

Survey Summary: Wyoming Community Perspectives on a Net Zero Carbon Energy Economy

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EXECUTIVE SUMMARY

This study was conducted at the behest of the Department of Energy (DoE), to explore the needs among Wyoming's residents to transition to a net zero carbon energy economy. The information the DoE specifically asked for was as follows:

1. Stakeholder expectations on overall carbon-neutrality goals within Wyoming.
2. Stakeholder needs related to transitioning to carbon-neutrality within Wyoming.
3. Stakeholder concerns related to transitioning to carbon-neutrality within Wyoming.
4. Stakeholder expectations related to transitioning to carbon-neutrality within Wyoming.
5. Which technologies/opportunities stakeholders feel will be more effective in meeting carbon-neutrality within Wyoming.

A survey was conducted among the twelve counties most involved with energy operations: Natrona, Uinta, Lincoln, Sweetwater, Sublette, Carbon, Crook, Converse, Campbell, Sheridan, Fremont, and Park. The survey results were analyzed quantitatively and qualitatively to be able to report results and the reasons for the results.

There are differences between counties in level of support for energy developments of various kinds, but respondents believe energy development generally is very important now (94%) and in the future (94%), with 43% believing it is important for Wyoming to transition to carbon-neutral energy types.

The most important demographic indicator of respondents' preferences regarding energy types were political party affiliation and worldview, with Republican affiliated, more conservative participants preferring fossil fuel and Democratic and Independent affiliated participants preferring carbon neutral energy types.

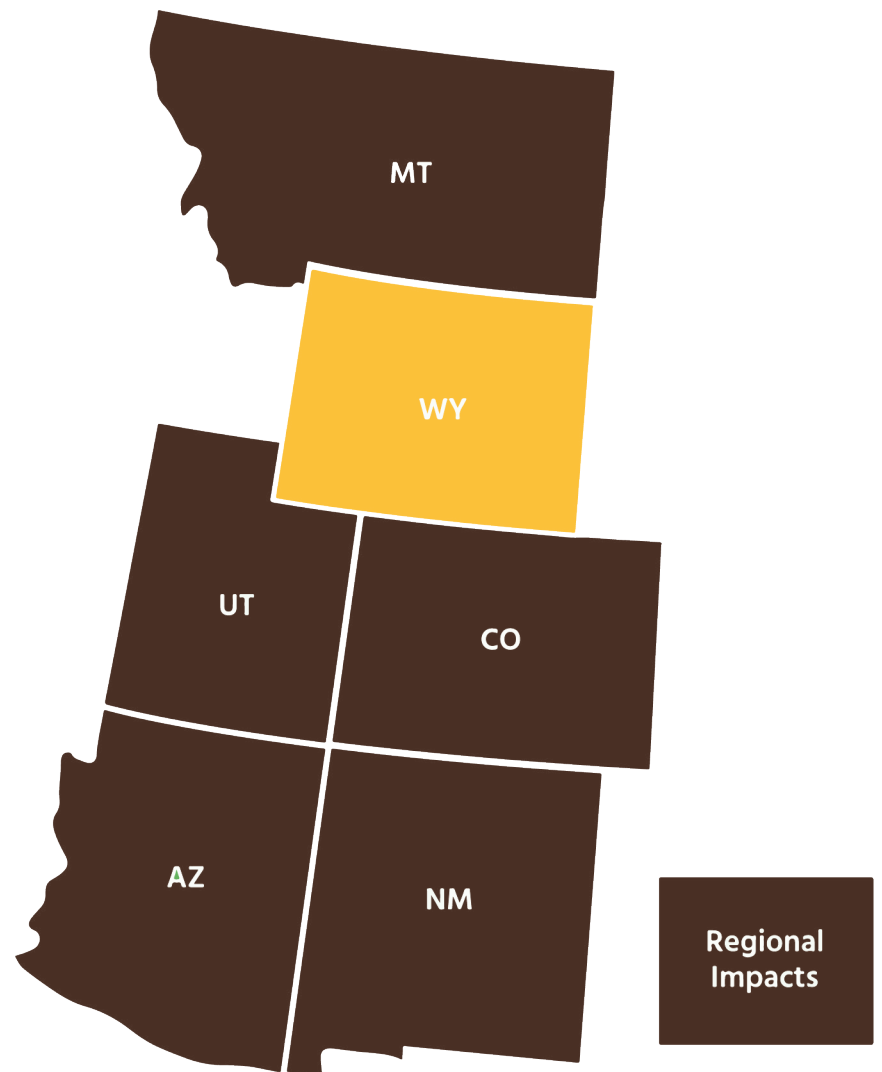
Wind energy, although supported by the majority of respondents, was the carbon neutral energy type with the most amount of opposition. When looking at factors that are important to respondents to consider in relation to transitioning to carbon neutrality, good-paying jobs, education and landscapes and open spaces ranked highest. The qualitative data indicates that one reason for opposition to wind energy is this concern for open spaces and landscapes.

The majority of respondents supported carbon neutral technologies related to carbon capture, utilization and storage (CCUS), wind, nuclear and solar energy. Hydrogen appears to need more explanation to Wyoming residents as 25% were unsure about this. The majority of respondents believe the state is going through an energy transition (73%) and 67% believe this is a long-term development.



About the I-WEST Project

This study was completed as part of the Intermountain West Energy Sustainability and Transitions (I-WEST) project. Beginning in 2021, I-WEST is a collaboration lead by a DOE funded collaboration being led by Los Alamos National Lab and including partners from throughout the intermountain west. Its objective is to develop a roadmap to transition the region to a carbon-neutral energy mix, while ensuring that this transition is sustainable economically, socially, and environmentally in the long term. To achieve this objective, the collaboration’s approach has two parts: 1) widespread stakeholder engagement to understand and include the perspectives, concerns, and goals of the communities and people that will be most affected by this transition, 2) an analysis of the technologies and expertise that will allow us to achieve carbon-neutral energy, in particular including CCUS, hydrogen, and bioenergy.



Section 1

NET ZERO SURVEY METHODOLOGY

Questionnaire Development

The survey instrument for this project was developed by the School of Energy Resources (SER). It was designed to assess the beliefs and preferences of Wyoming residents regarding Wyoming's energy economy and was targeted to energy-dependent counties. Once finalized, the questionnaire was programmed for online survey administration to the WyoSpeaks panel by the Wyoming Survey & Analysis Center (WYSAC).

About WyoSpeaks

The mission of WyoSpeaks is to give voice to Wyoming citizens on important issues facing our state and make public policy more responsive to the opinions of our citizens.

WYSAC's WyoSpeaks survey panel uses probability-based sampling methods to monitor the perspectives of Wyoming citizens through online surveys. WyoSpeaks surveys allow researchers to draw statistically valid inferences about the state as a whole. Over the course of a year, the Wyoming Survey & Analysis Center conducts a number of state-wide telephone surveys where all Wyoming residents have an equal probability of selection. During these surveys, respondents are given the opportunity to join the WyoSpeaks panel of Wyoming citizens. The only way to be added to the WyoSpeaks panel is through this random selection process. WyoSpeaks offers researchers, agencies, and organizations a cost-effective alternative to focus groups and robust telephone and mail surveys with a quick turnaround of statistically valid and reliable results.

Sampling Frame, Sample Design, and Sample Size

The geographic distribution of WyoSpeaks panel members closely resembles the population distribution within the state of Wyoming, so no geographic stratification was necessary when designing the sample draw. At the time of fielding, the WyoSpeaks panel consisted of 1642 active members in the twelve counties of interest: Natrona, Uinta, Lincoln, Sweetwater, Sublette, Carbon, Crook, Converse, Campbell, Sheridan, Fremont, and Park. With a goal of 500-600 completed surveys and an anticipated 30% response rate, the decision was made to survey all panel members within the counties of interest.

Mode of Contact and Mode of Data Collection

For all WyoSpeaks surveys, email is the primary mode of contact for the web survey. For this effort, the initial email invitation was sent on September 16th, 2021. Reminder emails were sent to all sample members who had not yet responded on September 20th, September 23rd, and September 26th. Data collection was closed on September 27th, 2021.

Response Rate and Margin of Error

A total of 678 surveys were completed for a final response rate of 42% when considering only valid email addresses (emails that did not bounce back as undeliverable). In the geography of interest, a sample size of 678 yields a margin of error of roughly ± 3.8 percentage points.

Section II

RESPONDENT DEMOGRAPHICS CHARACTERISTICS

Our respondents' education levels were relatively high, with 78% having earned a bachelor's degree or higher. Income levels were above \$ 70,000 for 69% of our respondents. 52% of our respondents were affiliated with the GOP, 25% were Independent and 16% were affiliated with the Democratic Party. In terms of world views, 51% our respondents identified with a conservative world view, 35% with a moderate world view and 13% with a liberal world view. Women were 49% of our sample and 48% were men. Younger people less than 31 years of age were represented by 4% of our sample, 29% were between 31 and 50, 50% were between 51 and 70, and older than 70 was represented by 13% of our respondents. (See Tables 1-6 in Appendix for details of demographic characteristics)

Section III

ENERGY DEPENDENT COUNTIES' RELATIONSHIPS TO ENERGY

Among Wyoming residents, there is a strong continued belief in the importance of energy industries. This belief was identified in our 2019-2020 study 'Social License for Wyoming's Energy Future'¹ and was confirmed in this Net Zero Energy Survey of Wyoming's energy dependent counties. 94% of our respondents indicated that energy industries were extremely or very important to their communities (Figure 1).

How important are energy industries to your community?

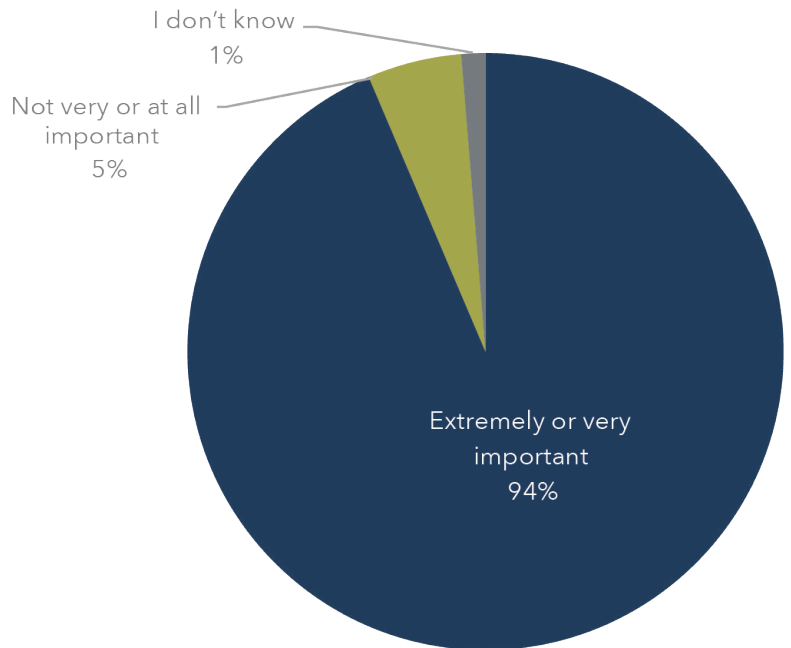


Figure 1: Importance of Energy Industries in Respondents' Communities

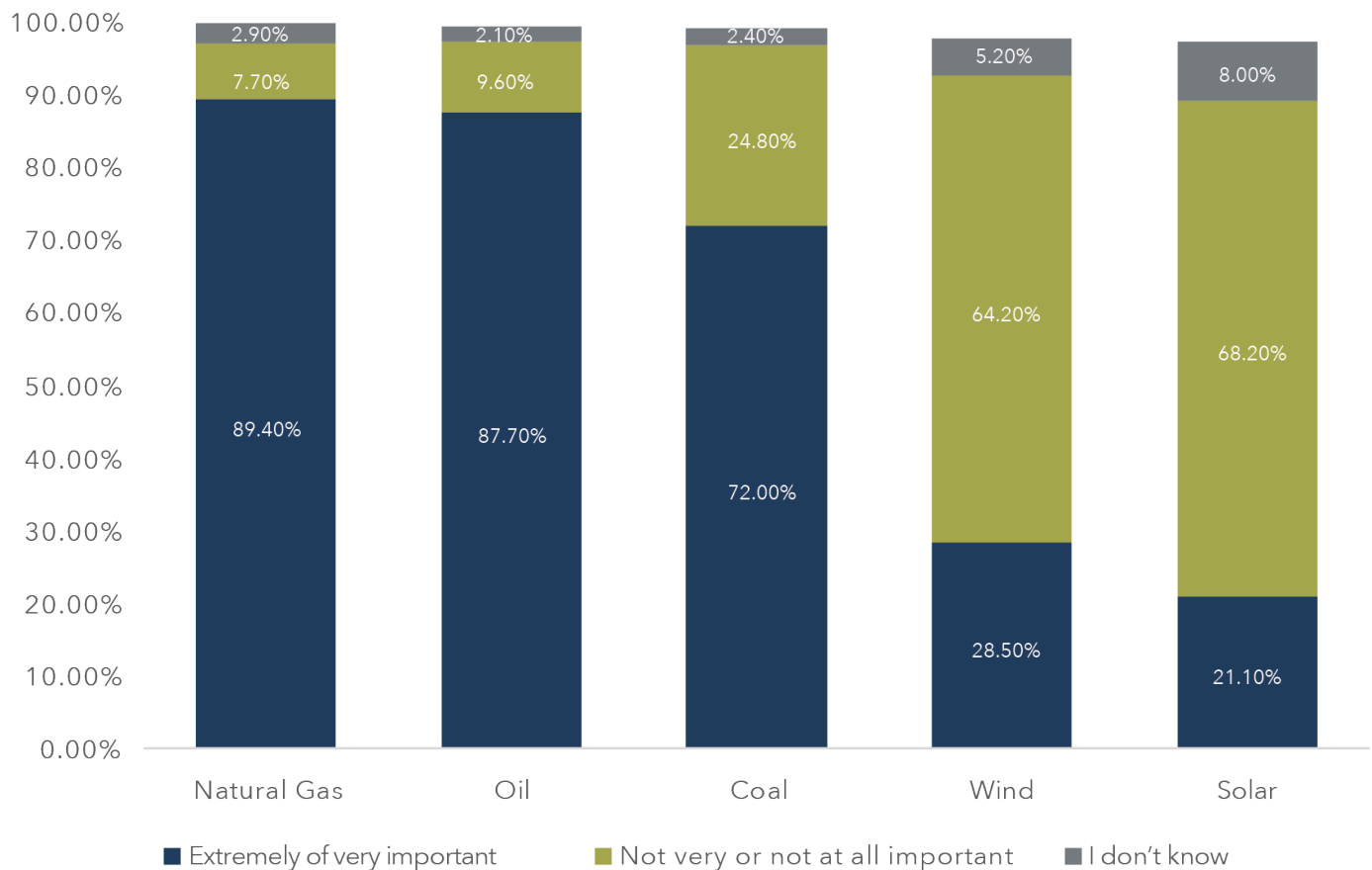
¹ http://www.uwyo.edu/haub/_files/_docs/ruckelshaus/pubs/2020-wyomings-energy-social-license-report.pdf

Specifically, how important respondents believed energy industries were to their communities differed based on demographic variables. Of the ten counties surveyed, respondents in Hot Springs and Albany counties attributed the least amount of importance to energy industries in their counties. Respondents who identified as being affiliated with the Republican party believed energy industries were more important, as did older residents (between the ages of 61-80). Additionally, respondents who had lived in Wyoming longer, also attributed more importance to energy industries in their communities.

When asked about specific energy industries, by far the majority of our respondents answered that fossil fuel related industries (natural gas, oil, and coal) were extremely or very important (Figure 2). There was less certainty regarding the current importance of renewables. There were significant differences in beliefs about the importance of energy industries among participants with different demographic characteristics. Respondents from Campbell, Natrona and Converse counties believed renewables were significantly more important than respondents in other counties. Meanwhile, respondents in Carbon County believed wind and solar were significantly more important than respondents in other counties did. Republicans believed fossil fuel industries were significantly more important than Democrats did, as did those with Conservative and Moderate worldviews over those with Liberal views. Women believed both renewable energy and natural gas were significantly more important than men did.

Figure 2: Importance of Specific Energy Industries in Respondents' Communities

How important are different energy industries to your community currently?



Section IV

ANALYSIS OF SURVEY RESULTS

We have analyzed our survey results to better understand Wyoming stakeholders' expectations, needs, concerns, and perceptions of different carbon-neutral energy technologies and the energy transition (away from fossil fuels and towards carbon-neutral technologies). This discussion is organized into the key topics identified by I-WEST as relevant to developing a carbon-neutral road map. We have also statistically analyzed differences in these beliefs and perceptions associated with different demographic characteristics. In this report, the word "significant" indicates that the difference was at the $p < .05$ level of significance.

Stakeholder expectations on overall carbon-neutrality goals within Wyoming

Wyoming stakeholders are divided when it comes to the importance of achieving carbon-neutrality. It was believed to be extremely or very important by 43% of our respondents, while 52% believed it was not very or at all important (Figure 3). Beliefs about the importance of carbon neutrality differed based on gender and education, with significantly more women and people with 4 or more years of higher education responding that it was more important. Additionally, as we often found, results differed considerably based on political party and world view. Republicans and conservatives responded that carbon-neutrality was less important, while Democrats, Independents, and respondents with moderate and liberal world views responded that it was more important. Interestingly, respondents in the age groups of 18-30 and 61-80 years of age also believed that Wyoming becoming carbon-neutral was more important.

Survey respondents were also divided regarding whether gains could be made by transitioning to carbon neutrality. When asked if there would be any benefits for their communities from this transition, some participants responded that there will either be no gains or would only be drawbacks from transitioning.

How important or not important do you think it is that Wyoming becomes carbon neutral?

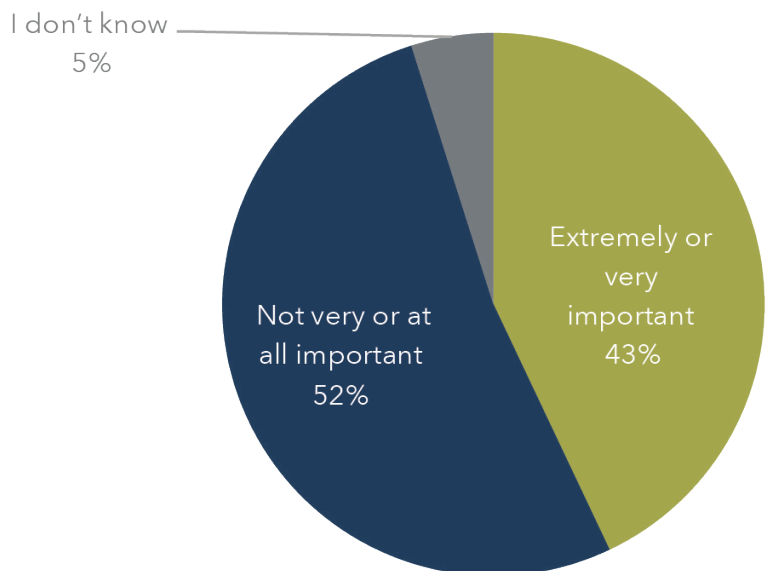


Figure 3: Importance of Wyoming becoming carbon neutral.

One participant expressed concerns that it would create another boom/bust energy cycle and have negative economic impacts in the long term, saying:

“There will be no benefits, it will be yet another boom and bust cycle for Wyoming. It will boom as we build these things then bust when its finished. It will drive our housing costs through the roof, cost of living will sky rocket and soon as the last one is built, they will lay off every worker and hire 1/10 of the people to maintain them. All the while our cost of living remains at an astronomical rate. All of the businesses that are not in the production of these monstrosities will, as usual, not be able to compete with the wages and we will all be sitting here with substandard wages and huge cost of livings.”

However, more participants believe there would be benefits. The benefits participants brought up included a cleaner environment, jobs, and benefits to the economy. One participant cited the positive impact that carbon-neutral energy would have by limiting climate change and creating positive economic impacts, saying:

“Broadly, this will help protect my community against the worst effects of climate change – we’re already having problems with drought and fires, and as the climate crisis worsens, we’ll get caught up in global issues that it creates such as supply chain disruptions More narrowly, this could create local opportunities for industries that don’t rely on being next to major mines etc. to thrive, since to my knowledge, Lander isn’t terribly close to any of the big extraction sites.”

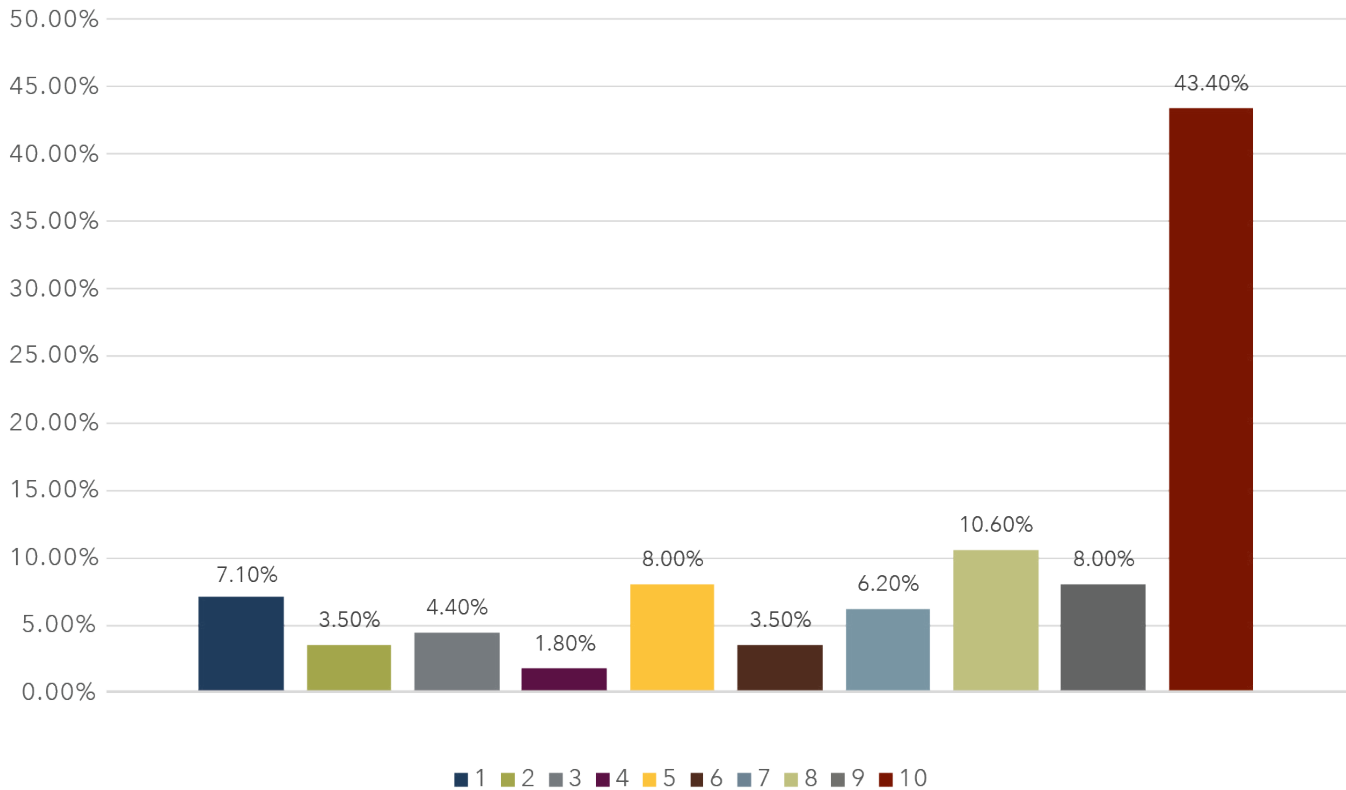
Stakeholder needs related to transitioning to carbon-neutrality within Wyoming

We explored the needs of residents in these counties that are energy dependent regarding retraining needs that might help the transition to a more carbon neutral Wyoming. When asked whether they worked in the energy industry, 16.7% of our respondents answered that they did. When these respondents were asked if they would participate in retraining programs, they overwhelmingly said that they would be willing to if it meant they could stay in their communities. Close to 45% responded that they would be “very willing” to participate in a retraining program (Figure 4).



Figure 4: Willingness to engage in a re-training program.

If you lose your job and wanted to stay in your community, would you be willing to participate in a re-training program if that was available?



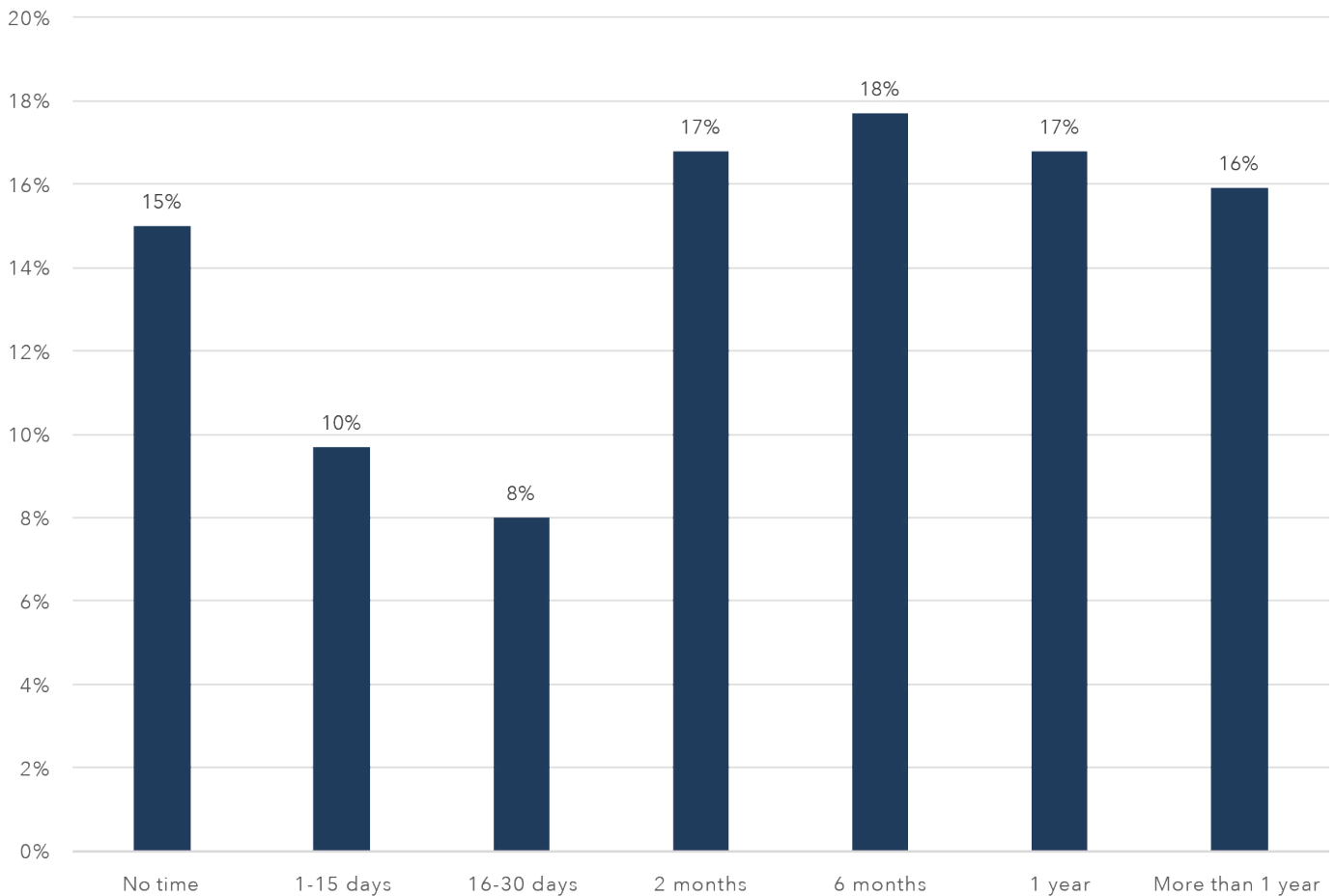
(Figure 4 represents a Likert scale from 1-10 of willingness to participate in re-training programs, with 10 being very willing)

Participants who work in energy industries were divided about how much time they would be willing to spend on retraining (Figure 5). However only 15% said they weren't willing to spend any time while over 50% said they would be willing to spend 6 months to over a year. When exploring any demographic differences related to the length of time participants in the energy industry would be willing to spend on retraining, only gender was significantly different, with men being more willing to take more time to re-train before moving somewhere else to find a job.



Figure 5: Length of time of re-training vs. moving elsewhere

How much time would you be willing to spend on re-training before you decided to move to find a job somewhere else?



When asked what they would need in order to participate in retraining, respondents said their biggest considerations were related to receiving income during re-training and ability to obtain employment after retraining. Many participants said that not having an income was not an option for them and that they needed to be sure they could get a job when they completed the re-training program. One respondent said that when making the decision to enter a retraining program, he would be asking himself,

“Can I afford to live and support my family while retraining and will there be opportunities for me to actually work in my new field.”

Another consideration that came up frequently in participants’ responses was if they were near retirement age. Those who were approaching retirement said they were not interested in re-training at this point in their careers and they planned to try to remain in their current fields until they retired. One respondent said simply,

“Personally I am close to retirement. Not willing to start something new at this point.”

Stakeholder concerns related to transitioning to carbon-neutrality within Wyoming

Wyoming stakeholders' biggest concerns related to transitioning to carbon-neutrality were largely related to jobs, environmental concerns (such as landscapes and open spaces), and social attributes and values (such as outdoor recreation, education, housing, and community values). 78% of respondents said they were extremely or very concerned about the availability of 'stable, well-paying jobs' (Figure 6). This was of significantly more concern to respondents between the ages of 31-70, and of less concern for those younger or older. It was also of greater concern to Republicans and individuals with extreme conservative and conservative views. Notably, respondents in all counties reported that it was of high concern, but respondents who expressed the least concern about availability of jobs were from Sheridan, Johnson, and Fremont counties.

The other attributes that the highest percentage of respondents were extremely or very concerned about included, 'landscapes and open-spaces' (71%), 'quality education' (71%), 'reliable electricity' (68%), 'affordable housing' (68%), 'outdoor recreation' (65%), 'health of ecosystem and biodiversity' (61%), and 'small-town community values' (61%). With many of these concerns, there were significant differences in levels of concern based on demographic characteristics.

Of the environmental-related concerns, landscapes and open spaces were of greater concern for Democrats and Independents, respondents who have lived in Wyoming less than 30 years and for respondents 61 and older. Clean water was also of greater concern to Democrats and Independents. When looking at concerns regarding ecosystems and biodiversity there were no demographic differences--all respondents were similarly concerned regarding the health of Wyoming's ecosystems and biodiversity.

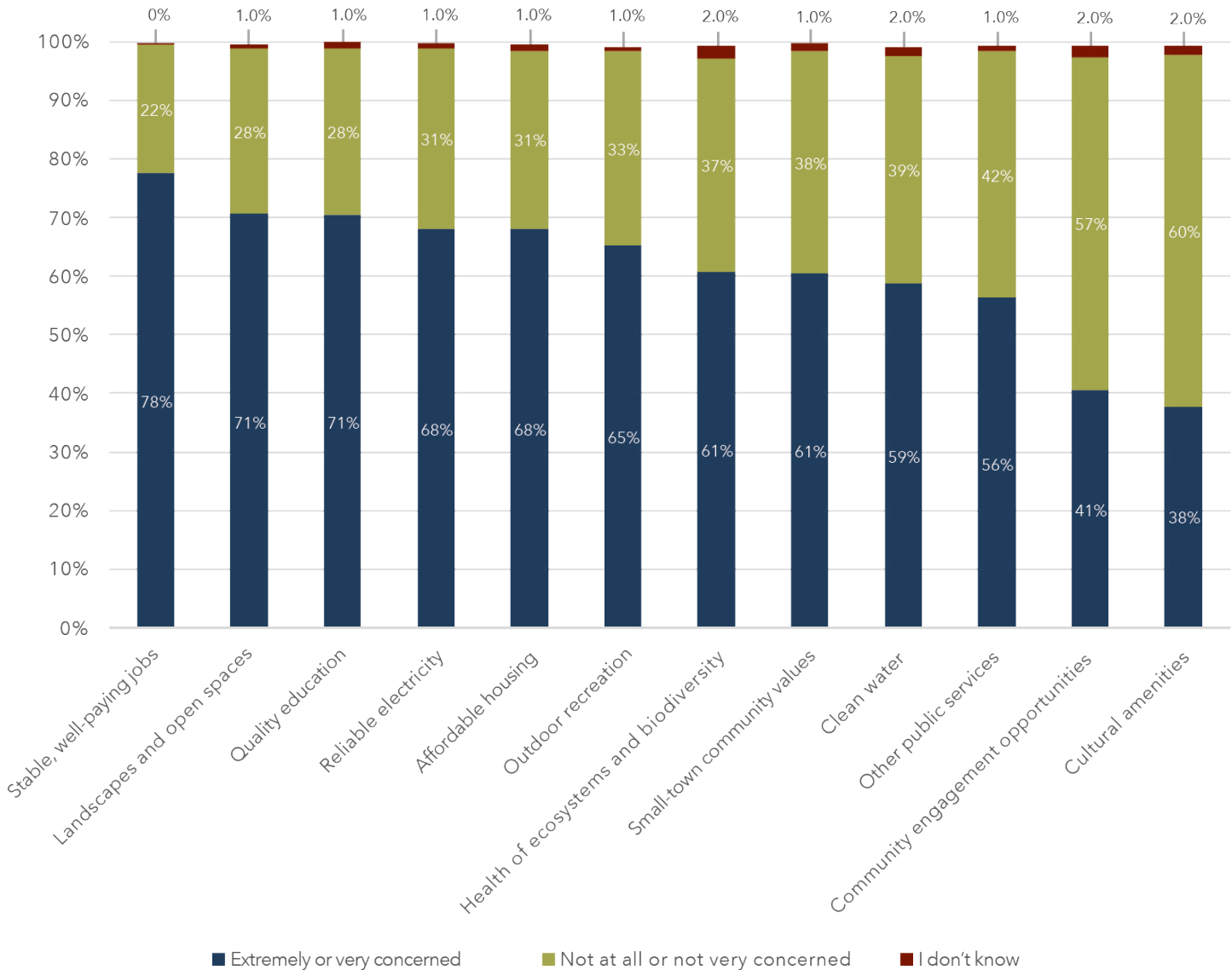
Regarding social attributes, outdoor recreation was of greater concern for respondents over the age of 30, respondents from Campbell and Sheridan counties, and respondents who have resided in Wyoming for less than 30 years. It was also of greater concern for those who had at least some graduate education and for Democrats and Independents. Affordable housing was of greater concern to Republicans and respondents with conservative views, as well as to respondents 41-60 years old. Public services were of greater concern for people with incomes between \$45,000 and \$95,000, and with liberal views. Concerns of losing small town values were shared by respondents who had lived in Wyoming more than 50 years, and those with a 4-year education or more. Community engagement opportunities and cultural amenities were the variables that respondents were the least concerned about, and respondents with liberal worldviews the very least.

There were no significant differences regarding these 12 concerns based on either income or gender.



Figure 6: Percentage of stakeholders concerned with state attributes related to transitioning to carbon-neutrality within Wyoming.

How concerned are you that such a transition may harm any of the following attributes in your community?



When respondents were asked why they were concerned that the transition may harm these attributes, the reasons were largely economic and environmental. One respondent expressed their concerns about the economic impacts of transitioning to carbon neutral energy by saying,

“In my community if oil and coal are discontinued there will no longer be a community. In fact, pretty much most of Wyoming will shut down.”

Another, expressed concerns about negative environmental impacts of wind energy development,

“I am concerned with the push for wind energy in the state as being “green” when the side effects of development are similar to oil. We are putting wind farms in relatively new undisturbed areas, rather than building them in places that have been developed.”

Interestingly, a large number of participants also said they were not concerned that these attributes would be harmed, if the transition is done in a way that encourages investment in new industries and protects the landscapes and ecosystems. Many said they believe the transition will have a positive impact on many of the attributes listed in Figure 6. Indeed, one participant said they think it will be beneficial to Wyoming’s economy and other community services such as education,

“I believe the jobs will transfer and that we as a country are moving towards a higher pay scale. I think this is important for Wyoming because of our open spaces we have the space needed to build the energy infrastructure needed to serve several areas. This will cause an increase in population which will put temporary stress on our infrastructure, but I believe it will lead to better education and better services over all.”

This respondent did express concern about the impact this would have on property prices, saying:

“The downside is this will cause property prices to go up.”

Furthermore, our survey responses revealed that respondents also have strong concerns about carbon neutral technologies themselves. Major concerns included:

- They can’t supply enough or reliable energy
- The technology infrastructure isn’t ready
- They are costly or inefficient
- They aren’t actually carbon-neutral or may have other harmful impacts on the environment

One respondent expressed their concerns about carbon-neutrality by saying that it isn’t economically realistic,

“It’s a pipe dream. The technology is not there or it is too expensive to sustain.” Another said they don’t believe they are economically or environmentally sustainable, and not able to produce enough energy, “I don’t think there is a long-term transition because the wind and solar are not sustainable, and cause more harm to the environment than they help. They will also not produce enough energy to replace our existing energy sources. Long term the wind mills break down and need to much expensive repair - same with solar.”

The other major concern Wyoming stakeholders expressed in the survey was about the need for Wyoming to remain an energy supplier in the next 20-50 years (Figure 7). 94% of participants said that they believe it’s extremely or very likely for Wyoming to continue supplying energy to the region. There was significantly greater belief that it was important among respondents who had less education than a graduate degree, were between 41-60 years of age, and who voted Republican and had a conservative world view.



Similarly to the results in Figure 7 above, 64% of respondents believe that carbon-emitting energy industries need to remain important to Wyoming's energy economy (Figure 8). Residents of Natrona, Campbell, Park, Carbon, Converse, Crook, Lincoln, Sheridan, Sweetwater, and Uinta counties believed that carbon-emitting energy industries were significantly more important than respondents did in other counties. Men believed carbon-related energy types were more important than women, as did respondents between 61-80 years of age. Younger respondents believed carbon-emitting energy industries were much less important for Wyoming, with 57% of respondents between the ages of 18-30 responding that they did not think it was very or at all important.

Figure 7: Importance Wyoming continuing supply energy to the region

How important do you think it is for Wyoming to continue supplying energy to the region in the next 20-50 years?

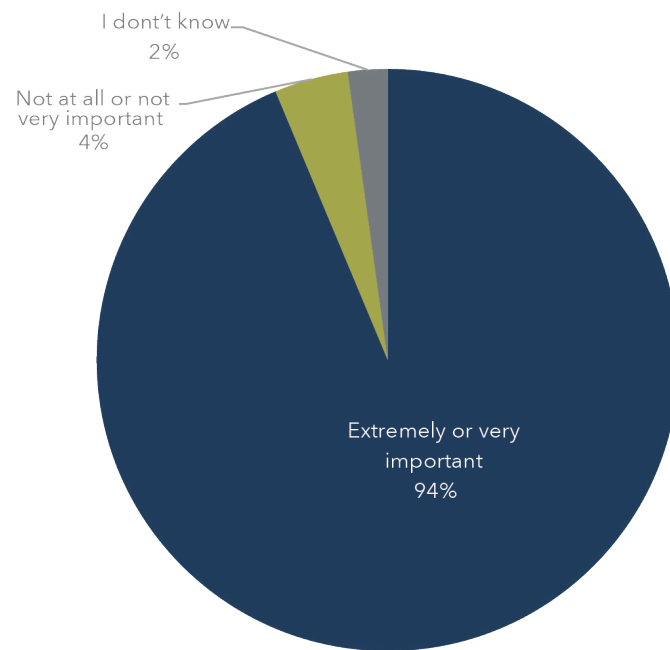
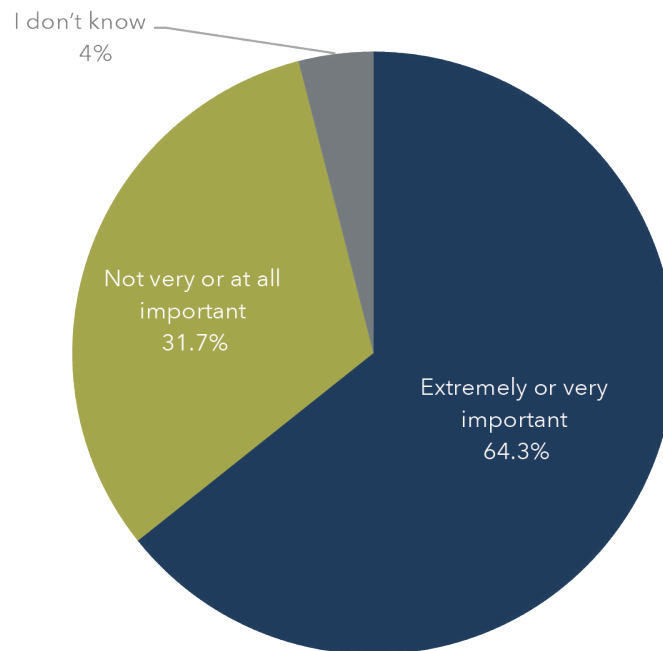


Figure 8: Importance of Wyoming supplying fossil fuel energy in the future.

How important do you want carbon-emitting energy industries to be for Wyoming's economy in the next 20-50 years?



Stakeholder expectations related to transitioning to carbon-neutrality within Wyoming

The majority of our respondents express a belief that the country is going through an energy transition, with 73% of respondents answering that it either is or probably is (Figure 9). Women and respondents over 30 years of age were more likely to agree with this statement than men or respondents under 30 years of age. Of the participants who believed it was unlikely that the country was going through an energy transition, or definitely not, more were Republican or Independent, and were conservative.

Figure 9: Beliefs on whether or not the country is going through an energy transition

In your opinion, is the country going through an energy transition?

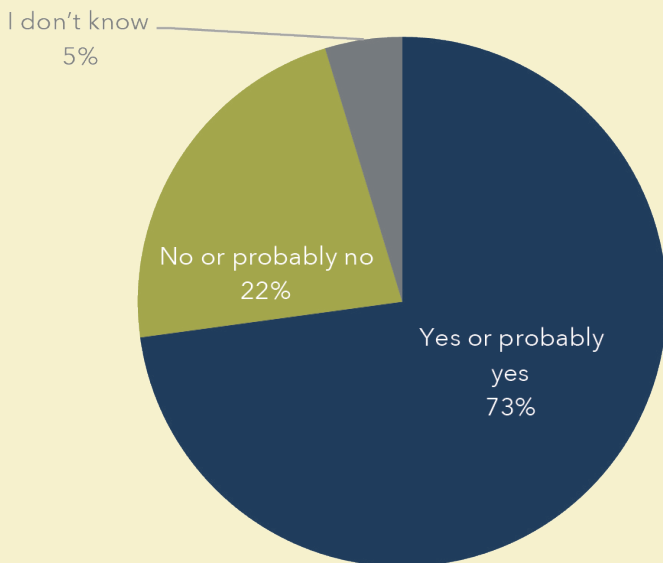
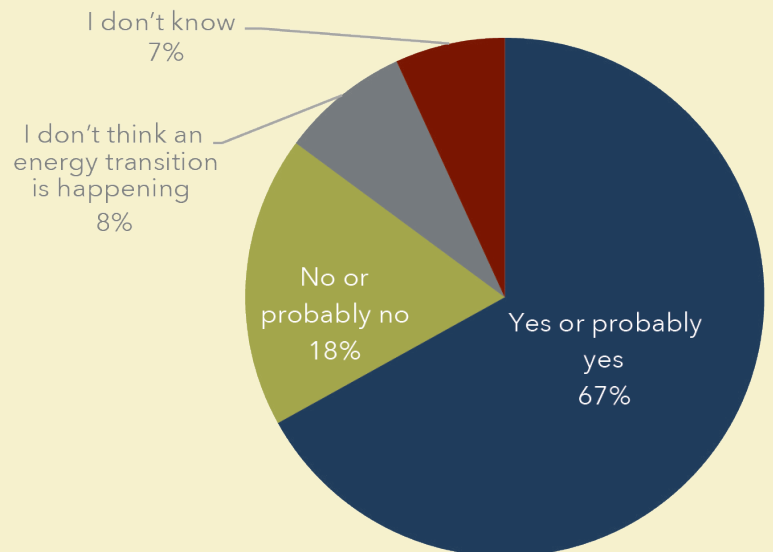


Figure 10: Beliefs regarding duration of energy transition.

Do you believe it is a long-term transition?



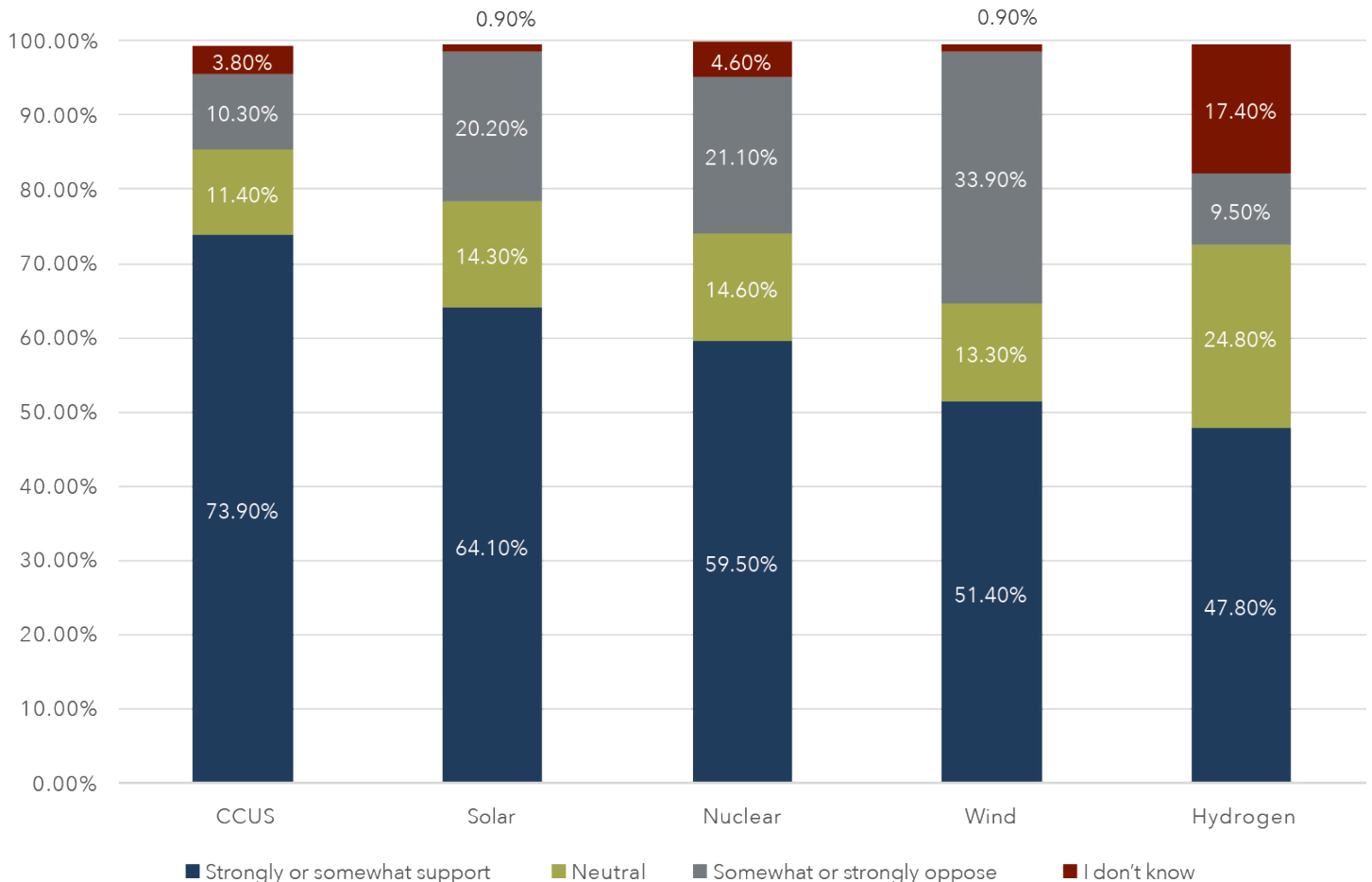
When asked whether they believed the transition would be long-term, 67% of respondents said that it was or probably would be long-term (Figure 10). Over a quarter of respondents either don't believe a transition is happening, don't think it will be long term, or are uncertain. Democrats and Independents, and those with moderate and liberal views were significantly more likely to agree that the transition would be long-term, as were women, respondents over 61, or who had lived in Wyoming between 11-50 years.

Which technologies/opportunities stakeholders feel will be more effective in meeting carbon-neutrality within Wyoming

When asked about specific carbon-neutral technologies, respondents were largely supportive of CCUS, solar and nuclear technologies and somewhat less supportive of wind and hydrogen technologies (Figure 11). Wind energy had the most opposition and respondents had the most uncertainty regarding hydrogen energy technology. outdoor recreation was of greater concern for respondents over the age of 30, respondents from Campbell and Sheridan counties, and respondents who have resided in Wyoming for less than 30 years. It was also of greater concern for those who had at least some graduate education and for Democrats and Independents. There was significantly more support among respondents with 4 years or more of higher education. Respondents who were Republican were more in support of hydrogen and fossil fuels with CCUS, while wind and solar were more supported by Independents and Democrats, moderates and liberals. Women were more supportive of wind and solar energy, while men were more supportive of hydrogen and nuclear energy. Generally older respondents were in favor carbon neutral technologies. The uncertainty regarding hydrogen energy was significantly greater among Republicans than Democrats.

Figure 11: Levels of support for carbon-neutral energy types.

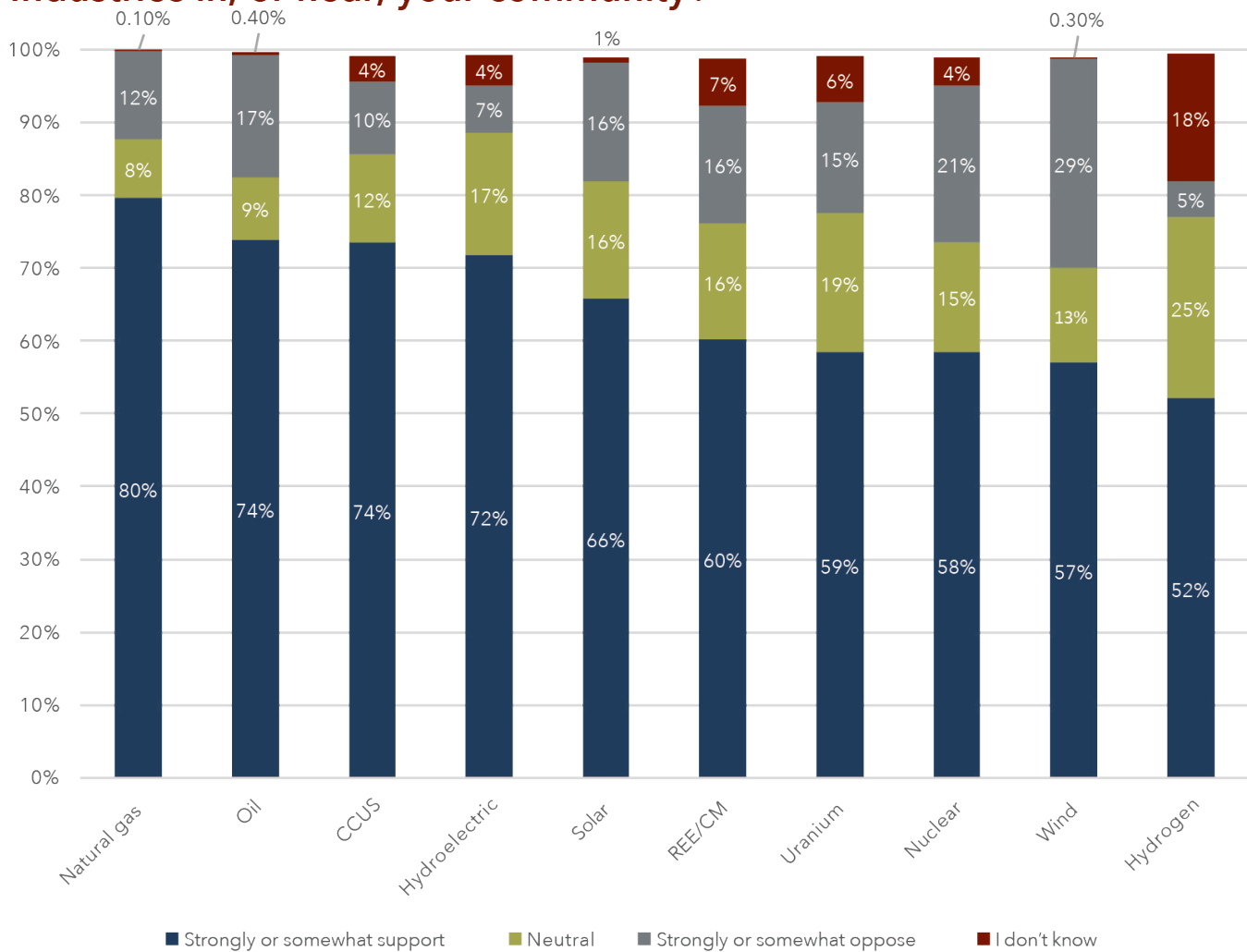
How supportive of or opposed to the following carbon-neutral energy industries are you?



When we asked respondents regarding their support for having any of these carbon neutral energy operations near their communities in the next 30-50 years, natural gas, oil, CCUS, and hydroelectric energy received the most support (Figure 12). Again, the responses to this question revealed that there was the most opposition to wind and the most uncertainty in regarding hydrogen energy. Men were more supportive of having fossil fuel and mining operations near their communities than women, as were Republicans over Democrats. Opposition to wind was highest in Converse, Laramie and Crook counties. Respondents from Natrona, Sweetwater, Campbell and Fremont counties were the most supportive of hydrogen and nuclear energies, but there was still a relatively large amount of uncertainty regarding hydrogen among residents of these counties.

Figure 12: Levels of support for carbon neutral energy types near communities

When you think about the future of your community in the next 20-50 years, how supportive would you be of having the following energy industries in, or near, your community?



When asked about their concerns related to transition, just under 44% of survey respondents said they've had experiences that have impacted how supportive they would be to new energy technologies while nearly 56% said they had not (Figure 13). Although there were no significant differences among demographic variables in relation to this question, the differences in responses among residents of different counties is interesting. While the majority of our respondents answered negatively to this question, the number of respondents who answered affirmatively was still relatively high in some counties. In particular, 50% or more of responses were affirmative from participants in Johnson (67%), Sublette (60%), Converse (54%), and Laramie (50%) counties. Affirmative responses were less than 50% in Campbell (49%), Sheridan (46%), Carbon (44%), Natrona (44%), Sweetwater (41%), Uinta (37%), Park (36%), and Lincoln (32%) counties. And in Fremont County, just 6% of respondents stated that they have had past experience that affect how supportive they would be having new energy technologies in or near their community.

Many respondents who had experiences that affected how supportive they would be to new energy technologies cited their experience directly observing the impacts of energy industries. They spoke about both living in or near energy developments and/or working in energy industries and how this shaped their opinions.

Some said that their experiences have been positive and it has made them more supportive of new energy technologies. For example, many respondents mentioned the positive economic impact that energy development has had on their communities. One respondent said,

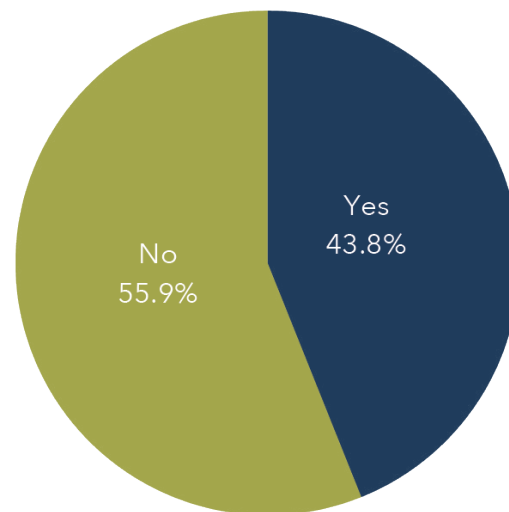
“Energy brings jobs, jobs bring opportunities, and opportunities bring money to communities. My community has benefited from these opportunities in the past with small business growth and money for the community.”

Respondents also brought up the positive impact that energy development has had on education in the state. One respondent cited their experience receiving a quality education in Wyoming that was funded by revenue from energy industries by saying that their reason for supporting new energy technologies was,

“The immense positive influence extractive mineral industries have had on school construction. I went to mostly new schools throughout my grade school and high school years. The amount of high paying jobs that provided modern or updated infrastructure and also paid for my schooling, and which continues to provide the incomes that support my job.”

Figure 13: Experiences related to energy technologies.

Have you had past experiences that affect how supportive you would be to having new energy technologies in or near your community?



Other respondents expressed having negative experiences that have made them hesitant to have new energy technologies in their communities. Their concerns ranged from the volatility of energy markets, to the interference of government policies, to the impacts on the environment and landscapes. One respondent shared their experience with boom/bust energy cycles and the role they believe federal policies played by saying:

“I watched as the coal mine was shut down in carbon county. I watched as the towns of Hanna, Medicine Bow, and Elk Mountain slowly bleed to death. I watched as families struggled to keep their heads above water. I watched as an exodus of people left those towns. I went to the funerals of the men who could no longer look their families in the face and took the coward’s way out. That is what the Federal Government wishes to see once again. I do not.”

Many respondents also spoke about negative experiences they have had with carbon-neutral energy technologies. One respondent brought up their experience living near a nuclear facility that had a meltdown and how concerned they are about the potentially devastating impacts of siting nuclear projects in Wyoming. The respondent said,

“I grew up down the mountain from the department of energy’s first nuclear reactor to generate electricity. It was a sodium reactor and suffered a catastrophic meltdown in 1954. 70 years later the community is still unable to get the US government and private owners to take responsibility for clean-up and containment. If Wyoming is going to expand into nuclear power generation who is going to hold the producers accountable if something goes wrong?”

Many respondents also said they have had negative experiences with wind development. They brought up the impact of wind farms on viewsheds, landscapes, and wildlife and said they don’t want them near their communities. Some also blamed the government for encouraging carbon-neutral energy development through the use of subsidies. For example, one respondent said,

“Wind power is a Government subsidized fallacy that ruins land, is unreliable and kills birds and bats by the literal thousands. That money would be much more wisely spent on clean burning fossil fuel technologies.”



Section V

CONCLUSION

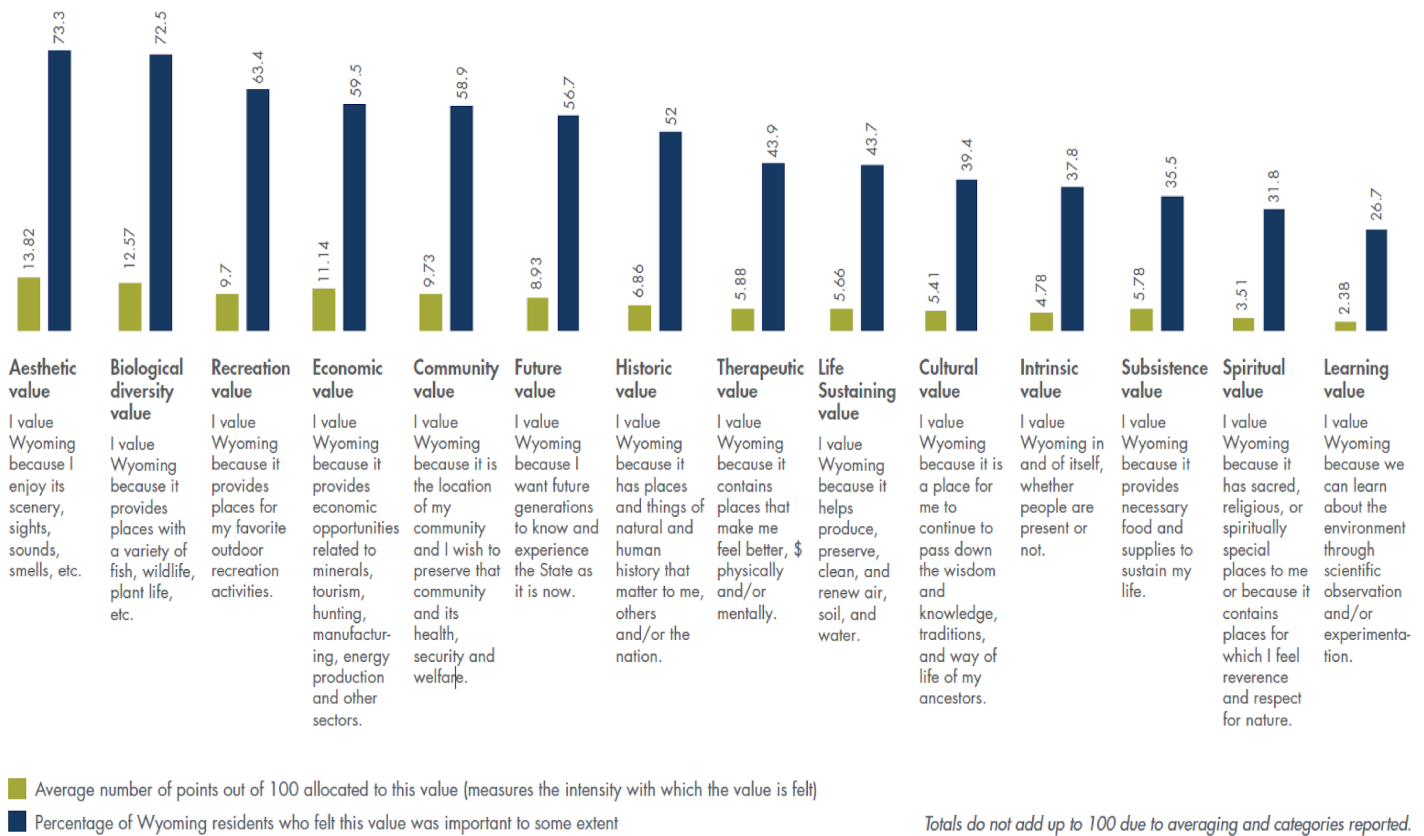
The most significant differences in beliefs and attitudes in this survey were created by respondents' political affiliation and world view. Of the 41 questions that we asked respondents to address, 34 of them were statistically different when looking at their political affiliations and world views. Generally, respondents with a Republican party affiliation and conservative world views were more supportive of fossil fuel related energy types, mining operations and nuclear energy. Approximately two-thirds of Wyoming's voters are affiliated with the Republican Party.

Although respondents were less likely to support carbon neutrality (52%), the majority of our respondents believed the country is transitioning from carbon-emitting energy to carbon-neutral energy industries (73%) and that it is a long-term transition (67%). Respondents also believe overwhelmingly that it is important for Wyoming to continue supplying energy to the region in the next 20-50 years (94%). When asked more specifically whether Wyoming should continue being an important fossil fuel energy supplier to the region for the next 20-50 years, 64% responded it was important, 32% believed it was not. However, when asking participants their level of support for having carbon-neutral energy types near their communities, the majority of participants were supportive of all options, save hydrogen gas energy, where participants seemed to need more information.

An interesting result to note is that when looking at possible consequences related to going carbon neutral, again, political affiliation and world views created differences among our respondents, except where ecosystem and biodiversity was concerned. This mirrors the values that we have learned are important to Wyoming in our previous 2020 study (Figure 14) where we found that the most important values to Wyomingites are aesthetic and biodiversity values connected to this state (www.uwyo.edu/haub/ruckelshaus-institute).



Figure 14: Wyoming residents' values from the 2020 study 'Social License for Wyoming's Energy Future'



This may help to explain the level of opposition to wind energy. Although 52% of our respondents supported to some extent wind energy, and 58% even supported having it near their communities, about one third opposed wind energy, which was the highest level of opposition for any of the carbon neutral technologies we asked about. The importance of open space, which is a characteristic of the Wyoming landscape, and its wildlife are deeply held values in this state and are believed by many to conflict with wind energy developments. Another indicator of this is that in this survey, landscape and open spaces were a high concern for our respondents (62%). The belief that much of what drives the transition to carbon neutrality is “political”, as many of our respondents have expressed, may fuel this belief more.

An indicator of our respondents' sense of place, and connection to Wyoming, may influence the responses we received regarding how much time individuals who are engaged in the energy industry are willing to commit to training before they start looking for jobs in other states. Fifty percent of our respondents were willing to spend six months to a year, or more than a year to re-training whereby men were more willing to invest more time than women. Moving to a different state is a big investment for an individual or family anyway but the amount of time respondents are willing to commit may also be an indication of their ties to Wyoming and the interest in re-training programs within these time frames.

APPENDIX: DEMOGRAPHIC CHARACTERISTICS OF SURVEY PARTICIPANTS

Table 1: Highest Level of Education Completed

	Frequency	Percent	Cumulative Percent
12th grade or less	4	.6	.7
Associate degree: Academic program	73	10.8	11.5
Certificate, diploma, or associate degree: Occupational, Tech., Vocational Program.	69	10.2	21.8
Bachelor's degree	204	30.1	51.9
High school diploma or GED	58	8.6	60.5
Some college, no degree	121	17.8	78.3
Master's degree	102	15.0	93.2
Professional or Doctoral degree (e.g.: PhD, Md, Dds, Edd, Jd, MBA, etc.)	46	6.8	100.0
Total	678	100.0	

Table 2: Approximate Annual Household Income Before Taxes in 2020

	Frequency	Percent	Cumulative Percent
Missing	31	4.6	4.6
Less than \$20,000	22	3.2	7.8
\$20,000 - \$44,999	91	13.4	21.2
\$45,000 - \$69,999	115	17.0	38.2
\$70,000 - \$94,999	143	21.1	59.3
\$95,000 - \$124,999	122	18.0	77.3
\$125,000 - \$144,999	63	9.3	86.6
\$145,000 - \$199,999	54	8.0	94.5
\$200,000 or more	37	5.5	100.0
Total	678	100.0	

Table 3: Political Party Affiliation

	Frequency	Percent	Cumulative Percent
Republican	350	51.6	51.9
Independent	170	25.1	77.0
Democrat	109	16.1	93.2
independent	14	2.1	95.3
Other	32	4.7	100.0
Total	675	99.6	
Missing	3	.4	
Total	678	100.0	

Table 4: World Views (Spectrum of Conservative to Liberal)

	Frequency	Percent	Cumulative Percent
Extremely conservative	53	7.8	7.9
Conservative	290	42.8	50.9
Moderate	240	35.4	86.5
Liberal	80	11.8	98.4
Extremely liberal	11	1.6	100.0
Total	674	99.4	
Missing	4	.6	
Total	678	100.0	

Table 5: Gender Identity

	Frequency	Percent	Cumulative Percent
Male	315	46.5	46.6
Female	331	48.8	95.6
Identifies Differently or No Answer	30	4.4	100.0
Total	676	99.7	
Missing	2	.3	
Total	678	100.0	

Table 6: Age

	Frequency	Percent	Cumulative Percent
18-30	26	3.8	4.0
31-40	86	12.7	17.0
41-50	110	16.2	33.8
51-60	140	20.6	55.1
61-70	208	30.7	86.8
71-80	78	11.5	98.6
80+	9	1.3	100.0
Total	657	96.9	
Missing	21	3.1	



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