's residential and renewable energy sectors*. Takoma Park, MD: Institute for Energy and Environmental Research.

[9] American Council for an Energy-Efficient Economy. (2014). *State energy efficiency scorecard.* Washington, DC. Available at http://aceee.org/state-policy/scorecard

[10] Maryland Energy Administration. (2015). *Fiscal year 2016 operating budget testimony.* Annapolis, MD. Available at http://www.dbm.maryland.gov/budget/FY2016Testimony/D13A13.pdf

2. EmPOWER's energy efficiency rebates are rated highly by state residents.

- More than 8 out of 10 Marylanders back the current state's policy of expanding rebates to help people purchase energy-efficient lighting and appliances.

3. Residents urge caution on the use of hydraulic fracturing for natural gas.

- More than two-thirds of the state (69%) have heard of the practice used to extract natural gas from shale formations deep in the earth using methods called hydraulic fracturing, or "fracking." Most either support a delay to further consider the results of new studies (35%), or an outright ban (28%).
- Respondents say the state will gain new jobs from allowing "fracking" (66%), but also cite likely environmental impacts, including harm to wildlife (61%), water pollution (59%), soil contamination (58%), and increased truck traffic (53%).
- Less than half list public health as a concern from the practice of hydraulic fracturing (47%).

4. Many are unclear what fuels their electrical energy.

- In 2013, almost half said that they couldn't identify the largest fuel sources that generated the state's electricity. By 2015 only a third of residents said they didn't know (32%).
- Coal (21%) and natural gas (19%) are perceived as the largest sources of the state's electrical energy. The two largest sources of Maryland's electricity generation are coal-fired (40%) and nuclear (40%) power plants with natural gas a distant third (15%).

5. Solar and wind energy are increasingly favorites for growth, but not coal.

- Between 2013 and 2015 there was an increase of 16 percentage points – from 47% to 63% – in the number of people who said there should be much more solar energy produced. There was also an increase of 19 percentage points of people who said that much more wind energy should be produced, a shift from 36% to 55%.
- Just over half of Marylanders say that they would like to see less coal (52%) used to generate the state's electrical energy.

6. Marylanders say solar, wind, coal, and gas are cheap to moderately priced, and are willing to pay more for renewables.

- Marylanders are most likely to say that wind (71%), coal (77%), solar (62%) and natural gas (67%) are cheap or moderately priced. More than 6 in 10 Marylanders say nuclear power is somewhat or very expensive (62%).

- A majority of the state does not want to pay more each month on their electricity bill for coal-, nuclear-, and natural gas-powered electricity (80%, 68%, 58%, respectively), but they will pay more for wind (67%) and solar (68%).
- Across the state, people put a premium on renewable energy, from the four westernmost counties (wind, 63%; solar, 64%) to the Eastern Shore (wind, 65%; solar, 66%) (Central, 66%/68%; Southern, 67%/67%).

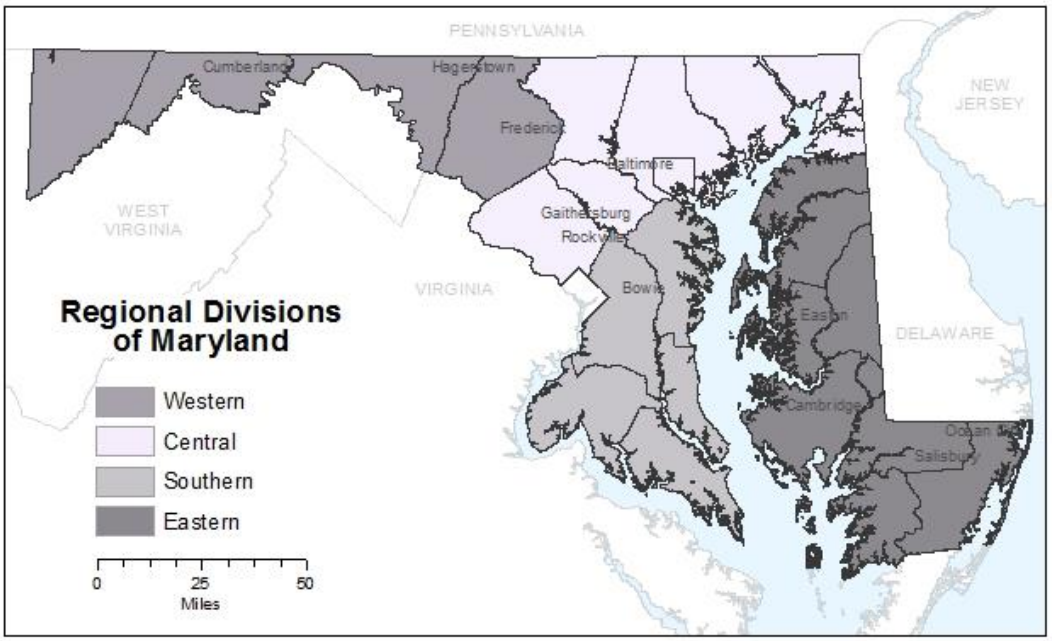
7. Energy efficiency and conservation are popular; recycling is perceived as purely "green."

- Marylanders report turning off lights (98%), installing efficient light bulbs (86%), adjusting their thermostats (84%), and installing efficient home appliances (61%). More than half of Marylanders say they have sealed air leaks (53%) and installed programmable thermostats (51%) at home, allowing them to save energy.
- Most of the state recycles (82%), the only activity surveyed that people say they do for mostly environmental reasons (75%).

Study methodology

The survey was mailed to 6,401 households in the state of Maryland, randomly selected from within each of four regions of the state (Figure 1). We sampled at the regional level to ensure the final data were generalizable to these distinctly different geographic and cultural areas, as well as to the state as a whole. Data were weighted at both the state and regional levels in accordance with U.S. Census population distributions. Households that responded to the survey in 2013 and 2014 were not re-contacted in 2015. The survey was fielded from April 11 to June 24 with a response rate of 27%. The unweighted sample margin of error is +/- 2.5 percentage points at the 95% confidence interval for the state and less than +/- 5.7 percentage points for each region. (See study methodology, p. 25). This report includes survey data from 2013 as a basis for comparison; statistical comparisons between years were assessed for significance. Survey reports from 2013 can be found at climatemaryland.org and include a description of the sample and methodology. Both were consistent across years.

Figure 1 | *Four regions of the state were sampled in the survey*



1. Marylanders support the state's mandate for renewable energy and expanding incentives for generation

Requiring suppliers to provide a minimum percentage of their electric power from renewables and expanding incentives for the generation of renewable energy are highly popular policies among the residents of Maryland. Awareness of each of the policies is lower than the percentage of people who support them, but even so, more than a third of Marylanders say they have heard of the renewable requirements and incentives.

In 2004, Maryland first mandated that a percent of the state's generated electricity come from renewable sources, including solar, wind, geothermal, biomass, hydro, waste-to-energy, and poultry litter-to-energy. Revised over the years, the current Renewable Energy Portfolio Standard (RPS) requires that 20% of electricity in the state be generated from renewables by 2022.[11] Maryland is one of 29 states and the District of Columbia that have RPS policies. Some state organizations are encouraging an increase in the percentage of renewable-fueled power that energy suppliers are obliged to provide. The General Assembly will have an opportunity to revisit the RPS in the 2016 legislative session when it reviews Maryland's overarching Greenhouse Gas Reduction Act (GGRA).

Three-quarters of Marylanders support the Renewable Energy Portfolio Standard

This year, three-quarters (75%) of Marylanders say they support a mandate for energy suppliers to meet the current state target for renewable energy, almost the same figure as the percentage of Marylanders who support expanding incentives for renewable generation (77%) (Figure 2). Support for the current RPS mandate has remained consistent across the past three years (2013, 75%; 2014, 73%) (Figure 3). Yet few residents say they have heard of the policy; in 2015, just over a third (38%) are aware of it (2013, 36%; 2014, 26%). Support for the RPS differs little between the regions of the state (Western, 76%; Central, 77%; Southern, 68%; Eastern, 75%) (Figure 4) (Appendix, Table 2).

Most Marylanders also favor an increase in the percentage of renewable energy required of suppliers. Just over half (51%) say they would like to see the standard raised, even if it costs them more every month ($10/mos, 22%; $5/mos, 19%; $2/mos, 10%) (Figure 5). Another 21% say they would like a stronger RPS, but only if it doesn't add to their electricity charges. Only 8% in 2015 say they oppose such a requirement. Support for the stronger mandate – with or without costs passed on to the consumer – again differs little across the regions (Western, 77%; Central, 72%; Southern, 70%; Eastern, 69%) (Appendix, Table 3).

[11] Energy.gov. (2013). *Renewable energy portfolio standard: Maryland.* Washington, DC: U.S. Dept. of Energy. Available at http://energy.gov/savings/renewable-energy-portfolio-standard

Figure 2 | *Half of Marylanders strongly support current mandates for renewable energy*

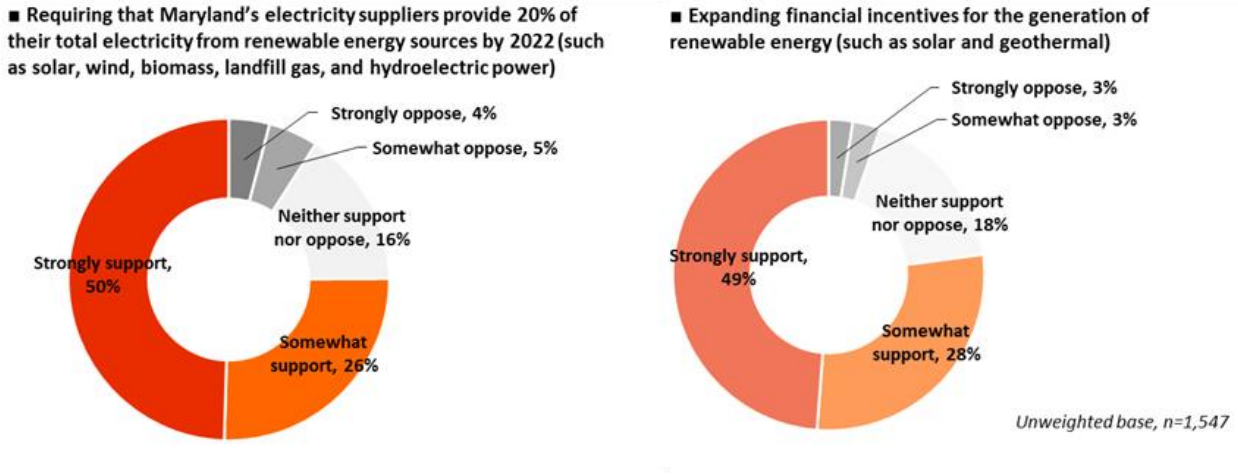


Figure 3 | *Support for the current RPS has remained consistent over a period of three years*

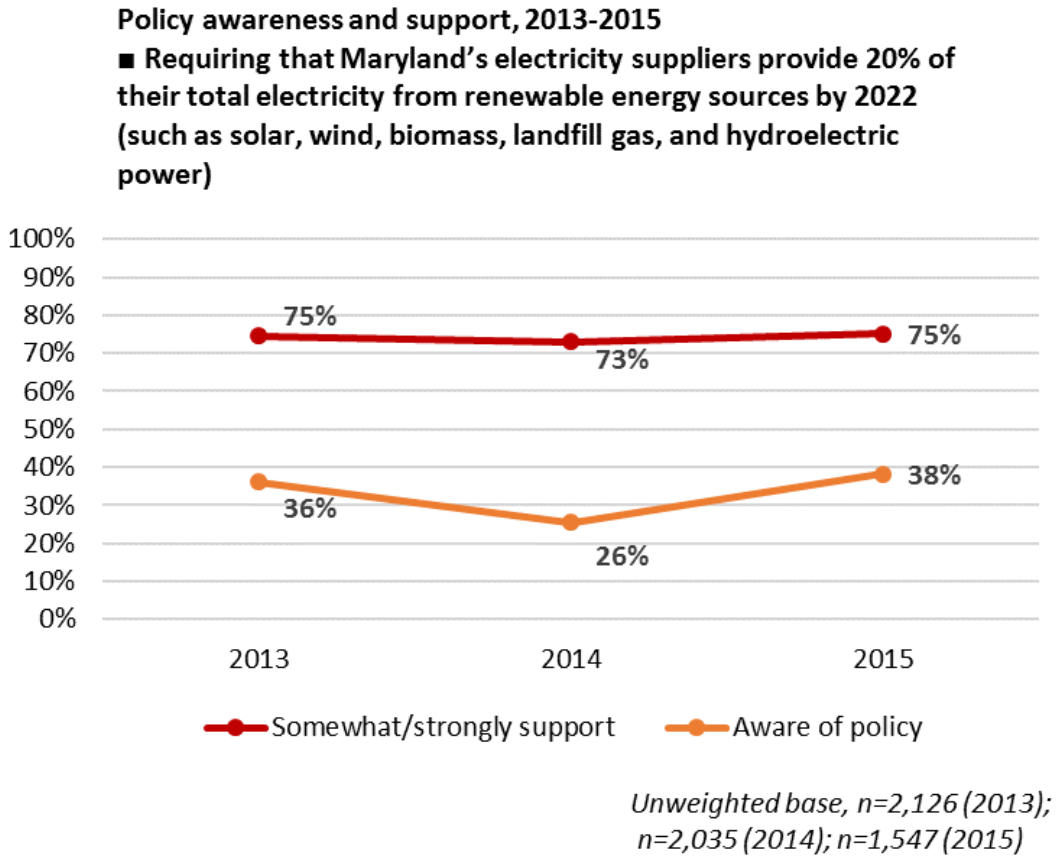


Figure 4 | *Support for a 20% renewable portfolio standard is widespread across Maryland*

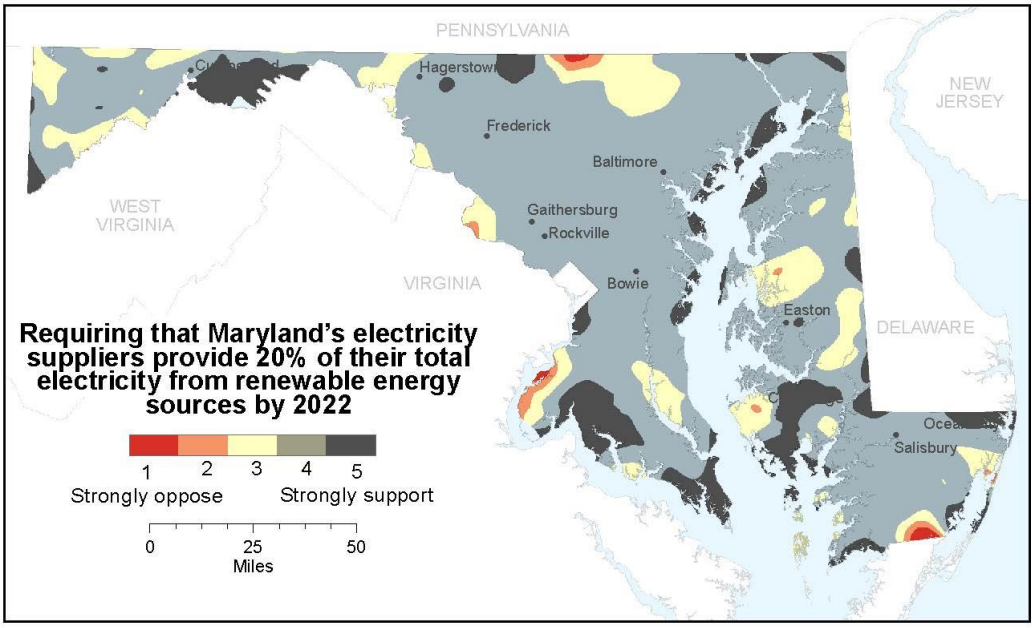
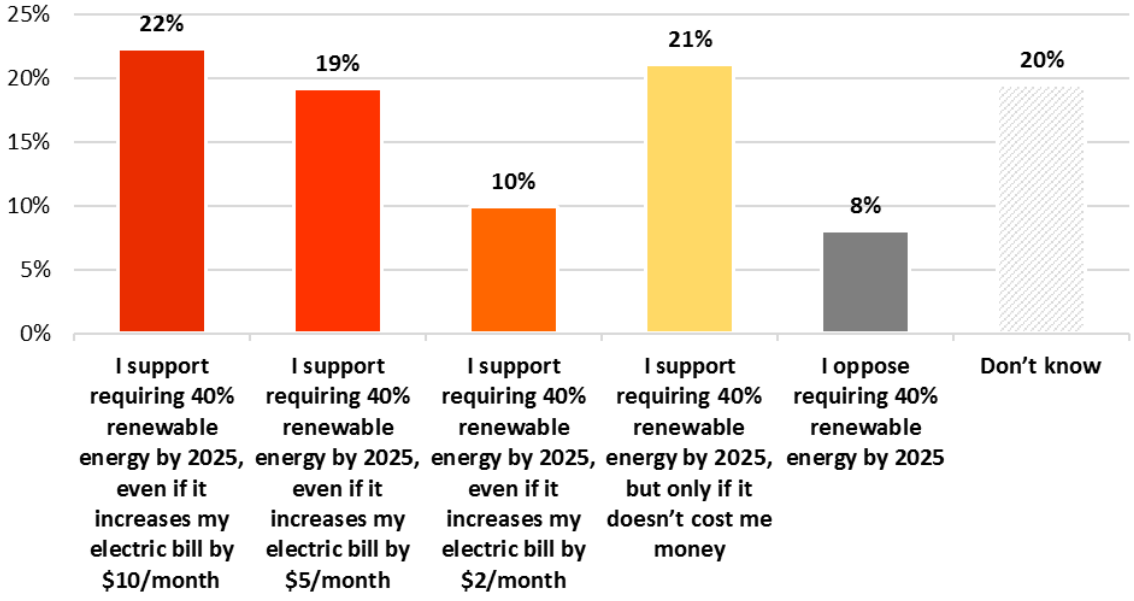


Figure 5 | *Half of Marylanders want a stronger RPS even if it costs them on their bills*

Maryland currently gets most of its electricity from the burning of fossil fuels like coal and natural gas. The state currently requires electricity suppliers to provide 20% of their electricity from renewable energy sources like wind and solar by 2022, but some Marylanders support legislation to increase the percentage to 40% by 2025. Do you support or oppose strengthening the current requirement for renewable energy?



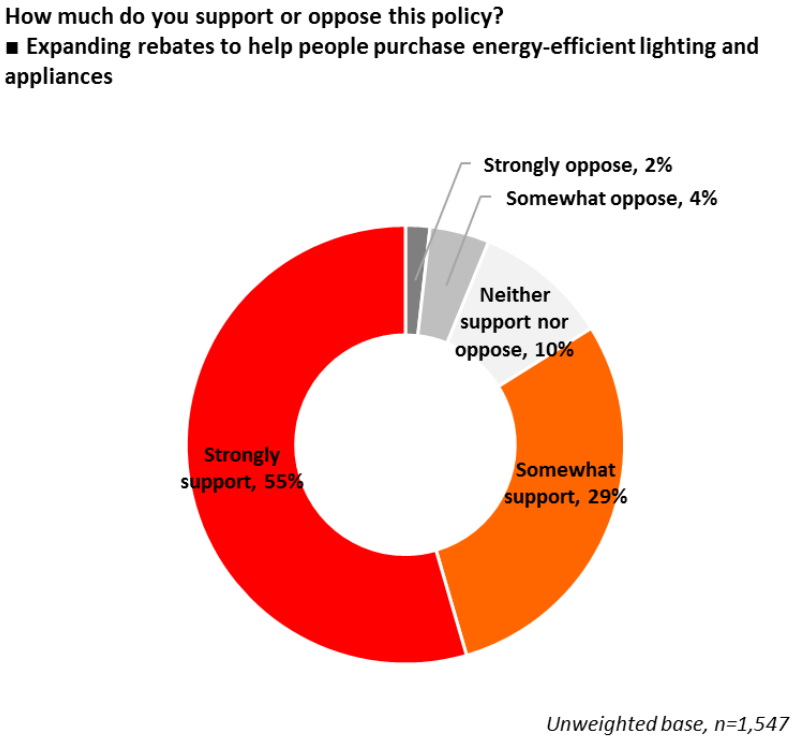
Unweighted base, n=1,547

2. EmPOWER's energy efficiency rebates are highly rated

Very few Marylanders oppose the idea of being incentivized to save energy, and most say they are aware of the state's increased rebates. State energy efficiency policies also fall under the Greenhouse Gas Reduction Act Plan with targets to reduce energy use per person by 15% between 2007 and 2015. As a component of the 2008 EmPOWER program with state utilities, Marylanders are eligible for reimbursements for home and business energy efficiency upgrades. The program claims 4.4 million MWh of savings to-date with more than 1.7 million measures for residential customers and 34 million efficient light bulbs installed.[12]

More than 8 out of 10 Marylanders support the state's policy of expanding rebates to help people purchase energy-efficient lighting and appliances with 55% saying they strongly support the policy and another 29% whom somewhat support it (Figure 6). In recent years this percentage has increased slightly to 84%, up from 80% in 2013 (Figure 7). Awareness of the policy remains high. As of 2015, more than 6 in 10 Marylanders say they have heard of it. Energy efficiency rebates maintain 80% support or more across each of the four regions (Western, 83%; Central, 82%; Southern, 88%; Eastern, 88%) (Figure 8) (Appendix, Table 7).

Figure 6 | *Most Marylanders favor rebates for energy efficiency purchases*



[12] Lucas, K. (2015, May 21). *EmPOWER and RPS progress update*. Annapolis, MD: Maryland Energy Administration. Available at http://www.mde.state.md.us/programs/Marylander/Documents/MWGHandout3MEA05212015.pdf

Figure 7 | *Support and awareness of energy efficiency rebates remains high from 2013 to 2015*

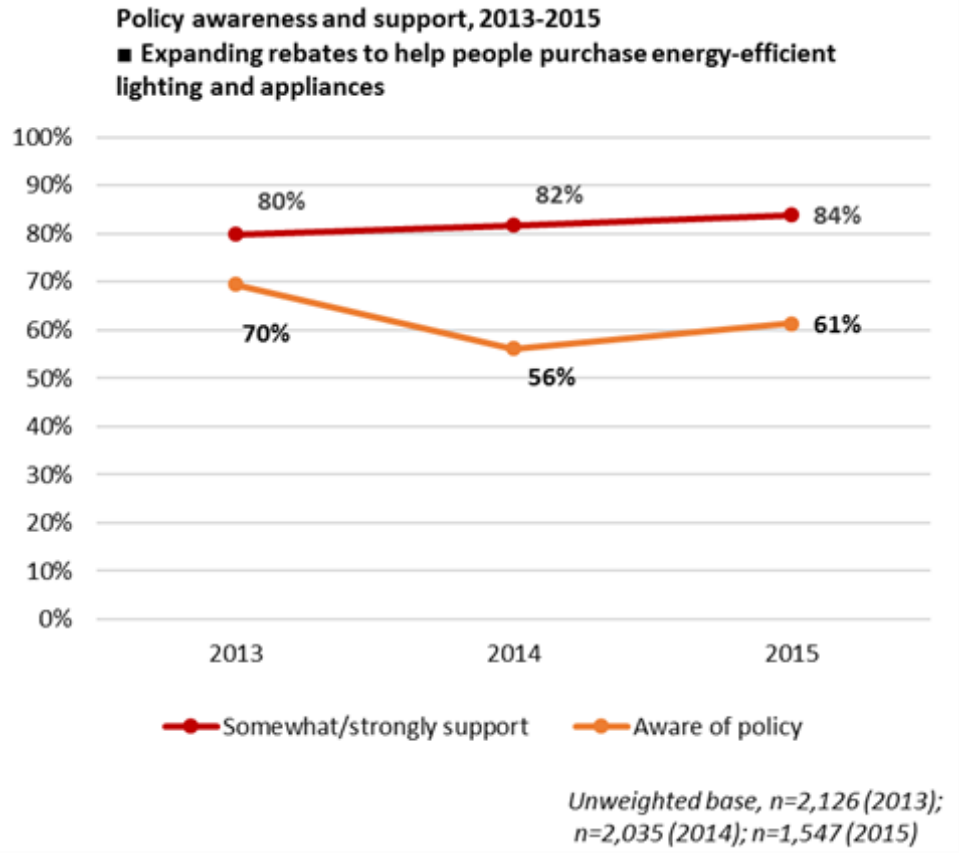
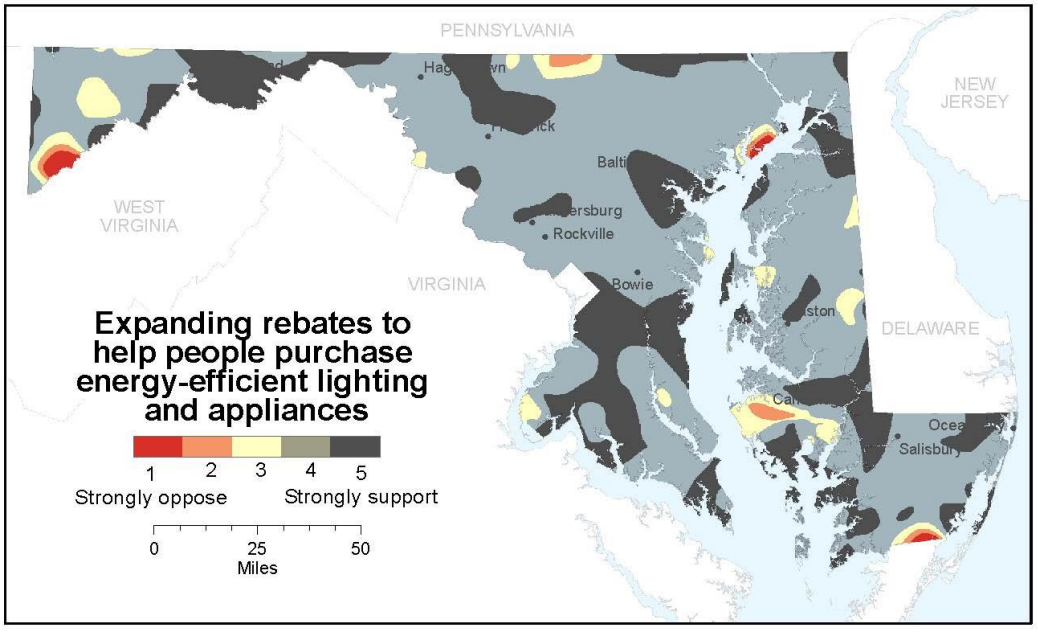


Figure 8 | *Expanding energy efficiency rebates is broadly supported across the state*



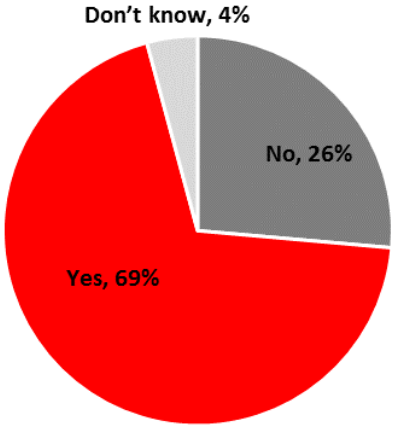
3. Residents urge caution on hydraulic fracturing for natural gas

More than two-thirds of the state (69%) have heard of the practice used to extract natural gas from shale formations deep in the earth using methods called hydraulic fracturing, or "fracking" (Figure 9); a majority support a delay or an outright ban on the practice. Natural gas can be produced a number of ways, depending on its source underground. Until recently, extracting natural gas from shale was too difficult and expensive.[13] In the last few decades, horizontal drilling and hydraulic fracturing have made these resources increasingly accessible and economical.[14]

Maryland law prohibits the use of hydraulic fracturing in the state until October 2017 while the Maryland Department of the Environment develops regulations for the practice.[15] At the same time, environmental organizations have been challenging the repurposing of the liquefied natural gas terminal on the Chesapeake Bay in Calvert County to allow exports, which they argue would incentivize the production of natural gas produced by hydraulic fracturing.[16]

Figure 9 | *More than two-thirds of residents have heard of hydraulic fracturing, or "fracking"*

Hydraulic fracturing is a drilling method that uses high-pressure water and chemicals to extract oil and natural gas from underground rock formations. Drilling for gas from underground shale formations is being considered in Maryland. Before today, had you heard of hydraulic fracturing, also sometimes called "fracking"?



Unweighted base, n=1,547

Gas extraction in Maryland will bring jobs – and harmful impacts – residents say

Awareness of hydraulic fracturing is slightly higher in the Western region of the state, where it is most likely to occur (Western, 76%; Central, 72%; Southern, 62%; Eastern, 62%) (Appendix, Table 8).

[13] U.S. Energy Information Administration. (2010). *Schematic geology of natural gas resources*. Washington, DC: U.S. Dept. of Energy. Available at http://www.eia.gov/oil_gas/natural_gas/special/ngresources/ngresources.html

[14] U.S. Energy Information Administration. (2011*). Review of emerging resources: U.S. shale gas and shale oil plays.* Washington, DC: U.S. Dept. of Energy. Available at http://www.eia.gov/analysis/studies/usshalegas/

[15] Hicks, J. (2015, May 29). Md. fracking moratorium to become law without Hogan's signature. *The Washington Post*. Available at http://www.washingtonpost.com/local/md-politics/md-fracking-moratorium-to-become-law-without-hogans-signature/2015/05/29/e1d10434-062c-11e5-a428-c984eb077d4e_story.html

[16] Chesapeake Climate Action Network. (nd). *Stop Cove Point: No fracked gas exports*. Takoma Park, MD. Available at http://chesapeakeclimate.org/maryland/covepoint/

Marylanders are most likely to say that the state would gain new jobs from allowing the practice (66%), but also list a number of likely environmental impacts, including harm to wildlife (61%), water pollution (59%), soil contamination (58%), and increased truck traffic (53%). Just less than half cite public health as a concern (47%) (Figure 10). People in all regions are most likely to list new jobs as a likely result of allowing fracking (Western, 75%; Central, 66%; Southern, 67%; Eastern, 72%) (Appendix, Table 9). After jobs, Western Marylanders cite increased truck traffic (64%), harm to wildlife (63%), water pollution (60%), and soil contamination (57%). Harm to people's health is thought to be a likely consequence by 57% of Central Marylanders, but only 43% of people in the four westernmost counties of the state (Southern, 46%; Eastern, 41%).

Figure 10 | *Residents say "fracking" likely to bring new jobs, environmental damage, traffic*

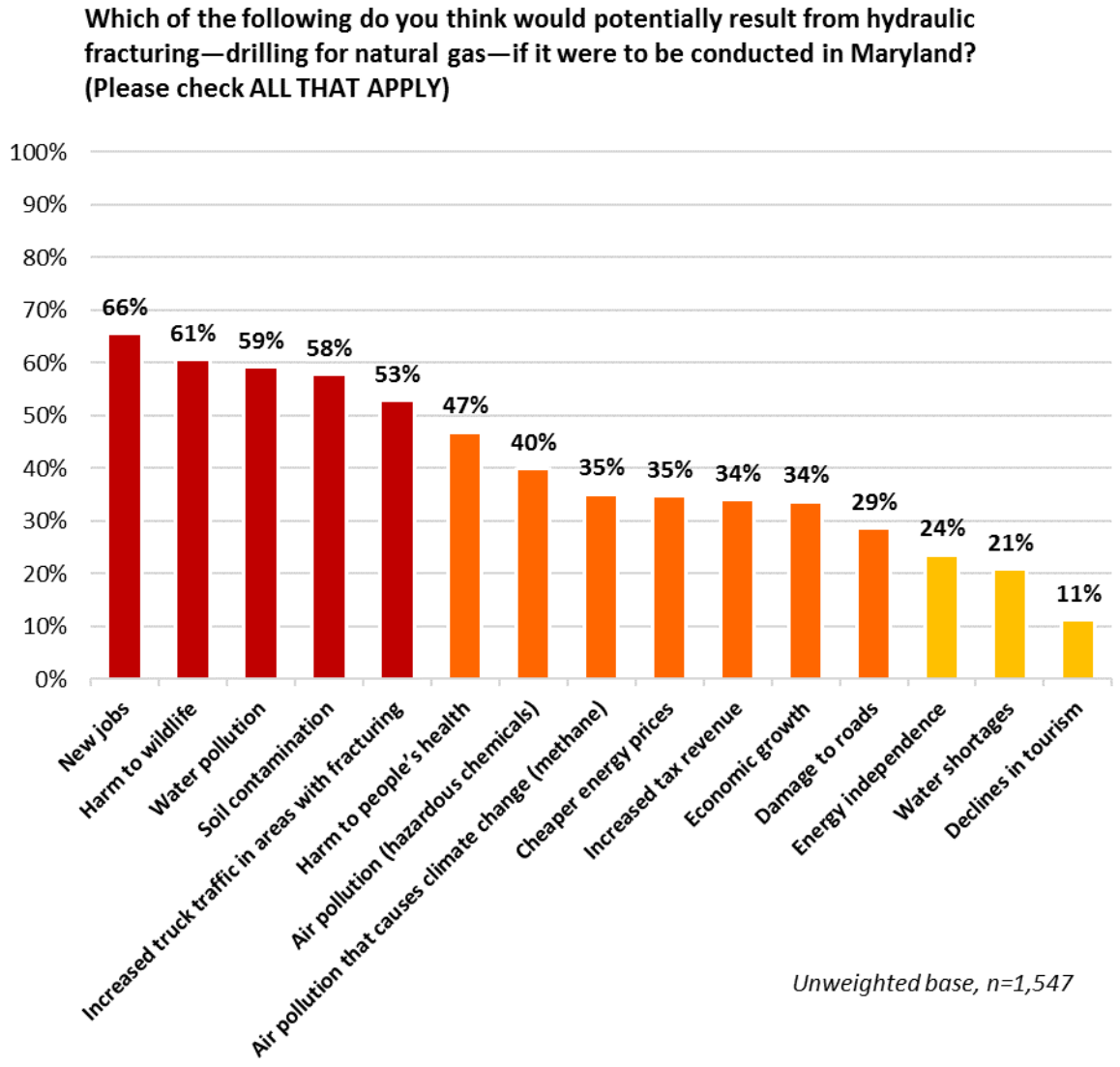
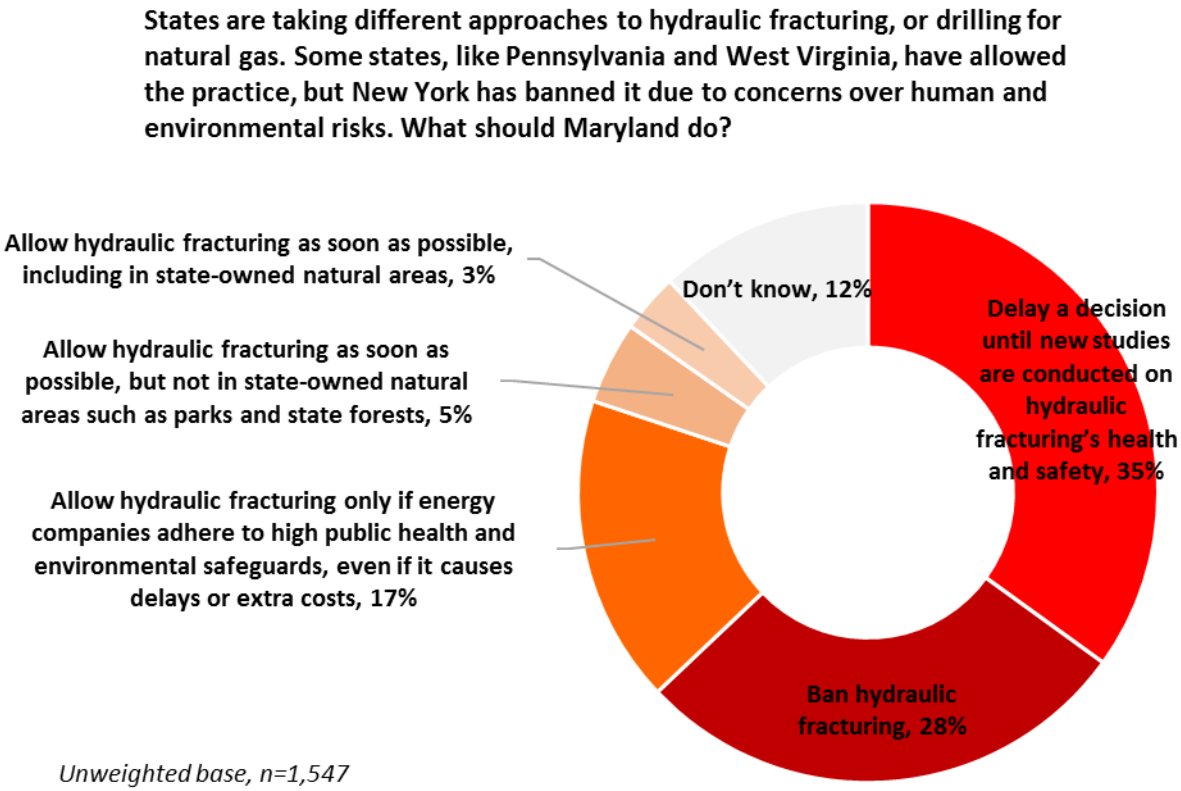


Figure 11 | *A majority back either a delay or a ban on hydraulic fracturing in Maryland*



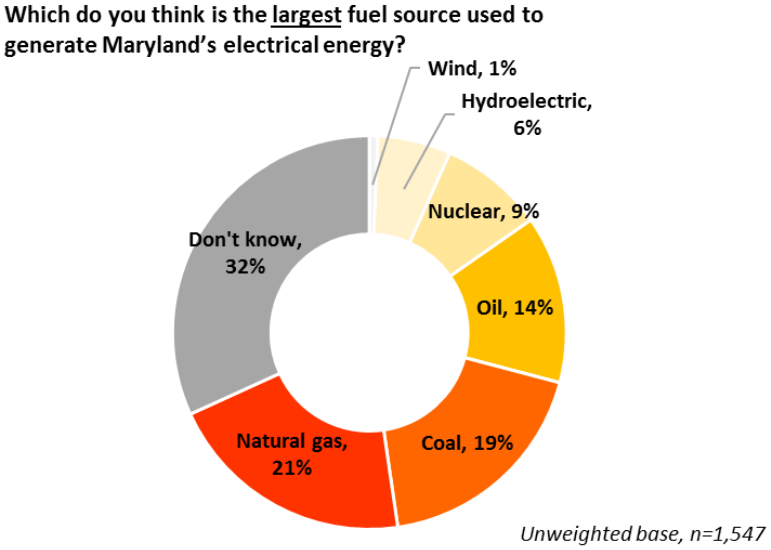
Most support either a delay or outright ban

This survey was fielded before the state's decision to delay hydraulic fracturing for two years. Few Marylanders say that they would like to see the energy source developed immediately in the state (8%) (Figure 11) (Appendix, Table 10). Most either support a delay to further consider new studies (35%) or an outright ban (28%). The percentage in favor of a ban remains consistently about a quarter of each region (Western, 26%; Central, 28%; Southern, 27%; Eastern, 28%). Western residents are equally divided between a ban (26%), delaying a decision until new studies are conducted on hydraulic fracturing's health and safety (26%), and allowing hydraulic fracturing only if energy companies adhere to high public health and environmental safeguards, even if it causes delays or costs (25%). The remainder either say they don't know (12%) or that the gas extraction should be allowed as soon as possible (11%).

4. Many are unclear about what fuels their electrical energy

In 2014, 7% of the state's net generation of electricity came from renewable sources.[17] The two largest sources of Maryland's electricity generation are coal-fired (40%) and nuclear (40%) power plants with natural gas a distant third (15%). In 2013, we asked Marylanders which were the largest fuel sources that generated the state's electricity. Almost half said they didn't know. By 2015 only a third of residents said they didn't know (32%) (Figure 12). They were also more likely to get the answer right. In 2013, oil and natural gas were identified as the biggest sources (23%/22%), even though oil fuels very little of the state's power, less than 1% (about the same as in the U.S. as a whole). This year, Marylanders told us they believe that coal (21%) and natural gas (19%) are the largest sources of the state's electrical energy, with oil (14%) and nuclear (9%) coming in third and fourth. National figures for electrical generation by fuel source are similar to Maryland's: coal, 39%; natural gas, 27%; nuclear, 19%; hydropower, 6%; and other renewables, 7%.[18] Marylanders also understand that little of the state's electricity comes from renewable sources. Only 6% say that most of the state's power is hydroelectric, and 1% that it is wind-generated. Residents in the state's Western region are more likely to say that coal (32%) is the largest source of the state's electricity compared to other regions (Central, 17%; Southern, 18%; Eastern, 19%). Few in any of the regions correctly identify nuclear as one of the state's largest electricity sources (Western, 5%; Central, 7%; Southern, 15%; Eastern, 11%).

Figure 12 | *Many cannot identify the largest fuel sources used to generate the state's electricity*



[17] U.S. Energy Information Administration. (2015). *Maryland state profile and energy estimates*. Washington, DC: U.S. Department of Energy. Available at http://www.eia.gov/state/?sid=MD#tabs-4.

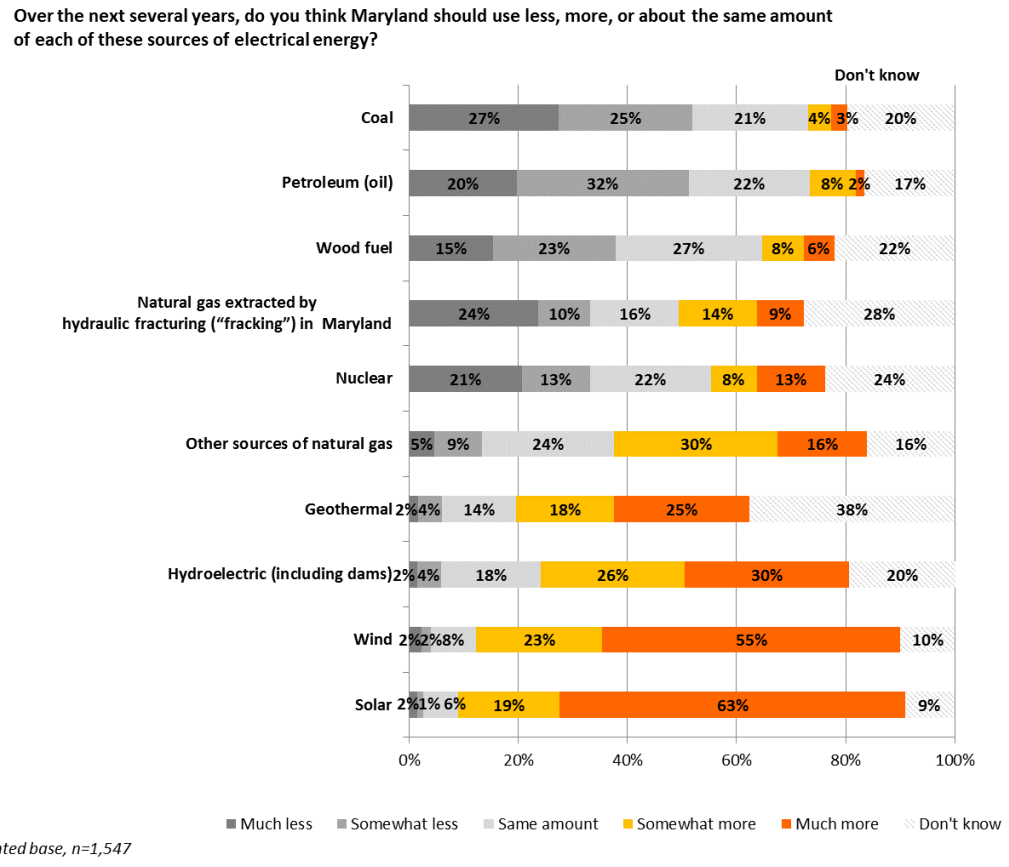
[18] U.S. Energy Information Administration. (2015). *FAQ: What is U.S. electricity generation by source?* Washington, DC: U.S. Department of Energy. Available at http://www.eia.gov/tools/faqs/faq.cfm?id=427&t=3

5. Solar and wind energy are increasingly favorites for growth

When you turn on a light switch, there is little to suggest which energy source fuels the flow of electrons that brighten the bulb. Perhaps unsurprisingly, many Marylanders are somewhat ambivalent about where their electrical energy comes from. Those who say they are content with the current mix of electrical energy sources or don't have an opinion about whether we should use more or less of specific fuels range from a low of 16% for solar energy to 51% for geothermal (Figure 13). In addition to geothermal, Marylanders are most ambivalent about wood fuel (49%), nuclear (46%), coal (41%), and natural gas (40%).

Solar and wind have the lowest rates of energy fuel ambivalence, and the highest rates of support for their growth in the electrical power mix. In 2015, 63% of Marylanders told us they want "much more" solar power, and 55% say the same of wind (Figure 13). These numbers are fairly consistent across the state's regions, ranging from 61% to 69% support for "much more" solar (Western region, 69%; Central, 61%; Southern, 61%; Eastern, 67%); and 52% to 59% for wind (Western region, 59%; Central, 54%; Southern, 52%; Eastern, 58%) (Appendix, Table 11).

Figure 13 | *Marylanders most favor solar and wind, and least favor oil and coal*



Unweighted base, n=1,547

Solar and wind jump 16-19 percentage points in favorability between 2013 and 2015

Over the past three years solar and wind have become increasingly preferred sources of electrical energy (Figure 14). Between 2013 and 2015 there was an increase in 16 percentage points – from 47% to 63% – in the number of people who said that there should be much more solar energy produced. Most of that change occurred due to smaller percentages of people saying they didn't have an opinion – a drop of 11 percentage points in those that said they didn't know. With wind energy, a similar phenomenon occurred.[19] There was an increase in 19 percentage points of those people who said that much more wind energy should be produced, a shift from 36% to 55%.

Hydroelectric and geothermal energy are favored less than solar and wind

Hydroelectric power is the largest single source of renewable electrical energy currently generated in Maryland.[20] Almost all of the state's hydroelectricity comes from the Conowingo dam on the Susquehanna River; another seven small hydroelectric plants also provide power. In 2015, more than half of Marylanders say they would like to see more of the state's electric power come from hydroelectric (57%) (Figure 13). This support remains consistent across the state's regions (Western, 58%; Central, 57%; Southern, 55%; Eastern, 55%) (Appendix, Table 11). The state is not currently projecting any increases from hydroelectric power.

For the first time this year we also asked about geothermal energy sources. Marylanders were the most unfamiliar with this energy source; 38% said they didn't have an opinion (Figure 13). About 4 in 10 Marylanders say they would like more geothermal sources of energy to be used in the state. Geothermal power is used to generate electricity in some areas of the United States; in Maryland it is used to run heat pumps that provide heating and cooling. About half of the Western and Eastern regions favor more use of geothermal energy sources (Western, 50%; Eastern, 52%); just under half of the Central (41%) and Southern regions (44%) are supportive (Appendix, Table 11).

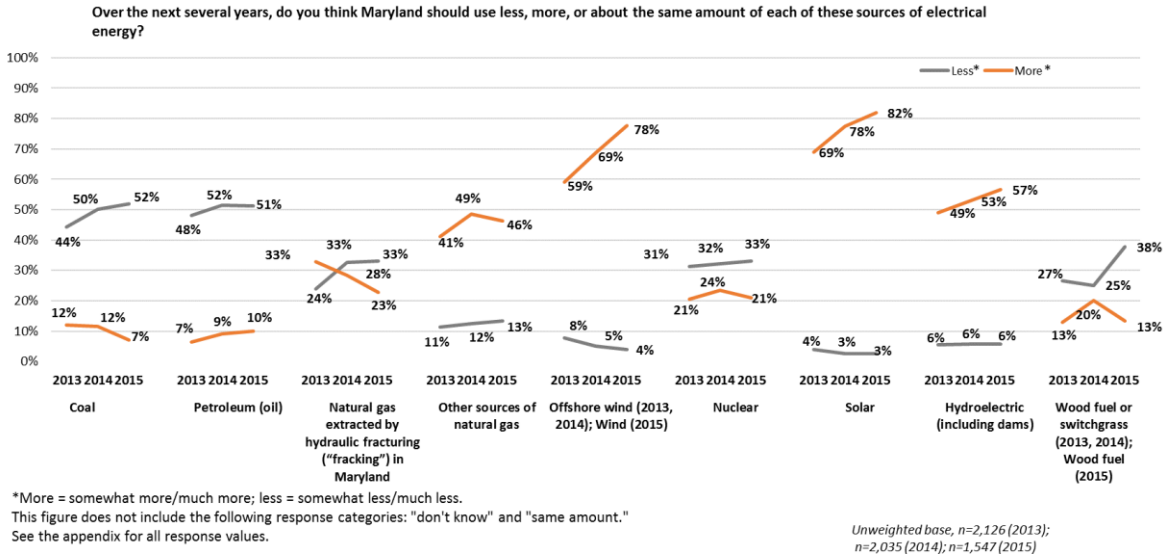
Coal and oil are unfavored sources of electrical energy

Just over half of Marylanders say they would like to see less coal (52%) and oil (51%) used to generate the state's electrical energy (Figure 13). As we noted above, less than 1% of electrical energy currently comes from oil. Few Marylanders say they would like to see more coal-fired power (7%); the rest either say they don't know (20%), or it should stay the same (21%). Regional differences are evident in preferences for the use of coal. Only 40% of the Western

[19] Between 2014 and 2015 individual questions about land-based and offshore wind were condensed into one question for "wind" power because respondents did not appear to distinguish between the two. As a result, the statistical comparisons across the years with the 2015 question are also almost identical.

[20] U.S. Energy Information Administration. (2015). *Profile analysis, Maryland.* Washington, DC: U.S. Dept. of Energy. Available at http://www.eia.gov/state/analysis.cfm?sid=MD

Figure 14 | *Three-year trends show rises in favorability of solar, wind, and hydro power*



region of the state – the four westernmost counties stretching into Appalachian mountains – said they prefer to see less of the fuel source, while 53% said the same in the Central region, ranging from the suburbs of Washington, D.C. to Baltimore (Appendix, Table 11).

Preferences for natural gas sources become more polarized by "fracking" over three years

As mentioned above, many Marylanders remain ambivalent about natural gas; 40% either say they don't know whether they would like to see more or less used to power the state's electricity or that they believe the current levels should remain the same (Figure 13). Another 46% say they favor an increase in natural gas use; only 13% say they prefer a decrease in the fossil fuel's use. From 2013 to 2015, preferences for natural gas have remained largely static (Figure 14). Support rose in 2014, but then slightly declined in 2015.

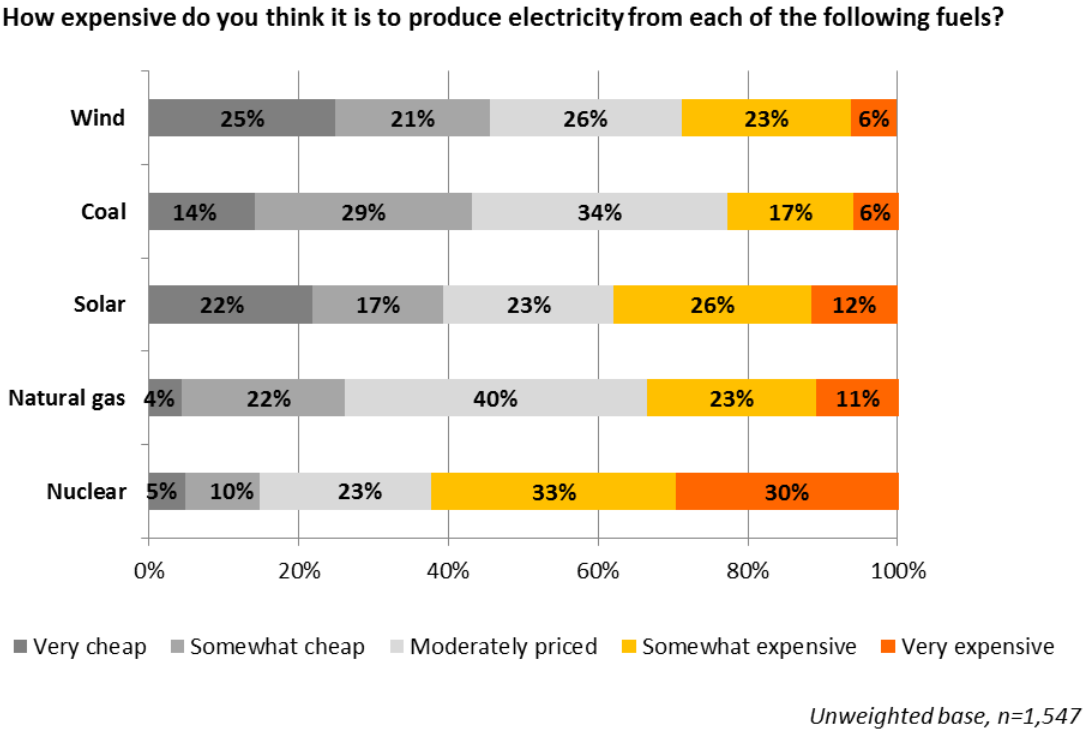
Residents' opinions about natural gas produced by hydraulic fracturing in the state demonstrate a different, and more variable, pattern. More than a quarter (28%) of Marylanders do not have an opinion on the use of hydraulic fracturing in the state, a relatively consistent number over the past three years (Appendix, Table 11). Of those who have an opinion, the balance has shifted increasingly against its use. In 2013, one third of the public (33%) said they would like to see more "fracked" gas used as a fuel source for power; by 2015 that number dropped to 23% (Figure 14). Regionally, there is little difference in public attitudes. Roughly a quarter of residents across the state say they would like to see more "fracked" natural gas (Western, 29%; Central, 23%; Southern, 26%; Eastern, 29%) (Appendix, Table 11). Between 40 to 50% of the state says the same about natural gas extracted by other methods (Western, 50%; Central, 48%; Southern, 52%; Eastern, 41%).

6. Marylanders say solar, wind, coal and gas are cheap to moderately priced, and are willing to pay more for renewables

Energy bills don't come with a break-out of what it costs to produce electricity by power plant, so the variable cost of generation based on energy sources isn't something that most people are likely to spend much time considering. However, these costs influence the amount of commercial and political investment required to implement new power sources and the size of consumers' bills downstream. Most Marylanders say that wind, coal, solar, and natural gas are cheap or moderately priced (Figure 15). Alternatively, they say nuclear power is somewhat or very expensive.

Estimates for energy costs differ based on the type of analysis and break-down between specific technologies. A 2014 Lazard report found that alternative energy technologies are cost-competitive with conventional technologies in some cases.[21] They priced utility-scale solar ($72-$86/MWh) and land-based wind ($37-$81/MWh) as more cost effective than nuclear ($92-$132/MWh) and potentially even coal ($66-$151/MWh).

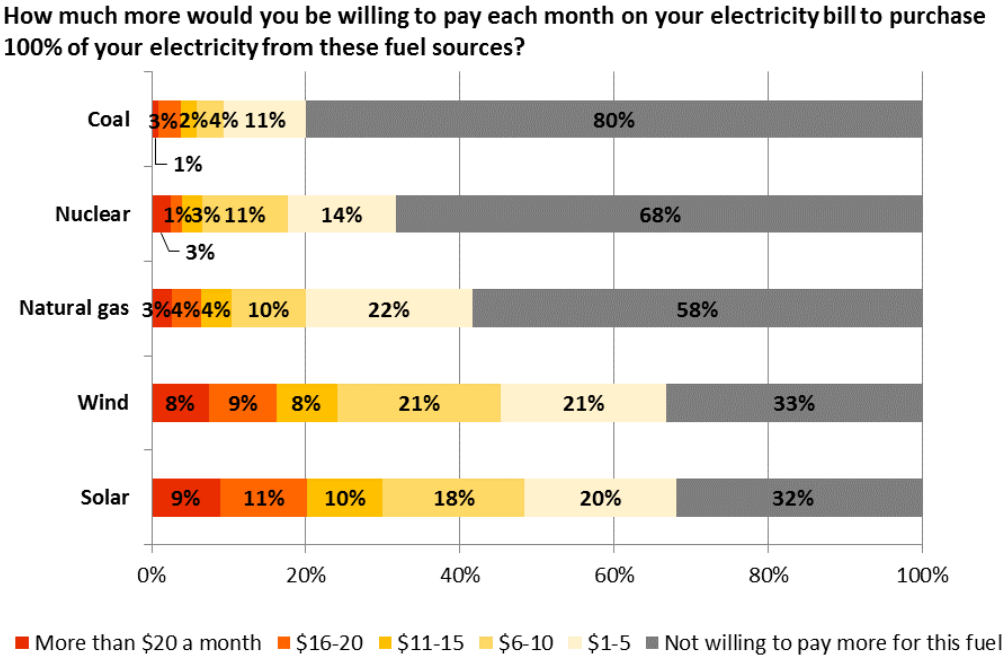
Figure 15 | *Nuclear is perceived as the most expensive source of electricity*



Unweighted base, n=1,547

[21] Lazard. (Sept. 2014). Lazard's Levelized Cost of Energy Analysis—Version 8.0. Available at https://www.lazard.com/media/1777/levelized_cost_of_energy_-_version_80.pdf

Figure 16 | *Marylanders are most willing to pay for renewable energy sources*



Unweighted base, n=1,547

In summer 2015, *Annual Energy Outlook* conducted a different type of analysis, projecting the cost of power generated from technologies to be brought online in 2020.[22] The total system costs (2013, U.S. average levelized) for geothermal ($47.8/MWh), land-based wind ($73.6/MWh), natural gas ($75.2/MWh), hydroelectric ($83.5/MWh), coal ($95.1/MWh) and nuclear ($95.2/MWh) are among the lowest, and notably include renewable energy sources currently in use within Maryland (wind power and hydroelectric). The highest projected costs include photovoltaic solar ($125.3/MWh) and offshore wind ($196.9/MWh). Maryland currently generates land-based wind power, but its largest potential for wind-generated energy lies offshore.[23]

Most Marylanders say that wind (71%), coal (77%), solar (62%) and natural gas (67%) are cheap or moderately priced (Figure 15). In contrast, more than 6 in 10 Marylanders say nuclear power is somewhat or very expensive (62%). All regions of the state say nuclear is an expensive source of energy (Western, 63%; Central, 61%; Southern, 66%; Eastern, 58%) (Appendix, Table 14).

[22] U.S. Energy Information Administration. (June 2015*). Levelized cost and levelized avoidance of cost of new generation resources in the Annual Energy Outlook 2015*. Washington, DC: U.S. Dept. of Energy. Available at http://www.eia.gov/forecasts/aeo/pdf/electricity_generation.pdf

[23] U.S. Energy Information Administration. (2015). *Profile analysis, Maryland.* Washington, DC: U.S. Dept. of Energy. Available at http://www.eia.gov/state/analysis.cfm?sid=MD

Consumers place a premium on solar and wind power

A majority of the state does not want to pay more each month on their electricity bill for coal-, nuclear-, and natural gas-powered electricity (80%, 68%, 58%, respectively), but they will pay more for wind (67%) and solar (68%) (Figure 16). Substantial percentages say they are willing to pay $6 or more each month to do so (wind, 45%; solar, 48%). This willingness to place a premium on these energy sources extends across the state from the four westernmost counties (wind, 63%; solar, 64%) to the Eastern Shore (wind, 65%; solar, 66%) (Central, 66%/68%; Southern, 67%/67%) (Appendix, Table 15).

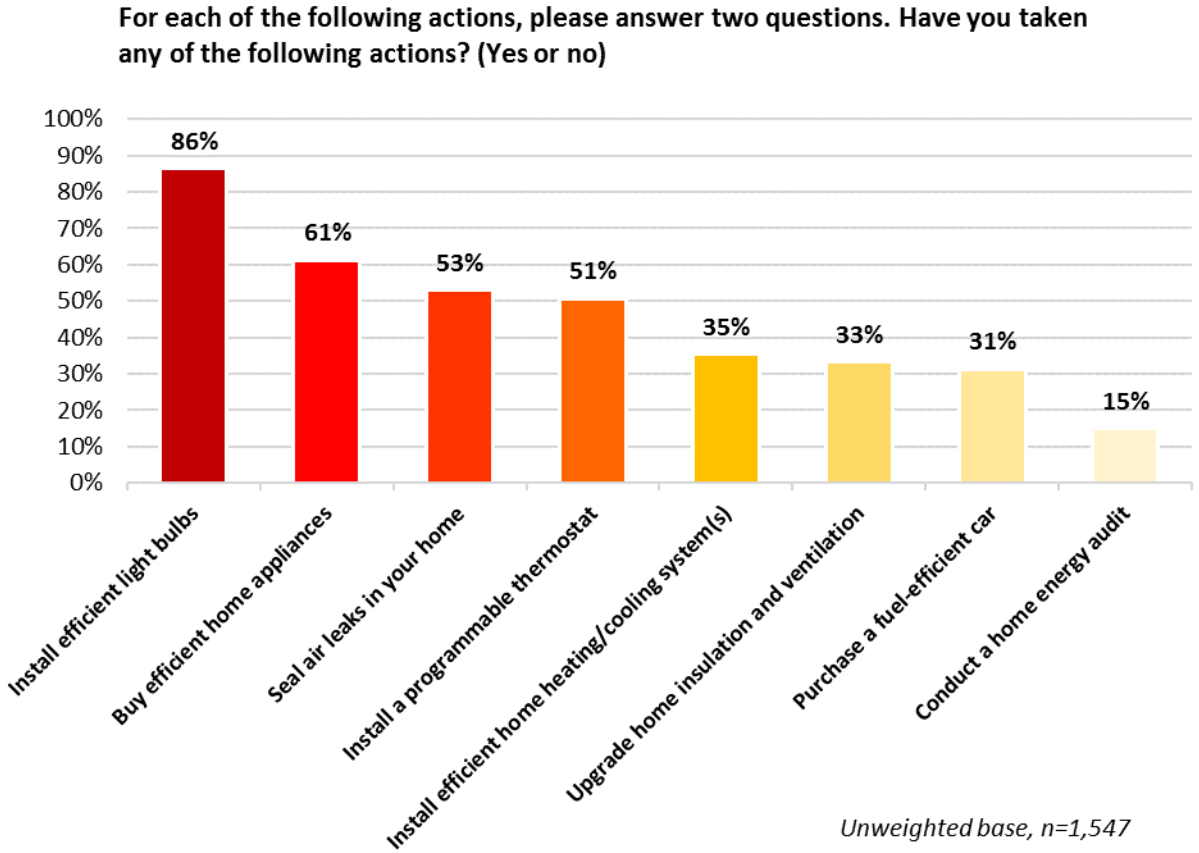
More than a third of Marylanders say they have faced difficulty in paying electricity bills

While many Marylanders say they are willing to pay a premium every month for renewable energy sources, a significant proportion (37%) admit to having experienced difficulties paying their electric bills over the last five years (Appendix, Table 16). More than half (54%) of respondents on the Eastern Shore say so, and just over a third of residents in the other regions of the state (Western, 36%; Central, 36%; Southern, 39%).

7. Energy efficiency and conservation are popular; recycling is perceived as purely "green"

State residents say they are taking many actions to save energy at home. Nationally, space heating accounts for the most household energy use (45%).[24] Ensuring that home heating systems are energy efficient is just one part of the solution, checking the envelope of the house for air leaks and adequate insulation is the other. Households can also save between 5 to 30 percent on their energy bills by taking steps recommended during a home energy audit to save energy. After home heating, water heating (18%), space cooling (9%) and lighting (6%) are some of the largest culprits in driving up household energy costs.[25]

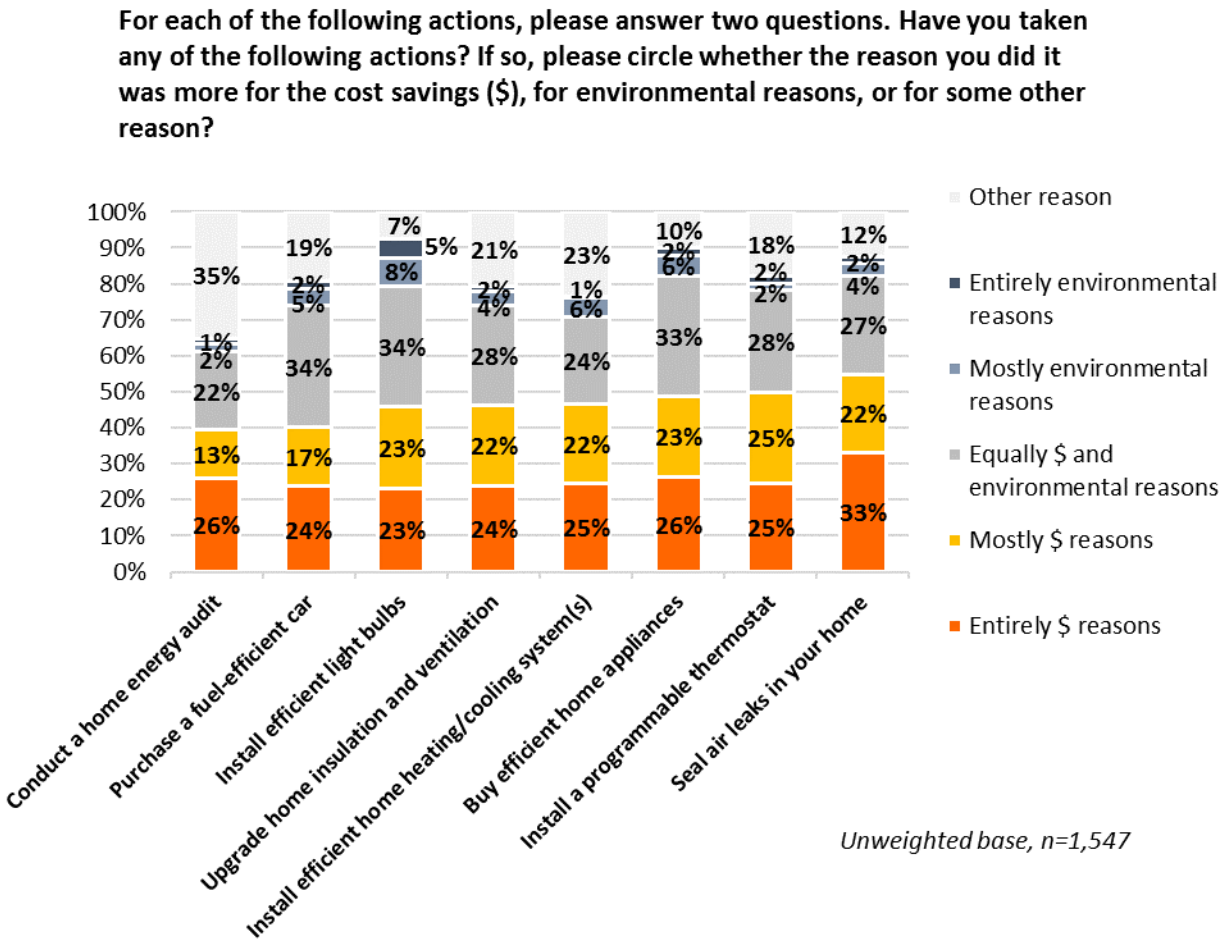
Figure 19 | *Almost all Marylanders have updated to more efficient light bulbs*



[24] U.S. Dept. of Energy. (2013). *Home energy saver 101 infographic: Home energy audits.* Washington, DC: Energy.gov, U.S. Dept. of Energy. Available at http://energy.gov/articles/energy-saver-101-infographic-home-energy-audits

[25] U.S. Dept. of Energy. (2011). *Residential sector: Buildings energy data book.* Washington, DC: Building Technologies Program, Energy Efficiency & Renewable Energy, U.S. Dept. of Energy. Available at http://buildingsdatabook.eren.doe.gov/ChapterIntro2.aspx

Figure 20 | *Few conserve energy solely for environmental reasons*



More than half of Marylanders say they have sealed air leaks in their home (53%) and installed programmable thermostats (51%) that allow them to conserve energy more effectively (Figure 19). Yet most have not conducted an energy audit (15%), upgraded insulation and ventilation (33%), or installed an energy efficient heating/cooling system (35%) that would allow them to save the most energy while keeping their homes warm in the winter and cool during the summer. Installing efficient light bulbs (86%) and efficient home appliances (61%) are the most commonly performed energy efficiency actions. All regions of the state are more likely to have installed efficient bulbs than to have taken any other energy efficiency actions (Western, 90%; Central, 84%; Southern, 88%; Eastern, 87%) (Appendix, Table 17).

Cost savings are most likely to drive home and transportation efficiency upgrades

Few people say they conserve energy solely for environmental reasons. Just over 1 in 10 Marylanders say they have replaced their light bulbs for mostly or entirely environmental reasons; the largest percentage for any of the behaviors for which we asked. Most say the

energy efficiency and conservation actions they take are for either financial reasons, or jointly environmental and financial reasons. Cost savings is the stated driver for half or more of Marylanders in sealing air leaks (55%) and installing a programmable thermostat (50%) (Figure 20). Financial savings are the biggest drivers for five of the behaviors in the Western region of the state, compared to three in the Central and Southern regions, and two in the Eastern Shore counties (Appendix, Table 18).

State residents make turning off lights, adjusting the thermostat, and recycling a habit

Purchasing energy-efficient systems or performing home upgrades can be some of the most effective ways to save energy because they only require people to make a single decision. Changing people's everyday habits can be much harder. Yet high percentages of Marylanders report turning off lights (98%), adjusting their thermostats (84%), and recycling (82%) (Figure 21). Recycling is a habit for most Marylanders, but less so among residents of Eastern Shore counties (67%) – between 16 and 19 percentage points lower than the Central and Southern regions (Appendix, Table 19).

Making changes in transportation habits can be more difficult than energy conservation actions or efficiency upgrades; less than a third report walking or biking instead of driving (31%) or taking public transportation (22%). These actions are also understandably less likely to be practiced in the more rural areas of the state. Only 4% of the four westernmost counties say they take public transportation.

Few view recycling as having financial benefits; the habit is perceived as all "green"

Three-quarters of Marylanders (75%) say they recycle for mostly or entirely environmental reasons. All areas of the state are most likely to recycle for environmental reasons, but the Southern region (79%) more so than the Eastern Shore (66%) (Appendix, Table 20). Those who make alternative transportation choices – such as biking or walking, or taking public transportation – are most likely to say they do it for some other reason than financial savings or environmental protection (Figure 22).

Figure 21 | *Turning off lights, adjusting thermostats, and recycling are pervasive*

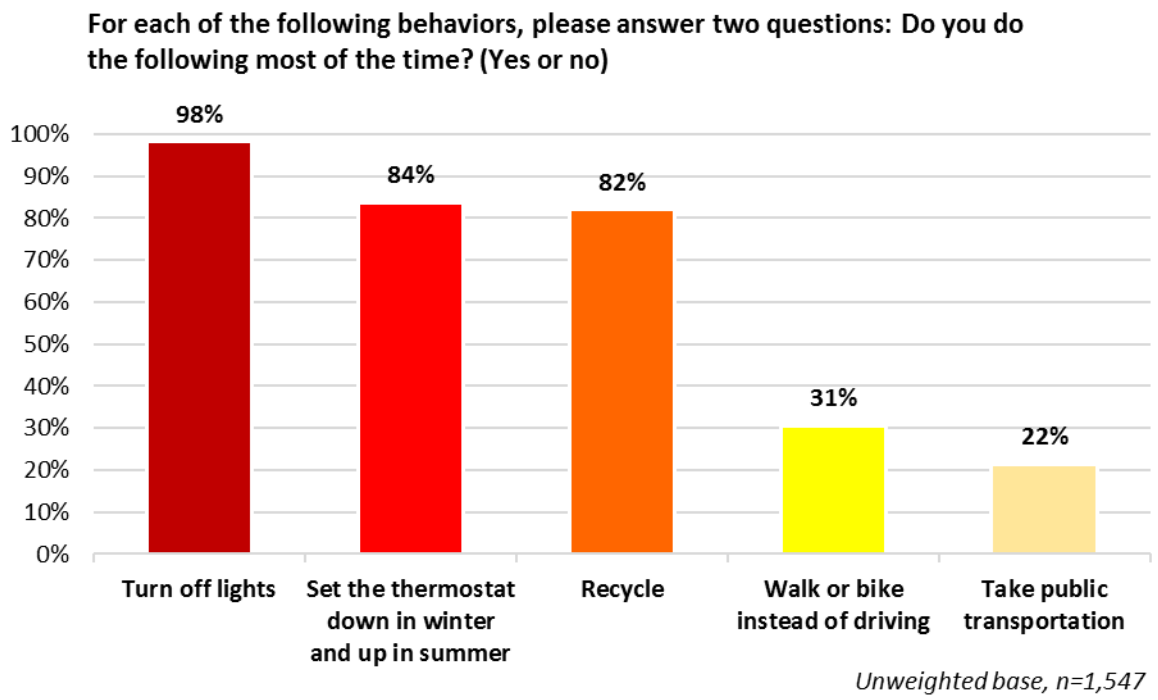
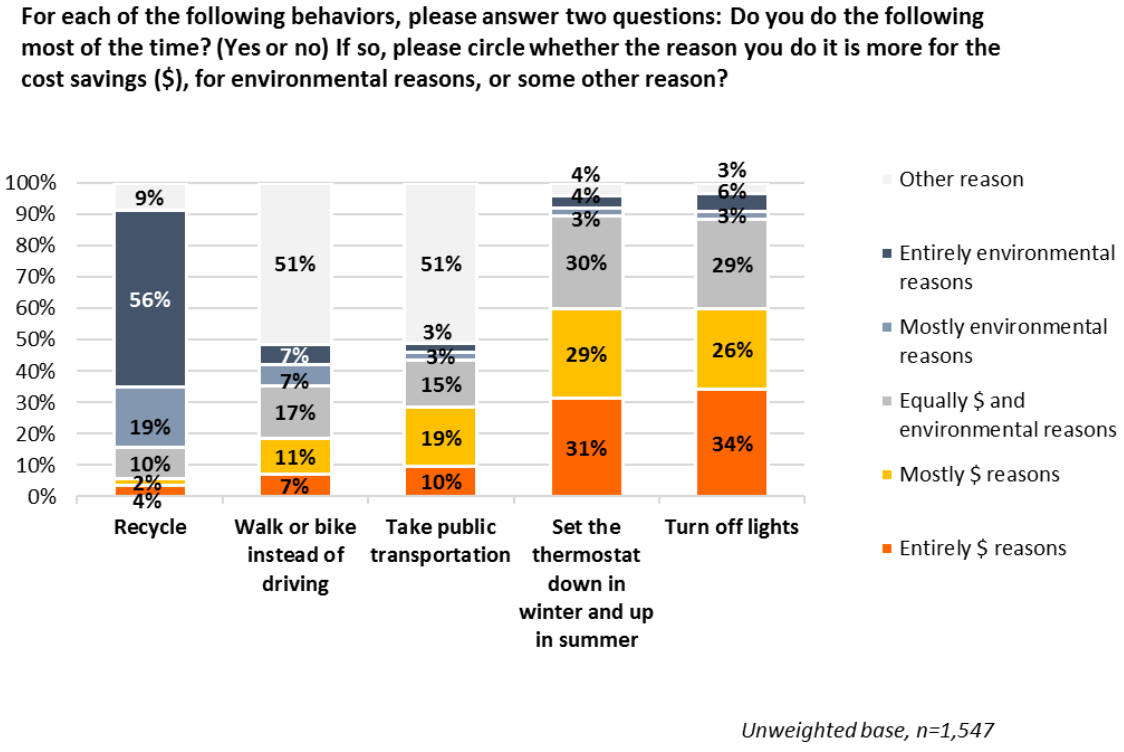


Figure 22 | *Recycling is perceived as a mostly pro-environmental activity*



8. Study methodology

This study was conducted by George Mason University's Center for Climate Change Communication in partnership with the Johns Hopkins Bloomberg School of Public Health to explore Marylanders' views on public health, energy and the environment. The survey instrument was developed at George Mason University, partially based on questions used in the Climate Change in the American Mind national surveys run by the Yale Project on Climate Change Communication (http://environment.yale.edu/ climate-communication/) and George Mason's Center for Climate Change Communication (http://climatechange communication.org/). The mail survey consisted of 48 questions, and took approximately 20 minutes to complete.

For reporting purposes, the data have been broken into three separate documents on Marylanders' attitudes, behaviors and policy preferences regarding public health and climate change, energy, and climate change generally.

The unweighted sample margin of error is +/- 2.5 percentage points at the 95% confidence interval for the state and less than +/- 5.7 percentage points for each region (Table 1).

Sampling design; fielding

The survey was mailed to 6,401 households in the state of Maryland, randomly selected from within each of four regions of the state from Survey Sampling International household address databases, based primarily on U.S. Postal Service delivery route information. We sampled at the regional level to ensure the final data were generalizable to these distinctly different geographic and cultural areas of the state, as well as the state as a whole. The sample size for the Central region of the state was higher relative to the other three regions because it accounts for more than half of the state's population. Households that responded to the survey in 2013 and 2014 were not re-contacted in 2015.

The survey was fielded from April 11 to June 24, 2015. Each household was sent up to four mailings: an announcement letter introducing the survey (April 11), a copy of the survey with a $2 bill as a thank you (April 20), a reminder postcard (May 4), and a follow-up survey (May 18). (As a point of comparison, the previous surveys were fielded from March 28 to June 4, 2013, and March 17 to June 10, 2014, 2014. Methodology for the 2013 and 2014 surveys is available within those reports at climatemaryland.org.) In order to achieve randomization of respondents within each household, we requested that the person with the most recent birthday complete the survey. Households that completed and returned the survey were taken off of subsequent mailing lists.

Weighting

The data tables report percentages for the state and each region. State data were weighted for regional representation, gender, age, and education level based on 3-year American Community Survey data from the U.S. Census Bureau. Each region's data were also weighted for the same demographic variables. Base unweighted sample sizes for each question are reported in addition to the weighted percentages. Respondents who did not provide regional, gender, age or education level data were dropped from the data set. This lowered the number of respondents by 64 cases. (The overall response rate for the study before those cases were dropped was 28%.) Please see the demographics section of the appendix for more information on the characteristics of the survey sample pre- and post-weighting.

Institutional Review Board

The study was reviewed by Institutional Review Boards for both George Mason University (Protocol #8508) and Johns Hopkins Bloomberg School of Public Health (Protocol #00006315).

Table 1 | *Regional samples, response rates and margin of error*

Region	Counties	Mailing #	Refusals	Undeliverable	Respondents	Response rate	Margin of error
Western	Allegany, Frederick, Garrett, Washington	1,467	14	115	424	31%	4.76
Central	Baltimore, Carroll, Cecil, Harford, Howard, Montgomery, Baltimore City	2,000	15	135	484	26%	4.45
Southern	Anne Arundel, Calvert, Charles, Prince George's, St. Mary's	1,467	4	99	297	22%	5.69
Eastern	Caroline, Dorchester, Kent, Queen Anne's, Somerset, Talbot, Wicomico, Worcester	1,467	6	232	342	28%	5.3
State		***6,401***	***39***	***581***	***1,547***	***27%***	***2.49***

Appendices

– Data tables
– Sample demographics

The following tables provide data at the state and regional level for each of the questions included in this survey report. “Unweighted n” refers to the number of people who responded to each question. The samples were weighted to better approximate U.S. Census data on state population distributions. More information can be found in the study methodology section. The counties included in each region are listed below.

Region	Counties
Western	Allegany, Frederick, Garrett and Washington counties
Central	Baltimore, Carroll, Cecil, Harford, Howard, Montgomery counties and Baltimore City
Southern	Anne Arundel, Calvert, Charles, Prince George's and St. Mary's counties
Eastern	Caroline, Dorchester, Kent, Queen Anne's, Somerset, Talbot, Wicomico and Worcester counties
State	All counties

Data tables | Maryland's Renewable Portfolio Standards (RPS)

Table 1 | *Awareness of current state renewable energy standards*

Maryland has begun implementing policies to promote new sources of energy and use energy more efficiently. For each of the following policies, please answer two questions: Have you heard of this policy?

		STATE	WESTERN	CENTRAL	SOUTHERN	EASTERN
Requiring that Maryland's electricity suppliers provide 20% of their total electricity from renewable energy sources by 2022 (such as solar, wind, biomass, landfill gas, and hydroelectric power)	Yes	38.2%	44.8%	38.4%	38.6%	43.5%
	No	61.8%	55.2%	61.6%	61.4%	56.5%
	Unweighted n	1462	408	457	280	317

		2013	2014	2015	Δ 2014-2013	Δ 2015-2014	Δ 2015-2013
Requiring that Maryland's electricity suppliers provide 20% of their total electricity from renewable energy sources by 2022 (such as solar, wind, biomass, landfill gas, and hydroelectric power)	Yes	36.2%	25.5%	38.2%	-10.7%	12.7%	2.0%
	No	63.8%	74.5%	61.8%	10.7%	-12.7%	-2.0%
	Unweighted n	2006	1930	1462			

Table 2 | *Support for current state renewable energy standards*

Maryland has begun implementing policies to promote new sources of energy and use energy more efficiently. How much do you support or oppose this policy?

		STATE	WESTERN	CENTRAL	SOUTHERN	EASTERN
Requiring that Maryland's electricity suppliers provide 20% of their total electricity from renewable energy sources by 2022 (such as solar, wind, biomass, landfill gas, and hydroelectric power)	Strongly oppose	4.1%	4.8%	4.4%	3.5%	3.7%
	Somewhat oppose	5.0%	2.4%	4.6%	5.9%	6.7%
	Neither support nor oppose	15.8%	17.3%	14.4%	22.9%	15.1%
	Somewhat support	25.5%	26.5%	25.6%	20.7%	29.9%
	Strongly support	49.5%	49.0%	51.0%	47.0%	44.6%
	Unweighted n	1279	357	397	246	279

		2013	2014	2015	Δ 2014-2013	Δ 2015-2014	Δ 2015-2013
Requiring that Maryland's electricity suppliers provide 20% of their total electricity from renewable energy sources by 2022 (such as solar, wind, biomass, landfill gas, and hydroelectric power)	Strongly oppose	6.6%	5.2%	4.1%	-1.4%	-1.1%	-2.5%
	Somewhat oppose	3.7%	3.4%	5.0%	-0.3%	1.6%	1.3%
	Neither support nor oppose	15.0%	18.4%	15.8%	3.4%	-2.6%	0.8%
	Somewhat support	27.8%	25.7%	25.5%	-2.1%	-0.2%	-2.3%
	Strongly support	46.8%	47.3%	49.5%	0.5%	2.2%	2.7%
	Unweighted n	1973	1905	1279			

Table 3 | *Support for strengthened renewable portfolio standards*

Maryland currently gets most of its electricity from the burning of fossil fuels like coal and natural gas. The state currently requires electricity suppliers to provide 20% of their electricity from renewable energy sources like wind and solar by 2022, but some Marylanders support legislation to increase the percentage to 40% by 2025. Do you support or oppose strengthening the current requirement for renewable energy?

	STATE	WESTERN	CENTRAL	SOUTHERN	EASTERN
I support requiring 40% renewable energy by 2025, even if it increases my electric bill by $10/month	22.3%	30.9%	22.2%	21.2%	24.8%
I support requiring 40% renewable energy by 2025, even if it increases my electric bill by $5/month	19.2%	16.4%	20.1%	15.8%	17.7%
I support requiring 40% renewable energy by 2025, even if it increases my electric bill by $2/month	9.9%	9.7%	10.7%	8.7%	8.3%
I support requiring 40% renewable energy by 2025, but only if it doesn't cost me money	21.1%	20.2%	18.5%	23.8%	18.5%
I oppose requiring 40% renewable energy by 2025	8.0%	8.6%	8.9%	7.7%	6.9%
Don't know	19.5%	14.1%	19.6%	22.8%	23.8%
Unweighted n	1525	419	474	297	335

Data tables | Renewable energy incentives

Table 4 | *Awareness of expanding renewable energy generation incentives*

Maryland has begun implementing policies to promote new sources of energy and use energy more efficiently. For each of the following policies, please answer two questions: Have you heard of this policy?

		STATE	WESTERN	CENTRAL	SOUTHERN	EASTERN
Expanding financial incentives for the generation of renewable energy (such as solar and geothermal)	Yes	43.4%	46.9%	44.8%	37.3%	55.0%
	No	56.6%	53.1%	55.2%	62.7%	45.0%
	Unweighted n	1466	406	458	283	319

Table 5 | *Support for expanding renewable energy generation incentives*

How much do you support or oppose this policy?

		STATE	WESTERN	CENTRAL	SOUTHERN	EASTERN
Expanding financial incentives for the generation of renewable energy (such as solar and geothermal)	Strongly oppose	2.5%	3.8%	2.4%	2.5%	2.9%
	Somewhat oppose	2.9%	1.9%	2.6%	3.3%	2.5%
	Neither support nor oppose	17.5%	20.8%	16.3%	27.1%	13.5%
	Somewhat support	28.3%	26.4%	28.5%	26.0%	28.2%
	Strongly support	48.8%	47.2%	50.2%	41.1%	52.9%
	Unweighted n	1287	353	405	248	281

Data tables | Energy efficiency rebates

Table 6 | *Awareness of expanding rebate programs*

Maryland has begun implementing policies to promote new sources of energy and use energy more efficiently. For each of the following policies, please answer two questions: Have you heard of this policy?

		STATE	WESTERN	CENTRAL	SOUTHERN	EASTERN
Expanding rebates to help people purchase energy-efficient lighting and appliances	Yes	61.3%	68.2%	62.2%	53.6%	74.0%
	No	38.7%	31.8%	37.8%	46.4%	26.0%
	Unweighted n	1480	406	466	285	323

		2013	2014	2015	Δ 2014-2013	Δ 2015-2014	Δ 2015-2013
Expanding rebates to help people purchase energy-efficient lighting and appliances	Yes	69.5%	56.1%	61.3%	-13.4%	5.2%	-8.2%
	No	30.5%	43.9%	38.7%	13.4%	-5.2%	8.2%
	Unweighted n	2022	1971	1480			

Table 7 | *Support for expanding rebate programs*

Maryland has begun implementing policies to promote new sources of energy and use energy more efficiently. How much do you support or oppose this policy?

		STATE	WESTERN	CENTRAL	SOUTHERN	EASTERN
Expanding rebates to help people purchase energy-efficient lighting and appliances	Strongly oppose	1.8%	3.5%	1.0%	2.2%	4.4%
	Somewhat oppose	4.4%	3.8%	5.3%	1.1%	3.6%
	Neither support nor oppose	9.9%	9.3%	11.3%	8.6%	3.6%
	Somewhat support	29.4%	26.0%	26.9%	41.1%	33.8%
	Strongly support	54.5%	57.4%	55.5%	47.1%	54.6%
	Unweighted n	1371	375	433	262	301

		2013	2014	2015	Δ 2014-2013	Δ 2015-2014	Δ 2015-2013
Expanding rebates to help people purchase energy-efficient lighting and appliances	Strongly oppose	3.6%	2.8%	1.8%	-0.8%	-1.0%	-1.8%
	Somewhat oppose	4.1%	2.8%	4.4%	-1.3%	1.6%	0.3%
	Neither support nor oppose	12.4%	12.6%	9.9%	0.2%	-2.7%	-2.5%
	Somewhat support	23.6%	29.4%	29.4%	5.8%	0.0%	5.8%
	Strongly support	56.3%	52.4%	54.5%	-3.9%	2.1%	-1.8%
	Unweighted n	2038	1951	1371			

Data tables | Hydraulic fracturing

Table 8 | *Awareness of "fracking," or hydraulic fracturing*

Hydraulic fracturing is a drilling method that uses high-pressure water and chemicals to extract oil and natural gas from underground rock formations. Drilling for gas from underground shale formations is being considered in Maryland. Before today, had you heard of hydraulic fracturing, also sometimes called "fracking"?

	STATE	WESTERN	CENTRAL	SOUTHERN	EASTERN
No	26.4%	22.1%	24.3%	27.7%	35.6%
Yes	69.4%	75.9%	71.8%	61.5%	62.3%
Don't know	4.2%	2.0%	3.9%	10.8%	2.2%
Unweighted n	1535	424	480	293	338

Table 9 | *Perceived risks and benefits from allowing hydraulic fracturing in Maryland*

Which of the following do you think would potentially result from hydraulic fracturing—drilling for natural gas—if it were to be conducted in Maryland? (Please check ALL THAT APPLY)

	STATE	WESTERN	CENTRAL	SOUTHERN	EASTERN
a. New jobs	65.6%	75.3%	65.5%	66.6%	71.7%
b. Damage to roads	28.6%	32.3%	28.4%	34.7%	22.9%
c. Increased tax revenue	34.0%	37.4%	34.3%	31.2%	34.5%
d. Soil contamination	57.9%	56.6%	57.4%	61.6%	49.0%
e. Water pollution	59.2%	60.1%	56.6%	74.4%	55.6%
f. Energy independence	23.6%	30.9%	24.8%	16.9%	29.3%
g. Air pollution (hazardous chemicals)	40.0%	38.4%	38.5%	48.2%	33.3%
h. Air pollution that causes climate change (methane)	35.1%	31.7%	34.3%	42.7%	27.0%
i. Water shortages	20.9%	26.5%	20.0%	26.8%	18.1%
j. Economic growth	33.7%	38.3%	34.8%	24.4%	43.9%
k. Increased truck traffic in areas with fracturing	52.8%	64.1%	50.6%	58.8%	42.7%
l. Declines in tourism	11.2%	13.5%	11.9%	6.2%	12.8%
m. Cheaper energy prices	34.8%	41.8%	36.1%	29.9%	42.0%
n. Harm to people's health	46.9%	43.2%	46.1%	55.6%	41.3%
o. Harm to wildlife	60.6%	63.1%	57.6%	72.8%	57.2%

Table 10 | *Preference for allowing or banning hydraulic fracturing in Maryland*

States are taking different approaches to hydraulic fracturing, or drilling for natural gas. Some states, like Pennsylvania and West Virginia, have allowed the practice, but New York has banned it due to concerns over human and environmental risks. What should Maryland do?	STATE	WESTERN	CENTRAL	SOUTHERN	EASTERN
Ban hydraulic fracturing	28.0%	26.2%	27.5%	27.3%	27.6%
Delay a decision until new studies are conducted on hydraulic fracturing's health and safety	35.0%	25.8%	35.1%	38.8%	27.6%
Allow hydraulic fracturing only if energy companies adhere to high public health and environmental safeguards, even if it causes delays or extra costs	17.2%	25.2%	18.4%	13.0%	23.1%
Allow hydraulic fracturing as soon as possible, but not in state-owned natural areas such as parks and state forests	4.6%	6.5%	4.6%	2.5%	4.9%
Allow hydraulic fracturing as soon as possible, including in state-owned natural areas	3.3%	4.4%	3.3%	2.7%	2.9%
Don't know	12.0%	11.9%	11.1%	15.7%	13.9%
Unweighted n	1525	421	474	292	338

Data tables | Electrical energy fuel preferences

Table 11 | *Residents' preferred sources of electrical energy*

Over the next several years, do you think Maryland should use less, more, or about the same amount of each of these sources of electrical energy? (Please note, no hydraulic fracturing of natural gas is currently occurring in Maryland.)

		STATE	WESTERN	CENTRAL	SOUTHERN	EASTERN
a. Coal	Much less	27.4%	19.2%	28.9%	22.9%	31.8%
	Somewhat less	24.5%	21.2%	24.2%	27.8%	16.3%
	Same amount	21.2%	24.0%	20.3%	18.0%	23.2%
	Somewhat more	4.2%	11.9%	3.2%	4.0%	7.3%
	Much more	3.0%	5.4%	2.3%	3.6%	5.0%
	Don't know	19.7%	18.3%	21.0%	23.6%	16.3%
	Unweighted n	1519	417	476	291	335
b. Petroleum (oil)	Much less	19.7%	13.3%	22.0%	13.6%	20.1%
	Somewhat less	31.5%	38.2%	31.8%	34.1%	26.4%
	Same amount	22.3%	28.2%	19.1%	23.8%	32.5%
	Somewhat more	8.3%	7.1%	9.3%	2.7%	8.0%
	Much more	1.7%	2.0%	1.1%	3.1%	1.8%
	Don't know	16.5%	11.2%	16.8%	22.6%	11.2%
	Unweighted n	1502	414	464	288	336
c. Natural gas extracted by hydraulic fracturing ("fracking") in Maryland	Much less	23.6%	25.9%	23.4%	21.8%	21.3%
	Somewhat less	9.6%	9.9%	9.5%	8.7%	16.0%
	Same amount	16.2%	15.8%	15.9%	12.6%	13.8%
	Somewhat more	14.3%	16.7%	14.9%	17.8%	14.6%
	Much more	8.6%	12.7%	7.6%	8.3%	14.1%
	Don't know	27.6%	18.9%	28.6%	30.8%	20.0%
	Unweighted n	1475	407	458	287	323
d. Other sources of natural gas	Much less	4.6%	3.7%	4.8%	4.3%	5.0%
	Somewhat less	8.8%	7.9%	7.1%	9.9%	20.8%
	Same amount	24.2%	23.2%	22.2%	22.1%	18.7%
	Somewhat more	29.9%	30.0%	34.0%	32.4%	22.2%
	Much more	16.4%	20.1%	14.1%	19.4%	18.7%
	Don't know	16.1%	15.3%	17.8%	11.9%	14.6%
	Unweighted n	1504	408	474	289	333

Continued

Over the next several years, do you think Maryland should use less, more, or about the same amount of each of these sources of electrical energy? (Please note, no hydraulic fracturing of natural gas is currently occurring in Maryland.)

		STATE	WESTERN	CENTRAL	SOUTHERN	EASTERN
e. Wind	Much less	2.3%	2.5%	2.5%	1.7%	1.6%
	Somewhat less	1.7%	1.8%	1.6%	1.7%	2.1%
	Same amount	8.3%	9.9%	7.5%	6.7%	7.4%
	Somewhat more	23.1%	21.9%	22.1%	33.7%	24.0%
	Much more	54.6%	58.9%	53.5%	51.6%	57.6%
	Don't know	10.0%	4.9%	12.7%	4.6%	7.4%
	Unweighted n	1524	420	478	290	336
f. Nuclear	Much less	20.6%	23.3%	21.9%	15.0%	20.6%
	Somewhat less	12.5%	13.5%	10.6%	13.9%	15.9%
	Same amount	22.2%	15.1%	23.0%	22.2%	25.4%
	Somewhat more	8.4%	9.1%	8.8%	7.7%	9.1%
	Much more	12.5%	11.7%	11.5%	16.8%	13.0%
	Don't know	23.8%	27.4%	24.2%	24.5%	15.9%
	Unweighted n	1515	415	477	291	332
g. Solar	Much less	1.5%	1.0%	1.7%	1.1%	1.0%
	Somewhat less	1.1%	1.5%	1.2%	.4%	3.1%
	Same amount	6.4%	4.1%	7.2%	3.3%	10.1%
	Somewhat more	18.6%	20.6%	16.9%	30.3%	11.8%
	Much more	63.3%	69.3%	61.0%	60.6%	66.5%
	Don't know	9.1%	3.6%	12.0%	4.2%	7.5%
	Unweighted n	1517	418	475	293	331
h. Hydroelectric (including dams)	Much less	1.5%	2.2%	1.7%	.8%	2.5%
	Somewhat less	4.3%	4.2%	5.1%	.7%	4.2%
	Same amount	18.3%	22.5%	15.7%	19.2%	22.3%
	Somewhat more	26.4%	23.4%	26.4%	26.4%	19.9%
	Much more	30.1%	34.5%	30.8%	29.3%	35.2%
	Don't know	19.5%	13.2%	20.3%	23.6%	15.8%
	Unweighted n	1515	415	475	291	334
i. Wood fuel	Much less	15.3%	14.3%	16.7%	15.5%	14.1%
	Somewhat less	22.5%	23.3%	20.7%	19.4%	25.7%
	Same amount	26.9%	27.4%	24.8%	31.5%	27.2%
	Somewhat more	7.6%	6.9%	8.2%	7.6%	12.1%
	Much more	5.7%	9.0%	5.6%	1.5%	7.9%
	Don't know	22.0%	19.0%	24.0%	24.4%	13.0%
	Unweighted n	1510	413	474	288	335
j. Geothermal	Much less	1.6%	2.9%	.8%	3.1%	.9%
	Somewhat less	4.4%	4.6%	4.5%	3.7%	6.3%
	Same amount	13.6%	15.7%	12.1%	15.5%	18.5%
	Somewhat more	17.9%	16.4%	15.9%	24.0%	19.2%
	Much more	24.9%	34.0%	25.0%	20.4%	32.5%
	Don't know	37.6%	26.4%	41.6%	33.3%	22.7%
	Unweighted n	1526	417	478	293	338

Over the next several years, do you think Maryland should use less, more, or about the same amount of each of these sources of electrical energy?							
		2013	2014	2015	Δ 2014-2013	Δ 2015-2014	Δ 2015-2013
Coal	Much less	23.5%	27.0%	27.4%	3.5%	0.4%	3.9%
	Somewhat less	20.8%	23.1%	24.5%	2.2%	1.4%	3.7%
	Same amount	19.2%	18.5%	21.2%	-0.7%	2.7%	2.0%
	Somewhat more	8.3%	7.1%	4.2%	-1.1%	-2.9%	-4.1%
	Much more	3.8%	4.6%	3.0%	0.8%	-1.6%	-0.8%
	Don't know	24.5%	19.8%	19.7%	-4.7%	-0.1%	-4.8%
	Unweighted n	2098	1992	1519			
Petroleum (oil)	Much less	22.9%	21.2%	19.7%	-1.8%	-1.5%	-3.2%
	Somewhat less	25.3%	30.3%	31.5%	5.0%	1.2%	6.2%
	Same amount	20.3%	22.5%	22.3%	2.2%	-0.2%	2.0%
	Somewhat more	3.8%	6.0%	8.3%	2.1%	2.3%	4.5%
	Much more	2.7%	3.2%	1.7%	0.6%	-1.5%	-1.0%
	Don't know	24.9%	16.8%	16.5%	-8.1%	-0.3%	-8.4%
	Unweighted n	2086	1976	1502			
Natural gas extracted by hydraulic fracturing ("fracking") in Maryland	Much less	14.2%	21.5%	23.6%	7.3%	2.1%	9.4%
	Somewhat less	9.6%	11.2%	9.6%	1.6%	-1.6%	0.0%
	Same amount	16.3%	16.2%	16.2%	-0.1%	0.0%	-0.1%
	Somewhat more	18.4%	14.8%	14.3%	-3.6%	-0.5%	-4.1%
	Much more	14.5%	13.6%	8.6%	-0.8%	-5.0%	-5.9%
	Don't know	27.0%	22.6%	27.6%	-4.4%	5.0%	0.6%
	Unweighted n	2092	1996	1475			
Other sources of natural gas	Much less	4.4%	5.0%	4.6%	0.6%	-0.4%	0.2%
	Somewhat less	7.0%	7.4%	8.8%	0.4%	1.4%	1.8%
	Same amount	18.8%	19.2%	24.2%	0.4%	5.0%	5.4%
	Somewhat more	25.2%	25.9%	29.9%	0.7%	4.0%	4.7%
	Much more	15.9%	22.6%	16.4%	6.7%	-6.2%	0.5%
	Don't know	28.7%	19.9%	16.1%	-8.8%	-3.8%	-12.6%
	Unweighted n	2073	1975	1504			
Offshore wind (2013, 2014), Wind (2015)	Much less	5.8%	2.9%	2.3%	-2.9%	-0.6%	-3.5%
	Somewhat less	2.0%	2.1%	1.7%	0.1%	-0.4%	-0.3%
	Same amount	7.1%	8.2%	8.3%	1.1%	0.1%	1.2%
	Somewhat more	26.1%	21.9%	23.1%	-4.2%	1.2%	-3.0%
	Much more	32.9%	46.8%	54.6%	13.9%	7.8%	21.7%
	Don't know	26.0%	18.0%	10.0%	-8.0%	-8.0%	-16.0%
	Unweighted n	2082	1987	1524			
Land-based wind (2013, 2014); wind (2015)	Much less	5.9%	2.5%	2.3%	-3.3%	-0.2%	-3.6%
	Somewhat less	2.4%	2.4%	1.7%	0.0%	-0.7%	-0.7%
	Same amount	7.9%	9.3%	8.3%	1.4%	-1.0%	0.4%
	Somewhat more	25.6%	21.5%	23.1%	-4.1%	1.6%	-2.5%
	Much more	35.9%	47.2%	54.6%	11.3%	7.4%	18.7%
	Don't know	22.4%	17.1%	10.0%	-5.3%	-7.1%	-12.4%
	Unweighted n	2084	1987	1524			
Nuclear	Much less	19.3%	19.6%	20.6%	0.3%	1.0%	1.3%
	Somewhat less	12.0%	12.7%	12.5%	0.7%	-0.2%	0.5%
	Same amount	16.2%	21.2%	22.2%	5.0%	1.0%	6.0%
	Somewhat more	11.1%	11.8%	8.4%	0.7%	-3.4%	-2.7%
	Much more	9.5%	11.7%	12.5%	2.2%	0.8%	3.0%
	Don't know	31.9%	23.1%	23.8%	-8.8%	0.7%	-8.1%
	Unweighted n	2054	1975	1515			
Solar	Much less	2.7%	1.8%	1.5%	-0.9%	-0.3%	-1.2%
	Somewhat less	1.2%	0.8%	1.1%	-0.4%	0.3%	-0.1%
	Same amount	7.3%	6.3%	6.4%	-1.1%	0.1%	-0.9%
	Somewhat more	21.8%	14.8%	18.6%	-7.0%	3.8%	-3.2%
	Much more	47.1%	62.7%	63.3%	15.6%	0.6%	16.2%
	Don't know	19.9%	13.6%	9.1%	-6.3%	-4.5%	-10.8%
	Unweighted n	2095	1995	1517			

Continued

Over the next several years, do you think Maryland should use less, more, or about the same amount of each of these sources of electrical energy?

		2013	2014	2015	Δ 2014-2013	Δ 2015-2014	Δ 2015-2013
Hydroelectric (including dams)	Much less	3.0%	2.4%	1.5%	-0.6%	-0.9%	-1.5%
	Somewhat less	2.6%	3.3%	4.3%	0.7%	1.0%	1.7%
	Same amount	19.4%	20.0%	18.3%	0.6%	-1.7%	-1.1%
	Somewhat more	20.8%	20.9%	26.4%	0.1%	5.5%	5.6%
	Much more	28.1%	31.8%	30.1%	3.7%	-1.7%	2.0%
	Don't know	26.0%	21.6%	19.5%	-4.5%	-2.1%	-6.5%
	Unweighted n	2088	1980	1515			
Wood fuel or switchgrass (2013, 2014); wood fuel (2015)	Much less	16.4%	12.2%	15.3%	-4.2%	3.1%	-1.1%
	Somewhat less	10.3%	12.9%	22.5%	2.6%	9.6%	12.2%
	Same amount	18.2%	20.6%	26.9%	2.5%	6.3%	8.7%
	Somewhat more	7.6%	9.8%	7.6%	2.2%	-2.2%	0.0%
	Much more	5.4%	10.4%	5.7%	5.0%	-4.7%	0.3%
	Don't know	42.2%	34.1%	22.0%	-8.1%	-12.1%	-20.2%
	Unweighted n	2100	1994	1510			

Data tables | Source and cost of electrical energy

Tables 12-13 | *Residents' beliefs about the sources of their electrical energy*

Which do you think is the largest fuel source used to generate Maryland's electrical energy?

	STATE	WESTERN	CENTRAL	SOUTHERN	EASTERN
Nuclear	8.6%	5.3%	7.1%	14.5%	11.2%
Oil	13.8%	13.2%	13.4%	15.0%	17.3%
Wind	0.7%	0.6%	0.6%	0.0%	1.7%
Natural gas	20.5%	23.3%	21.8%	12.5%	18.1%
Coal	18.6%	32.0%	17.1%	18.0%	19.4%
Hydroelectric	6.0%	3.5%	5.4%	5.8%	7.6%
Don't know	31.8%	22.1%	34.6%	34.3%	24.8%
Unweighted n	1529	421	477	294	337

Which do you think is the second largest fuel source used to generate Maryland's electrical energy?

	STATE	WESTERN	CENTRAL	SOUTHERN	EASTERN
Nuclear	11.2%	8.3%	10.3%	13.0%	9.0%
Oil	17.6%	15.8%	16.1%	19.4%	20.0%
Wind	1.0%	2.5%	.9%	.1%	2.6%
Natural gas	20.9%	23.4%	22.7%	19.4%	16.0%
Coal	8.6%	10.6%	6.9%	8.3%	10.6%
Hydroelectric	7.1%	12.6%	8.0%	3.1%	12.7%
Don't know	33.5%	26.8%	35.1%	36.7%	29.1%
Unweighted n	1532	421	478	295	338

Table 14 | *Residents' beliefs about the cost of electrical energy generation from differing fuels*

How expensive do you think it is to produce electricity from each of the following fuels?

		STATE	WESTERN	CENTRAL	SOUTHERN	EASTERN
a. Coal	Very cheap	14.2%	12.5%	15.1%	18.6%	11.0%
	Somewhat cheap	28.9%	30.5%	32.8%	20.5%	23.0%
	Moderately priced	34.2%	30.8%	33.2%	32.9%	39.4%
	Somewhat expensive	16.8%	19.1%	14.3%	22.7%	15.7%
	Very expensive	6.0%	7.1%	4.5%	5.3%	10.8%
	Unweighted n	1484	410	457	286	331
b. Natural gas	Very cheap	4.4%	3.5%	4.0%	4.5%	3.5%
	Somewhat cheap	21.8%	19.1%	27.0%	14.8%	23.1%
	Moderately priced	40.3%	40.4%	41.0%	45.6%	39.9%
	Somewhat expensive	22.7%	29.1%	19.4%	19.6%	17.7%
	Very expensive	10.9%	8.0%	8.7%	15.6%	15.8%
	Unweighted n	1485	410	456	287	332
c. Wind	Very cheap	24.9%	21.8%	26.4%	21.5%	20.6%
	Somewhat cheap	20.6%	27.1%	15.1%	35.2%	23.5%
	Moderately priced	25.6%	23.7%	27.6%	17.7%	23.2%
	Somewhat expensive	22.7%	19.8%	24.8%	21.1%	22.4%
	Very expensive	6.1%	7.6%	6.0%	4.4%	10.3%
	Unweighted n	1488	410	457	288	333
d. Nuclear	Very cheap	4.8%	1.8%	4.2%	7.8%	3.8%
	Somewhat cheap	9.9%	10.4%	10.6%	9.5%	9.3%
	Moderately priced	23.0%	24.7%	24.6%	16.6%	29.0%
	Somewhat expensive	32.7%	34.3%	32.5%	27.4%	30.4%
	Very expensive	29.7%	28.7%	28.1%	38.7%	27.5%
	Unweighted n	1466	404	452	285	325
e. Solar	Very cheap	21.9%	24.5%	21.7%	19.7%	20.0%
	Somewhat cheap	17.4%	19.5%	14.6%	21.0%	25.4%
	Moderately priced	22.8%	16.1%	23.7%	30.8%	14.9%
	Somewhat expensive	26.4%	27.8%	27.1%	22.8%	20.3%
	Very expensive	11.5%	12.1%	12.9%	5.8%	19.4%
	Unweighted n	1490	411	457	289	333

Data tables | Willingness and ability to pay for electricity from different fuel sources

Table 15 | *Willingness to pay for electricity from different fuel sources*

How much more would you be willing to pay each month on your electricity bill to purchase 100% of your electricity from these fuel sources?

		STATE	WESTERN	CENTRAL	SOUTHERN	EASTERN
a. Coal	Not willing to pay more for this fuel	79.9%	81.7%	81.0%	82.2%	75.9%
	$1-5	10.6%	12.3%	10.4%	10.6%	19.3%
	$6-10	3.6%	2.9%	3.1%	4.8%	3.5%
	$11-15	2.0%	1.0%	1.6%	1.5%	1.0%
	$16-20	2.9%	1.3%	2.9%	.5%	.1%
	More than $20 a month	.9%	.9%	1.1%	.4%	.2%
	Unweighted n	1488	412	460	289	327
b. Natural gas	Not willing to pay more for this fuel	58.4%	62.0%	58.8%	64.0%	55.5%
	$1-5	21.6%	21.3%	21.4%	19.2%	27.9%
	$6-10	9.7%	9.6%	9.1%	9.4%	11.8%
	$11-15	3.9%	1.7%	3.4%	4.6%	2.9%
	$16-20	3.8%	2.6%	4.1%	.7%	.9%
	More than $20 a month	2.6%	2.8%	3.2%	2.1%	.9%
	Unweighted n	1476	411	455	286	324
c. Wind	Not willing to pay more for this fuel	33.3%	37.2%	33.8%	32.8%	34.8%
	$1-5	21.4%	26.1%	19.4%	28.4%	22.7%
	$6-10	21.2%	14.2%	22.6%	19.2%	15.6%
	$11-15	7.9%	8.4%	7.0%	8.8%	10.4%
	$16-20	8.7%	5.1%	8.9%	6.0%	7.9%
	More than $20 a month	7.5%	8.9%	8.3%	4.8%	8.6%
	Unweighted n	1499	412	464	293	330
d. Nuclear	Not willing to pay more for this fuel	68.4%	71.9%	68.8%	65.6%	65.2%
	$1-5	14.1%	14.1%	14.9%	12.2%	19.4%
	$6-10	11.0%	7.3%	10.7%	14.8%	8.2%
	$11-15	2.7%	3.9%	1.9%	3.3%	5.1%
	$16-20	1.4%	1.3%	.8%	1.9%	1.5%
	More than $20 a month	2.5%	1.5%	2.8%	2.3%	.7%
	Unweighted n	1467	404	456	285	322
e. Solar	Not willing to pay more for this fuel	32.0%	36.0%	31.9%	32.7%	34.0%
	$1-5	19.8%	24.9%	18.9%	24.2%	17.3%
	$6-10	18.3%	12.7%	20.3%	17.3%	13.1%
	$11-15	9.8%	9.2%	8.2%	11.4%	12.5%
	$16-20	11.3%	7.6%	10.9%	8.3%	13.5%
	More than $20 a month	8.9%	9.6%	9.8%	6.0%	9.6%
	Unweighted n	1497	413	462	292	330

Table 16 | *Experienced difficulties in paying electricity bills*

Have you experienced financial difficulty in paying your electricity bills at any time over the last five years?

	STATE	WESTERN	CENTRAL	SOUTHERN	EASTERN
Yes	36.8%	36.2%	36.1%	38.5%	53.8%
No	58.9%	62.5%	60.8%	55.1%	45.3%
Not applicable	4.3%	1.3%	3.1%	6.4%	.9%
Unweighted n	1508	418	472	288	330

Data tables | Energy efficiency and conservation behaviors and motivation
Table 17 | *Household energy efficiency and conservation actions*

For each of the following actions, please answer two questions. Have you taken any of the following actions? (Yes or no)		STATE	WESTERN	CENTRAL	SOUTHERN	EASTERN
a. Upgrade home insulation and ventilation	Yes	33.4%	41.9%	31.0%	42.0%	34.6%
	No	66.6%	58.1%	69.0%	58.0%	65.4%
	Unweighted n	1470	403	457	287	323
b. Install efficient home heating/cooling systems(s)	Yes	35.4%	32.8%	35.5%	31.0%	37.7%
	No	64.6%	67.2%	64.5%	69.0%	62.3%
	Unweighted n	1464	401	458	283	322
c. Install efficient light bulbs	Yes	86.4%	90.7%	84.2%	88.4%	86.9%
	No	13.6%	9.3%	15.8%	11.6%	13.1%
	Unweighted n	1476	406	462	283	325
d. Seal air leaks in your home	Yes	53.0%	61.6%	49.8%	55.2%	54.7%
	No	47.0%	38.4%	50.2%	44.8%	45.3%
	Unweighted n	1454	402	455	281	316
e. Buy efficient home appliances	Yes	61.3%	73.3%	53.2%	78.3%	60.0%
	No	38.7%	26.7%	46.8%	21.7%	40.0%
	Unweighted n	1460	402	459	280	319
f. Conduct a home energy audit	Yes	14.9%	22.1%	13.6%	12.7%	12.3%
	No	85.1%	77.9%	86.4%	87.3%	87.7%
	Unweighted n	1462	402	458	283	319
g. Install a programmable thermostat	Yes	50.8%	39.2%	53.5%	57.9%	36.8%
	No	49.2%	60.8%	46.5%	42.1%	63.2%
	Unweighted n	1467	402	462	281	322
h. Purchase a fuel-efficient car	Yes	31.4%	26.6%	31.3%	28.0%	31.7%
	No	68.6%	73.4%	68.7%	72.0%	68.3%
	Unweighted n	1462	399	460	280	323

Table 18 | *Motivations for single-action household energy efficiency and conservation actions*

If so, please circle whether the reason you did it was more for the cost savings ($), for environmental reasons, or for some other reason?

		STATE	WESTERN	CENTRAL	SOUTHERN	EASTERN
a. Upgrade home insulation and ventilation	Entirely $ reasons	24.0%	25.2%	27.2%	16.3%	29.0%
	Mostly $ reasons	22.4%	25.5%	22.5%	16.7%	23.7%
	Equally $ and environmental reasons	27.6%	20.5%	28.4%	40.3%	16.8%
	Mostly environmental reasons	3.9%	12.3%	3.4%	1.4%	7.1%
	Entirely environmental reasons	1.6%	1.1%	1.4%	1.4%	1.2%
	Other reason	20.5%	15.3%	17.1%	23.9%	22.2%
	Unweighted n	793	208	239	162	184
b. Install efficient home heating/cooling systems(s)	Entirely $ reasons	24.6%	29.1%	25.3%	30.6%	17.8%
	Mostly $ reasons	22.0%	23.3%	20.6%	20.0%	27.4%
	Equally $ and environmental reasons	24.1%	22.2%	26.4%	22.3%	19.3%
	Mostly environmental reasons	5.5%	1.3%	6.4%	2.6%	3.4%
	Entirely environmental reasons	.5%	1.6%	0.0%	.3%	1.5%
	Other reason	23.4%	22.4%	21.3%	24.1%	30.5%
	Unweighted n	869	220	256	184	209
c. Install efficient light bulbs	Entirely $ reasons	23.0%	23.7%	23.0%	26.7%	24.3%
	Mostly $ reasons	22.7%	21.0%	22.7%	17.8%	17.7%
	Equally $ and environmental reasons	33.7%	35.0%	32.4%	39.4%	34.2%
	Mostly environmental reasons	7.8%	8.4%	8.0%	6.1%	10.0%
	Entirely environmental reasons	5.3%	2.7%	5.6%	4.4%	8.1%
	Other reason	7.4%	9.2%	8.3%	5.5%	5.7%
	Unweighted n	1318	365	404	263	286
d. Seal air leaks in your home	Entirely $ reasons	33.0%	38.4%	30.5%	37.6%	32.8%
	Mostly $ reasons	21.8%	26.5%	22.9%	16.0%	27.2%
	Equally $ and environmental reasons	27.4%	23.5%	27.5%	30.3%	21.7%
	Mostly environmental reasons	3.7%	2.9%	3.6%	2.8%	.7%
	Entirely environmental reasons	1.7%	1.3%	1.8%	.8%	4.7%
	Other reason	12.4%	7.5%	13.7%	12.4%	12.9%
	Unweighted n	949	265	278	186	220

Continued

If so, please circle whether the reason you did it was more for the cost savings ($), for environmental reasons, or for some other reason?

		STATE	WESTERN	CENTRAL	SOUTHERN	EASTERN
a. Upgrade home insulation and ventilation	Entirely $ reasons	24.0%	25.2%	27.2%	16.3%	29.0%
	Mostly $ reasons	22.4%	25.5%	22.5%	16.7%	23.7%
	Equally $ and environmental reasons	27.6%	20.5%	28.4%	40.3%	16.8%
	Mostly environmental reasons	3.9%	12.3%	3.4%	1.4%	7.1%
	Entirely environmental reasons	1.6%	1.1%	1.4%	1.4%	1.2%
	Other reason	20.5%	15.3%	17.1%	23.9%	22.2%
	Unweighted n	793	208	239	162	184
b. Install efficient home heating/cooling systems(s)	Entirely $ reasons	24.6%	29.1%	25.3%	30.6%	17.8%
	Mostly $ reasons	22.0%	23.3%	20.6%	20.0%	27.4%
	Equally $ and environmental reasons	24.1%	22.2%	26.4%	22.3%	19.3%
	Mostly environmental reasons	5.5%	1.3%	6.4%	2.6%	3.4%
	Entirely environmental reasons	.5%	1.6%	0.0%	.3%	1.5%
	Other reason	23.4%	22.4%	21.3%	24.1%	30.5%
	Unweighted n	869	220	256	184	209
c. Install efficient light bulbs	Entirely $ reasons	23.0%	23.7%	23.0%	26.7%	24.3%
	Mostly $ reasons	22.7%	21.0%	22.7%	17.8%	17.7%
	Equally $ and environmental reasons	33.7%	35.0%	32.4%	39.4%	34.2%
	Mostly environmental reasons	7.8%	8.4%	8.0%	6.1%	10.0%
	Entirely environmental reasons	5.3%	2.7%	5.6%	4.4%	8.1%
	Other reason	7.4%	9.2%	8.3%	5.5%	5.7%
	Unweighted n	1318	365	404	263	286
d. Seal air leaks in your home	Entirely $ reasons	33.0%	38.4%	30.5%	37.6%	32.8%
	Mostly $ reasons	21.8%	26.5%	22.9%	16.0%	27.2%
	Equally $ and environmental reasons	27.4%	23.5%	27.5%	30.3%	21.7%
	Mostly environmental reasons	3.7%	2.9%	3.6%	2.8%	.7%
	Entirely environmental reasons	1.7%	1.3%	1.8%	.8%	4.7%
	Other reason	12.4%	7.5%	13.7%	12.4%	12.9%
	Unweighted n	949	265	278	186	220
e. Buy efficient home appliances	Entirely $ reasons	26.3%	24.4%	27.1%	27.4%	22.4%
	Mostly $ reasons	22.6%	21.9%	24.0%	26.9%	20.9%
	Equally $ and environmental reasons	33.3%	34.0%	31.4%	30.3%	36.6%
	Mostly environmental reasons	5.8%	12.3%	7.0%	2.4%	5.1%
	Entirely environmental reasons	2.1%	1.6%	1.8%	2.1%	2.2%
	Other reason	9.9%	5.8%	8.6%	10.9%	12.8%
	Unweighted n	1136	314	343	237	242

Table 19 | *Habitual energy efficiency and conservation behaviors*

For each of the following behaviors, please answer two questions: Do you do the following most of the time? (Yes or no)

		STATE	WESTERN	CENTRAL	SOUTHERN	EASTERN
a. Recycle	Yes	82.2%	78.5%	82.8%	85.0%	66.5%
	No	17.8%	21.5%	17.2%	15.0%	33.5%
	Unweighted n	1480	403	463	286	328
b. Set the thermostat down in winter and up in summer	Yes	83.8%	68.0%	84.6%	87.6%	80.1%
	No	16.2%	32.0%	15.4%	12.4%	19.9%
	Unweighted n	1465	405	455	282	323
c. Take public transportation	Yes	21.5%	4.4%	28.3%	16.7%	9.4%
	No	78.5%	95.6%	71.7%	83.3%	90.6%
	Unweighted n	1475	405	460	283	327
d. Turn off lights	Yes	98.3%	97.3%	98.0%	99.2%	97.5%
	No	1.7%	2.7%	2.0%	.8%	2.5%
	Unweighted n	1490	410	465	283	332
e. Walk or bike instead of driving	Yes	30.6%	19.5%	38.3%	21.0%	27.2%
	No	69.4%	80.5%	61.7%	79.0%	72.8%
	Unweighted n	1469	406	456	281	326

Table 20 | *Motivations for habitual energy efficiency and conservation behaviors*

If so, please circle whether the reason you do it is more for the cost savings ($), for environmental reasons, or some other reason?						
		STATE	**WESTERN**	**CENTRAL**	**SOUTHERN**	**EASTERN**
a. Recycle	Entirely $ reasons	3.5%	4.9%	4.3%	.2%	4.3%
	Mostly $ reasons	2.2%	2.3%	1.9%	1.5%	2.3%
	Equally $ and environmental reasons	10.0%	12.4%	9.2%	10.7%	16.0%
	Mostly environmental reasons	19.2%	27.4%	19.0%	13.5%	24.5%
	Entirely environmental reasons	56.2%	42.8%	57.2%	65.0%	41.4%
	Other reason	8.8%	10.1%	8.3%	9.2%	11.4%
	Unweighted n	1317	361	424	268	264
b. Set the thermostat down in winter and up in summer	Entirely $ reasons	31.3%	29.1%	31.3%	35.1%	38.9%
	Mostly $ reasons	28.5%	23.2%	26.6%	37.0%	23.4%
	Equally $ and environmental reasons	29.9%	31.1%	31.8%	20.3%	30.4%
	Mostly environmental reasons	2.5%	5.5%	2.7%	1.2%	2.3%
	Entirely environmental reasons	3.6%	1.5%	4.9%	1.4%	1.5%
	Other reason	4.2%	9.6%	2.6%	5.1%	3.4%
	Unweighted n	1334	358	415	276	285
c. Take public transportation	Entirely $ reasons	9.5%	4.8%	10.8%	7.9%	10.7%
	Mostly $ reasons	19.0%	9.7%	19.5%	18.3%	14.3%
	Equally $ and environmental reasons	15.2%	9.2%	18.0%	9.7%	7.0%
	Mostly environmental reasons	2.5%	2.7%	2.7%	1.3%	5.9%
	Entirely environmental reasons	2.6%	1.7%	3.1%	1.5%	0.0%
	Other reason	51.3%	72.0%	45.9%	61.2%	62.2%
	Unweighted n	615	145	200	140	130
d. Turn off lights	Entirely $ reasons	34.2%	39.6%	33.4%	43.2%	36.3%
	Mostly $ reasons	25.7%	27.5%	24.6%	24.9%	20.3%
	Equally $ and environmental reasons	28.7%	25.7%	29.6%	24.5%	32.6%
	Mostly environmental reasons	2.6%	3.9%	2.2%	1.2%	3.5%
	Entirely environmental reasons	5.6%	1.6%	6.7%	3.5%	2.9%
	Other reason	3.3%	1.7%	3.5%	2.6%	4.5%
	Unweighted n	1443	398	452	277	316
e. Walk or bike instead of driving	Entirely $ reasons	7.1%	12.2%	8.4%	5.9%	7.7%
	Mostly $ reasons	11.3%	4.9%	13.0%	4.6%	4.3%
	Equally $ and environmental reasons	17.0%	18.7%	19.9%	9.4%	27.3%
	Mostly environmental reasons	6.5%	7.4%	5.8%	12.3%	11.4%
	Entirely environmental reasons	6.7%	3.2%	7.7%	2.2%	2.5%
	Other reason	51.3%	53.7%	45.2%	65.7%	46.8%
	Unweighted n	717	184	223	148	162

Data tables | Sample demographics

Region

		STATE unweighted sample n	STATE weighted %
	Western Region	424	8.4%
	Central Region	484	55.3%
	Southern Region	297	30.3%
	Eastern Region	342	6.0%
	Total	1547	

Gender

		STATE unweighted sample n	STATE weighted n	WESTERN weighted n	CENTRAL weighted n	SOUTHERN weighted n	EASTERN weighted n
Are you: (Check ONE)	Male	589	48.0%	50.3%	48.0%	48.7%	48.6%
	Female	958	52.0%	49.7%	52.0%	51.3%	51.4%
	Unweighted n	1547	1547	424	484	297	342

Age

		STATE unweighted sample n	STATE weighted n	WESTERN weighted n	CENTRAL weighted n	SOUTHERN weighted n	EASTERN weighted n
	18-24	30	12.5%	12.2%	11.9%	13.4%	14.1%
	25-34	145	17.6%	15.7%	18.0%	18.3%	13.8%
	35-44	201	17.1%	16.9%	17.0%	17.8%	14.1%
	45-54	297	19.7%	19.8%	19.5%	20.2%	18.2%
	55-64	380	16.2%	16.3%	16.4%	15.7%	17.3%
	65-74	295	9.5%	10.4%	9.3%	8.9%	12.7%
	75-84	136	5.1%	6.1%	5.2%	4.0%	6.9%
	85+	63	2.3%	2.6%	2.6%	1.6%	2.9%
	Unweighted n	1547	1547	424	484	297	342

Education

		STATE unweighted sample n	STATE weighted n	WESTERN weighted n	CENTRAL weighted n	SOUTHERN weighted n	EASTERN weighted n
What is the highest degree or level of school that you have completed?	Less than high school	45	11.0%	10.5%	10.6%	11.5%	13.1%
	High school or GED	272	25.8%	32.7%	23.2%	27.1%	34.2%
	Some college, no degree	290	19.8%	20.6%	18.2%	22.6%	20.1%
	Associate's degree	124	6.3%	7.6%	5.9%	6.6%	6.2%
	Bachelor's degree	406	20.3%	17.0%	21.9%	19.0%	15.7%
	Advanced degree beyond a bachelor's degree	410	16.8%	11.5%	20.3%	13.2%	10.7%
	Unweighted n	1547	1547	424	484	297	342

Number of Children in Household

		STATE unweighted sample n	STATE weighted n	WESTERN weighted n	CENTRAL weighted n	SOUTHERN weighted n	EASTERN weighted n
How many people under 18 years of age are currently living in your household? (Please write #)	0	986	59.5%	53.9%	62.3%	52.0%	65.6%
	1	208	20.0%	23.5%	15.4%	35.9%	18.2%
	2	167	13.4%	15.2%	16.0%	8.4%	7.3%
	3	53	5.1%	4.1%	5.0%	2.8%	5.3%
	4	11	1.2%	2.0%	1.3%	0.1%	0.6%
	5	3	0.3%	1.1%	0.0%	0.0%	2.5%
	6	1	0.1%	0.0%	0.0%	0.2%	0.0%
	7	1	0.0%	0.2%	0.0%	0.0%	0.0%
	8	1	0.1%	0.0%	0.0%	0.0%	0.6%
	9	1	0.4%	0.0%	0.0%	0.6%	0.0%
	Unweighted n	1432	1432	392	450	280	310

Personal Annual Household Income

		STATE unweighted sample n	STATE weighted n	WESTERN weighted n	CENTRAL weighted n	SOUTHERN weighted n	EASTERN weighted n
Which of the following broad categories describes your own current approximate annual income before taxes?	Less than $10,000	132	13.1%	22.6%	13.1%	16.4%	12.5%
	$10,000 — $14,999	62	5.0%	4.1%	4.0%	5.7%	14.9%
	$15,000 — $24,999	130	10.7%	11.1%	10.0%	8.6%	11.7%
	$25,000 — $34,999	144	9.2%	11.7%	7.3%	10.4%	13.2%
	$35,000 — $49,999	222	14.3%	17.3%	14.3%	13.2%	14.7%
	$50,000 — $74,999	286	19.0%	15.4%	19.7%	19.4%	14.7%
	$75,000 — $99,999	194	13.0%	7.1%	15.0%	11.7%	8.8%
	$100,000 — $149,999	174	10.1%	6.9%	9.7%	10.9%	5.7%
	$150,000 or more	118	5.6%	4.0%	6.9%	3.9%	3.9%
	Unweighted n	1462	1462	405	453	278	326

Household Annual Household Income

		STATE unweighted sample n	STATE weighted n	WESTERN weighted n	CENTRAL weighted n	SOUTHERN weighted n	EASTERN weighted n
Which of the following broad categories describes your household's total approximate annual income before taxes?	Less than $10,000	49	4.5%	5.0%	5.6%	1.0%	10.5%
	$10,000 — $14,999	52	4.1%	6.9%	4.3%	0.6%	13.7%
	$15,000 — $24,999	84	4.8%	6.0%	3.7%	4.3%	12.9%
	$25,000 — $34,999	107	7.8%	10.7%	8.3%	7.2%	5.2%
	$35,000 — $49,999	148	11.4%	20.2%	10.1%	18.4%	7.6%
	$50,000 — $74,999	238	19.3%	13.4%	17.3%	20.4%	16.3%
	$75,000 — $99,999	225	14.8%	11.4%	16.8%	15.5%	14.9%
	$100,000 — $149,999	277	17.2%	16.5%	16.6%	19.0%	12.6%
	$150,000 or more	268	16.0%	9.9%	17.2%	13.6%	6.2%
	Unweighted n	1448	1448	402	448	279	319

Urban and Rural

		STATE unweighted sample n	STATE weighted n	WESTERN weighted n	CENTRAL weighted n	SOUTHERN weighted n	EASTERN weighted n
How would you describe the area in which you live?	Very rural	185	7.7%	18.4%	5.0%	7.8%	20.6%
	Somewhat rural	503	22.1%	45.4%	15.3%	23.8%	49.2%
	Suburban	593	47.3%	23.3%	48.8%	56.3%	21.7%
	Somewhat urban	171	16.0%	11.8%	20.0%	10.3%	6.1%
	Very urban	78	6.8%	1.0%	10.8%	1.7%	2.4%
	Unweighted n	1530	1530	418	481	293	338

Ethnicity

		STATE unweighted sample n	STATE weighted n	WESTERN weighted n	CENTRAL weighted n	SOUTHERN weighted n	EASTERN weighted n
What ethnicity do you consider yourself?	Hispanic or Latino	39	4.1%	3.6%	4.3%	2.5%	5.4%
	Not Hispanic or Latino	1457	95.9%	96.4%	95.7%	97.5%	94.6%
	Unweighted n	1496	1496	414	467	286	329

Race

		STATE unweighted sample n	STATE weighted n	WESTERN weighted n	CENTRAL weighted n	SOUTHERN weighted n	EASTERN weighted n
What is your race? (Please check ALL THAT APPLY)	White	1204	65.3%	93.4%	63.2%	59.4%	74.9%
	African American or Black	196	19.1%	3.0%	19.3%	23.5%	17.1%
	Asian	55	8.8%	1.0%	12.3%	6.1%	.8%
	American Indian or Alaska Native	4	.3%	.4%	0.0%	.4%	2.5%
	Native Hawaiian or other Pacific Islander	1	.1%	0.0%	.1%	0.0%	0.0%
	Other	35	4.2%	1.8%	2.9%	7.5%	2.9%
	Two or more races	25	2.3%	.5%	2.3%	3.1%	1.9%
	Unweighted n	1520	1520	420	479	289	332

Religious Affiliation

		STATE unweighted sample n	STATE weighted n	WESTERN weighted n	CENTRAL weighted n	SOUTHERN weighted n	EASTERN weighted n
What is your present religion, if any? Are you …	Protestant	490	25.2%	32.4%	23.1%	21.7%	26.4%
	Roman Catholic	346	22.6%	20.8%	24.9%	23.1%	13.2%
	Mormon	5	0.2%	0.5%	0.3%	0.0%	0.1%
	Orthodox, such as Greek or Russian Orthodox	17	0.9%	0.3%	1.2%	0.6%	0.8%
	Jewish	47	3.1%	0.4%	4.5%	1.2%	0.5%
	Muslim	13	2.2%	0.5%	2.8%	1.2%	0.7%
	Buddhist	8	0.3%	0.1%	0.6%	0.1%	0.1%
	Hindu	5	0.4%	0.3%	0.6%	0.0%	0.0%
	Atheist	58	3.5%	3.7%	4.3%	1.2%	4.9%
	Agnostic	92	6.0%	5.2%	6.9%	3.7%	6.5%
	Other	411	35.5%	35.8%	30.8%	47.2%	46.7%
	Unweighted n	1492	1492	414	467	280	331

Political Ideology

		STATE unweighted sample n	STATE weighted n	WESTERN weighted n	CENTRAL weighted n	SOUTHERN weighted n	EASTERN weighted n
Generally speaking, do you think of yourself as politically …	Very conservative	172	10.8%	12.8%	9.7%	10.8%	14.6%
	Somewhat conservative	318	15.8%	21.7%	15.6%	12.3%	19.6%
	Moderate, middle of the road	613	48.8%	48.7%	44.3%	63.2%	43.8%
	Somewhat liberal	298	18.2%	11.0%	22.4%	9.6%	18.9%
	Very liberal	120	6.3%	5.9%	8.0%	4.1%	3.1%
	Unweighted n	1521	1521	417	477	290	337