



Carbon Capture Surveys

August 2021

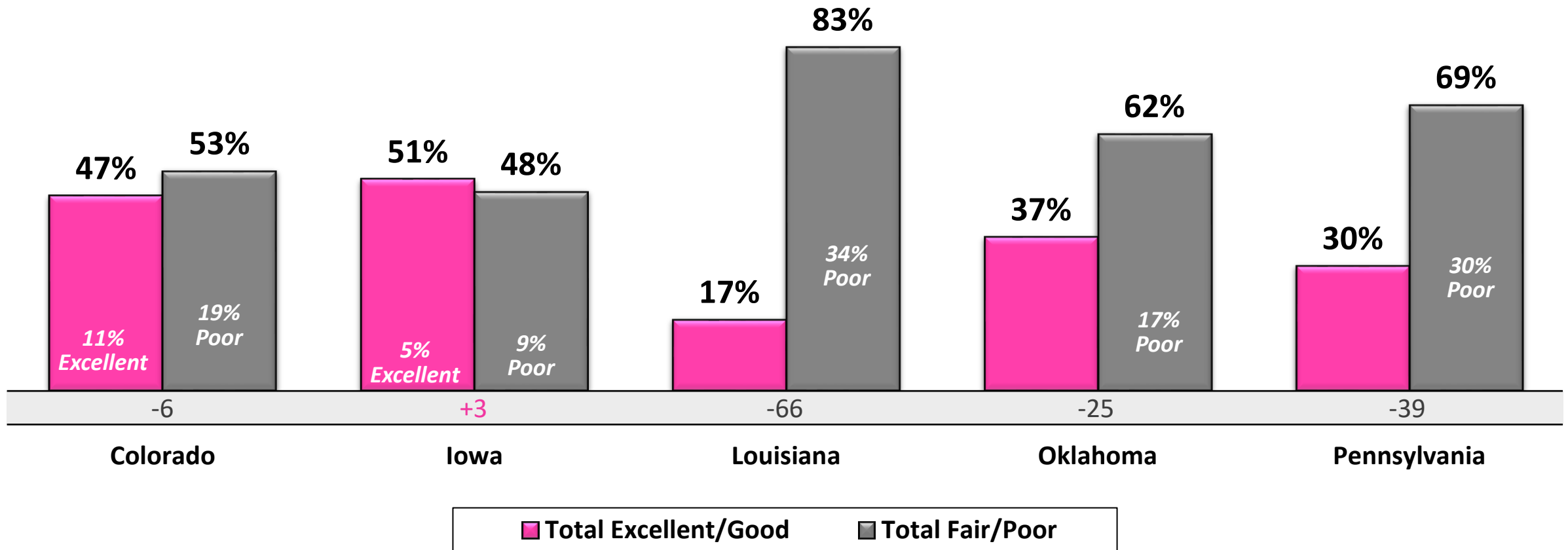
Methodology

- New Bridge Strategy conducted a survey via live telephone interviews (both cellphones and landlines) and online interviews among N=400 registered voters in each of the following five states: Colorado, Iowa, Louisiana, Oklahoma, and Pennsylvania.
- Interviews were distributed proportionally across each state. Quotas were set for certain demographic sub-groups, such as gender and age, and each state sample was representative of voters in that state by party, race and other key variables.
- Interviews were conducted as follows:
 - Iowa: July 17-21, 2021
 - Louisiana: August 3-7, 2021
 - Colorado: August 9-15, 2021
 - Pennsylvania: August 9-15, 2021
 - Oklahoma: August 10-16, 2021
- The credibility interval (analogous to margin of error) is $\pm 4.90\%$ for the overall sample in each state. The credibility interval varies for sub-groups.



Views of the Economy

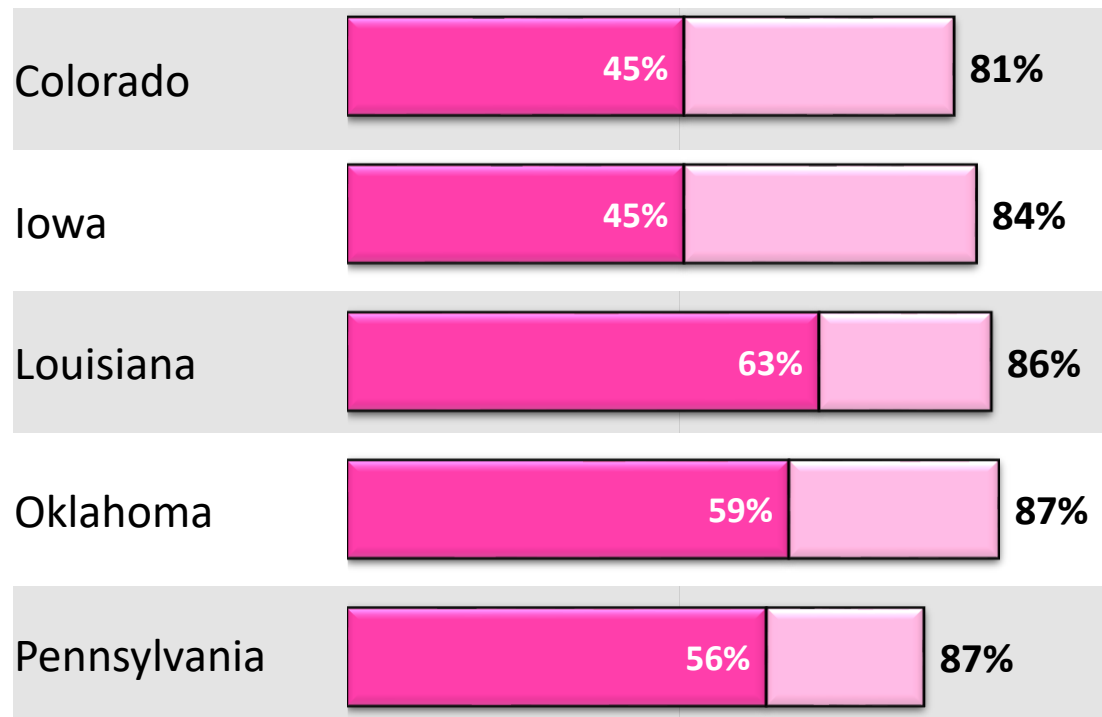
Colorado and Iowa voters are more optimistic about their states' economies than voters from the other states.



How would you rate the current state of the economy in Colorado? Would you say it is excellent, good, only fair, or poor?

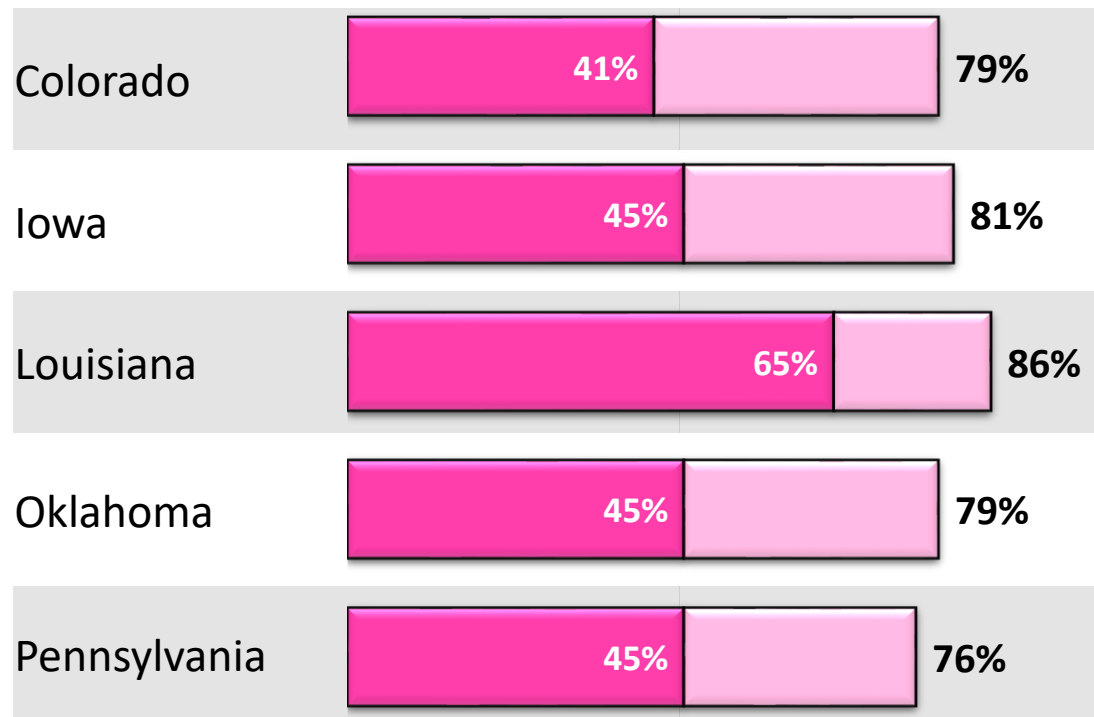
A solid majority of voters say protecting American jobs and creating new ones in major industries are important priorities, highest in Louisiana.

*Protect American jobs in major industries**



■ Top Priority ■ Top/Very Important Priority

*Create new good jobs in major industries***



■ Top Priority ■ Top/Very Important Priority

The following are some goals for the country. For each one, please indicate whether you think that should be -- a top priority, very important but not a top priority, somewhat of a priority, or not a priority -- for our country.

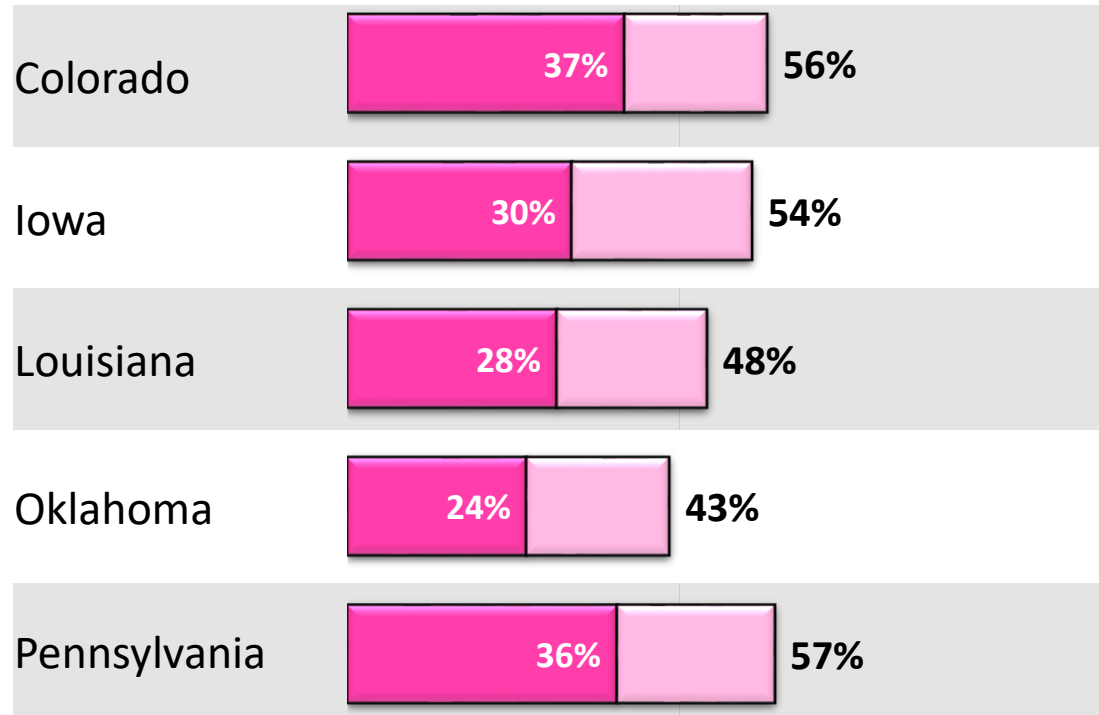
**Sample A **Sample B*



Views of Climate Change and Related Issues

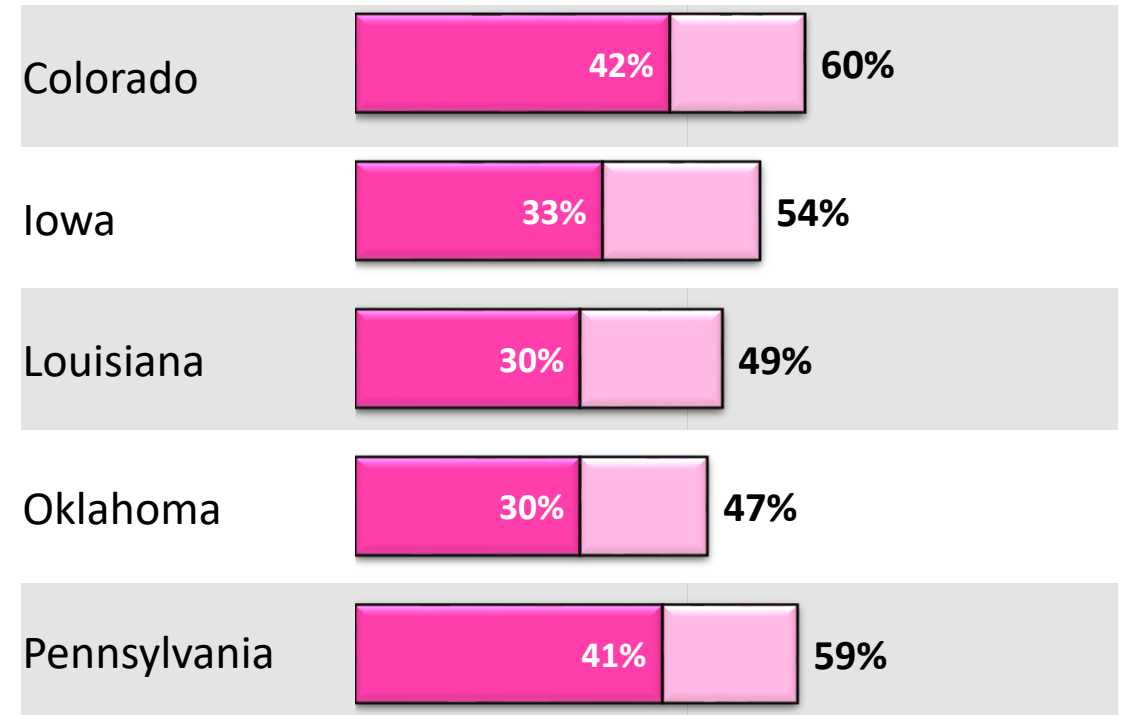
More voters in Colorado, Iowa, and Pennsylvania say it's important to transition to cleaner energy and address climate change.

Transition away from fossil fuels to cleaner energy



■ Top Priority ■ Top/Very Important Priority

Address climate change



■ Top Priority ■ Top/Very Important Priority

The following are some goals for the country. For each one, please indicate whether you think that should be -- a top priority, very important but not a top priority, somewhat of a priority, or not a priority -- for our country.

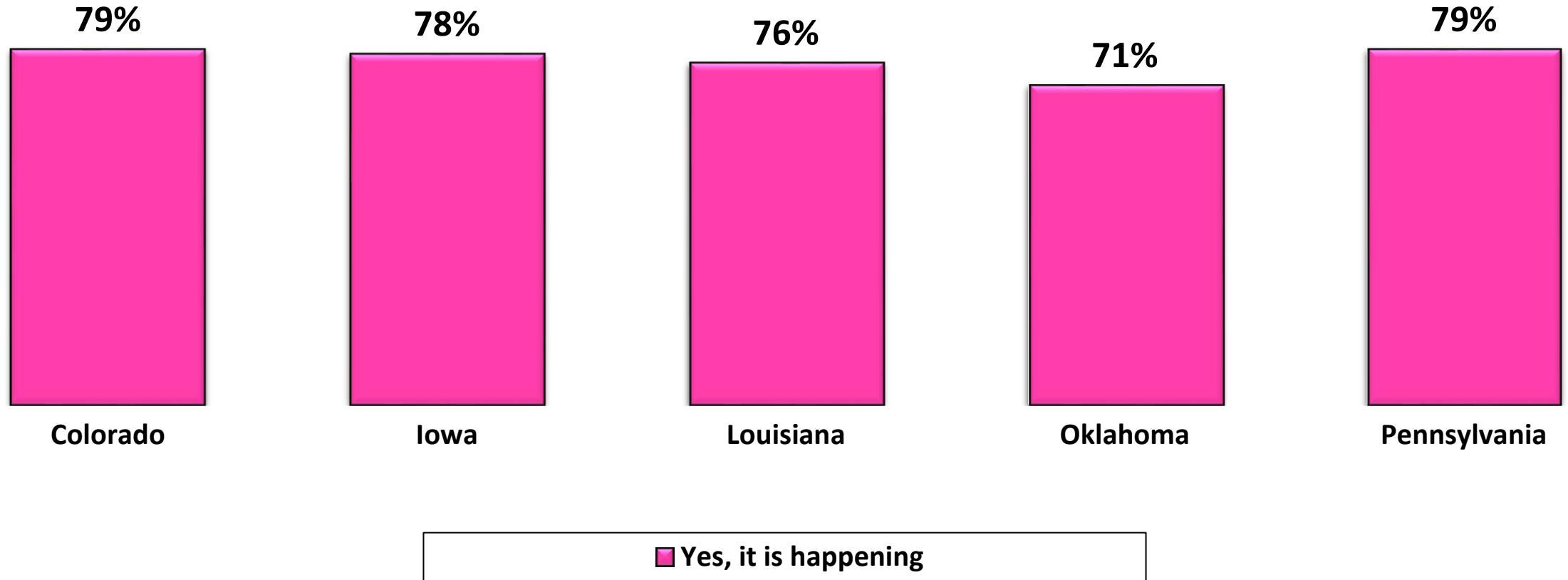
Across all five states, Democrats are most likely to say addressing climate change is a top or very important priority.

Address climate change

<i>% Top/Very Important Priority</i>	GOP	Ind	Dem
Colorado	24%	58%	96%
Iowa	23%	52%	89%
Louisiana	16%	48%	77%
Oklahoma	30%	52%	67%
Pennsylvania	30%	49%	88%

The following are some goals for the country. For each one, please indicate whether you think that should be -- a top priority, very important but not a top priority, somewhat of a priority, or not a priority -- for our country.

While everyone may not see it as a priority, more than seven-in-ten voters in these states acknowledge the existence of climate change.



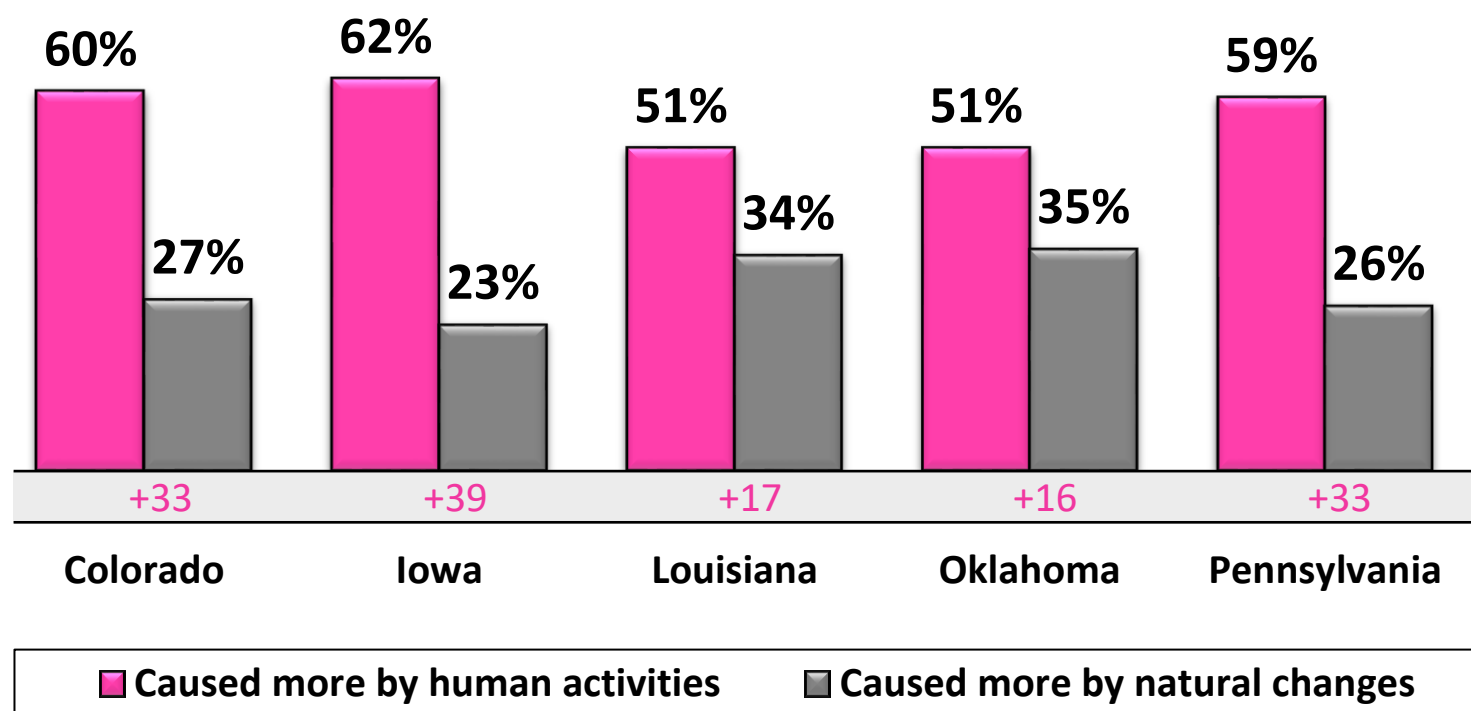
Do you think climate change is happening or not?

Regardless of party, in each of the five states, a majority say that climate change is happening.

<i>% Yes, it is happening</i>	GOP	Ind	Dem
Colorado	58%	81%	97%
Iowa	57%	83%	95%
Louisiana	56%	81%	90%
Oklahoma	61%	74%	87%
Pennsylvania	62%	70%	94%

Do you think climate change is happening or not?

At least half of voters in each state say climate change is caused more by human activities. Among those who say it is caused more by natural changes, most say people are having some impact.



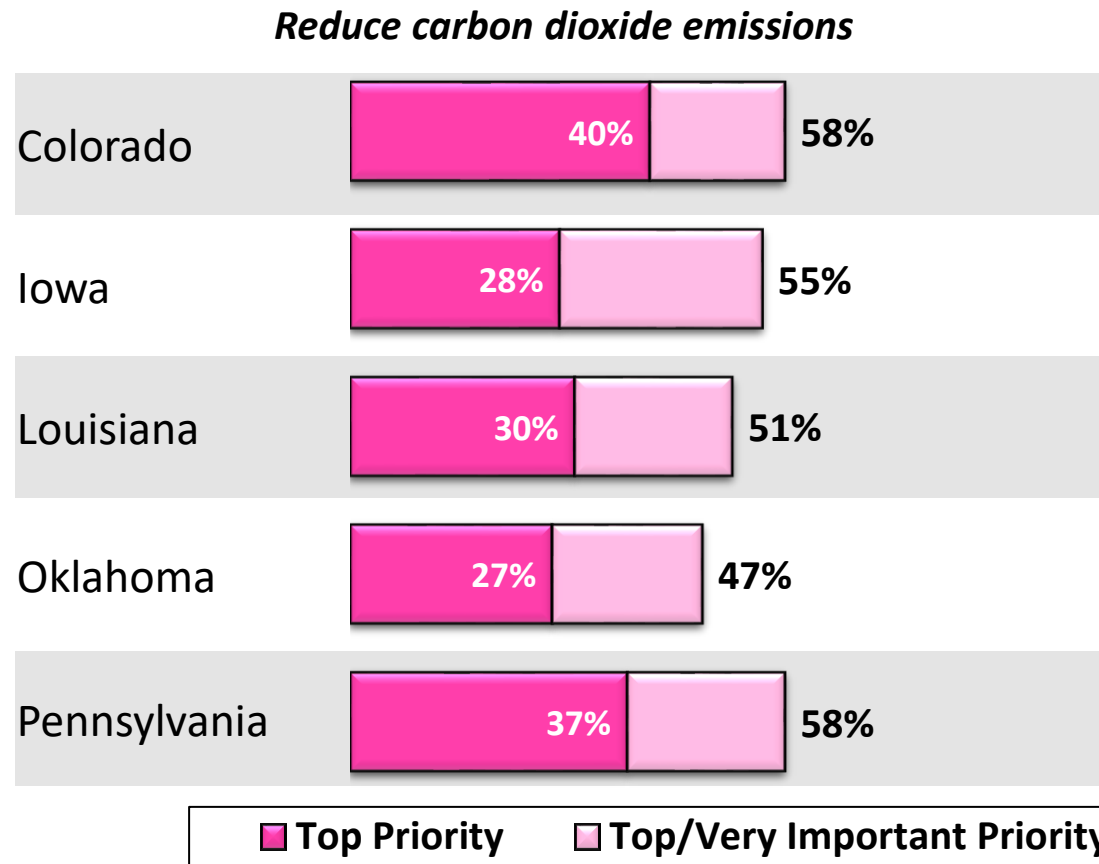
<i>% People having some impact</i>	<i>%</i>
Colorado	62%
Iowa	56%
Louisiana	66%
Oklahoma	62%
Pennsylvania	56%

*Assuming that climate change is happening, do you think it is...
And do you think people are having any impact at all on the changing climate or is it all natural changes?*



Carbon Capture

Besides Oklahoma, a majority in each state say it is a top or very important priority to reduce carbon dioxide emissions.



The following are some goals for the country. For each one, please indicate whether you think that should be -- a top priority, very important but not a top priority, somewhat of a priority, or not a priority -- for our country.

Again, party is most predictive. Democrats are the most likely to say reducing carbon dioxide emissions is a top/very important priority.

Reduce carbon dioxide emissions

<i>% Top/Very Important Priority</i>	GOP	Ind	Dem
Colorado	29%	53%	90%
Iowa	29%	50%	86%
Louisiana	19%	54%	77%
Oklahoma	30%	53%	69%
Pennsylvania	35%	47%	85%

The following are some goals for the country. For each one, please indicate whether you think that should be -- a top priority, very important but not a top priority, somewhat of a priority, or not a priority -- for our country.

In Iowa, we asked respondents to tell us why we would want to reduce carbon dioxide emissions. Many did point to climate change or ozone, but some broadly reference air quality.

“To reduce the buildup of greenhouse gases in the atmosphere warming the planet and making it uninhabitable.”

Male, Strong Democrat, 45-54

“Stop killing the ozone layer.”

Female, Strong Republican, 25-34

“Global warming. Death to our beautiful planet.”

Female, Independent, 55-64

“Clean air now.”

Male, Lean Republican, 65+

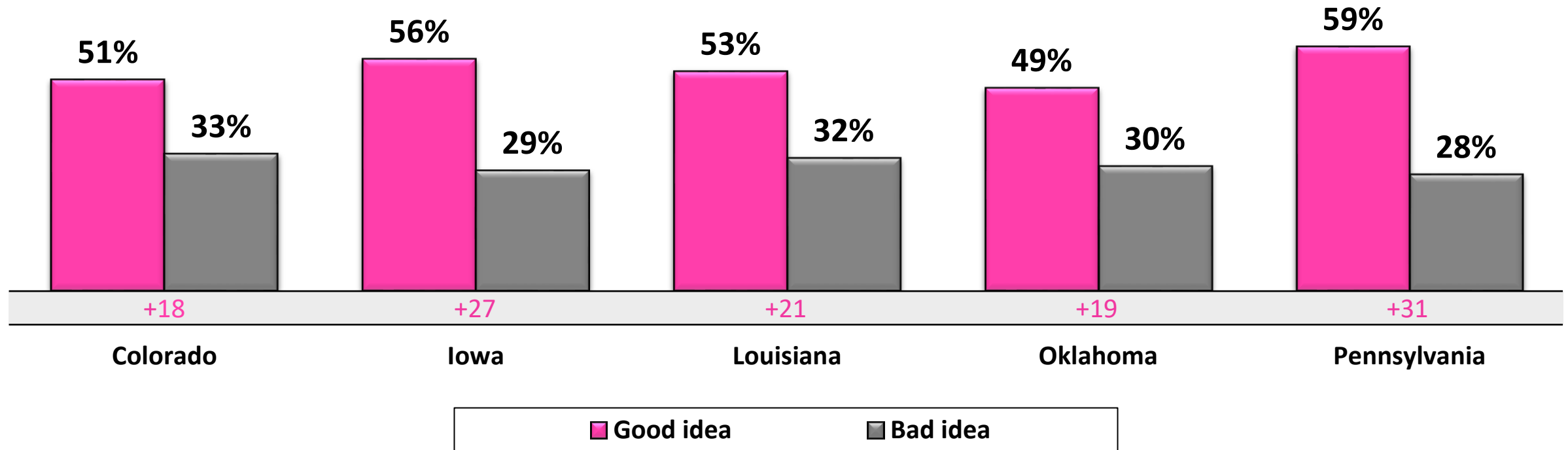
Thinking about one of these – reducing carbon dioxide emissions – what is the main reason we might want to do that?

We provided an explanation of carbon capture given that we saw in the online qualboard discussion that almost no one was familiar with it:

Carbon dioxide, that is CO₂, is the gas that we breathe out everyday, but it is also produced by burning fossil fuels in electricity generation or in some industrial processes like producing cement, steel, ethanol, or chemicals used in everyday products. While plants and trees rely on carbon dioxide, it has been determined that we are producing too much of it.

Carbon capture is a technology designed to manage carbon dioxide and protect the environment by capturing 90 percent or more of the carbon dioxide produced by these industries before it is released into the atmosphere. Once the carbon dioxide has been captured, it can be used to produce products or is transferred and pumped a mile or more underground to be stored in vast basins underneath layers of solid rock and away from groundwater. After use, the site is sealed, and public and private oversight, monitoring, and verification occurs long-term.

Voters in Pennsylvania and Iowa are the most likely to say that carbon capture sounds like a good idea.



And, based on what you know, would you say that carbon capture generally sounds like a good idea or a bad idea?

Majorities of Democrats in all five states and Independents in three states say that carbon capture sounds like a good idea; net positive among GOP in three as well.

<i>% Good idea-% Bad idea</i>	GOP	Ind	Dem
Colorado	32%-50%	48%-30%	71%-20%
Iowa	47%-40%	51%-29%	70%-17%
Louisiana	38%-43%	54%-32%	63%-24%
Oklahoma	39%-34%	57%-29%	58%-23%
Pennsylvania	55%-35%	47%-33%	69%-21%

And, based on what you know, would you say that carbon capture generally sounds like a good idea or a bad idea?

Women are more likely than men to say carbon capture sounds like a good idea in every state but Oklahoma.

<i>% Good idea-% Bad idea</i>	Men	Women
Colorado	49%-32%	52%-33%
Iowa	53%-32%	59%-26%
Louisiana	50%-36%	55%-29%
Oklahoma	49%-33%	49%-27%
Pennsylvania	54%-32%	63%-25%

And, based on what you know, would you say that carbon capture generally sounds like a good idea or a bad idea?

Voters in cities/suburbs are more likely than those in towns/rural areas to think carbon capture sounds like a good idea.

<i>% Good idea-% Bad idea</i>	City/ Suburb	Town/ Rural
Colorado	55%-29%	40%-42%
Iowa	59%-24%	53%-33%
Louisiana	59%-26%	44%-40%
Oklahoma	51%-29%	47%-30%
Pennsylvania	65%-21%	49%-38%

And, based on what you know, would you say that carbon capture generally sounds like a good idea or a bad idea?

Across all five states, older men are the most likely to initially react negatively to the concept of carbon capture.

<i>% Good idea-% Bad idea</i>	Men 18-44	Men 45+	Women 18-44	Women 45+
Colorado	65%-23%	36%-39%	47%-38%	57%-28%
Iowa	57%-24%	50%-38%	60%-31%	58%-24%
Louisiana	62%-29%	37%-43%	66%-22%	49%-33%
Oklahoma	54%-28%	47%-36%	60%-23%	42%-29%
Pennsylvania	55%-29%	54%-34%	66%-21%	60%-27%

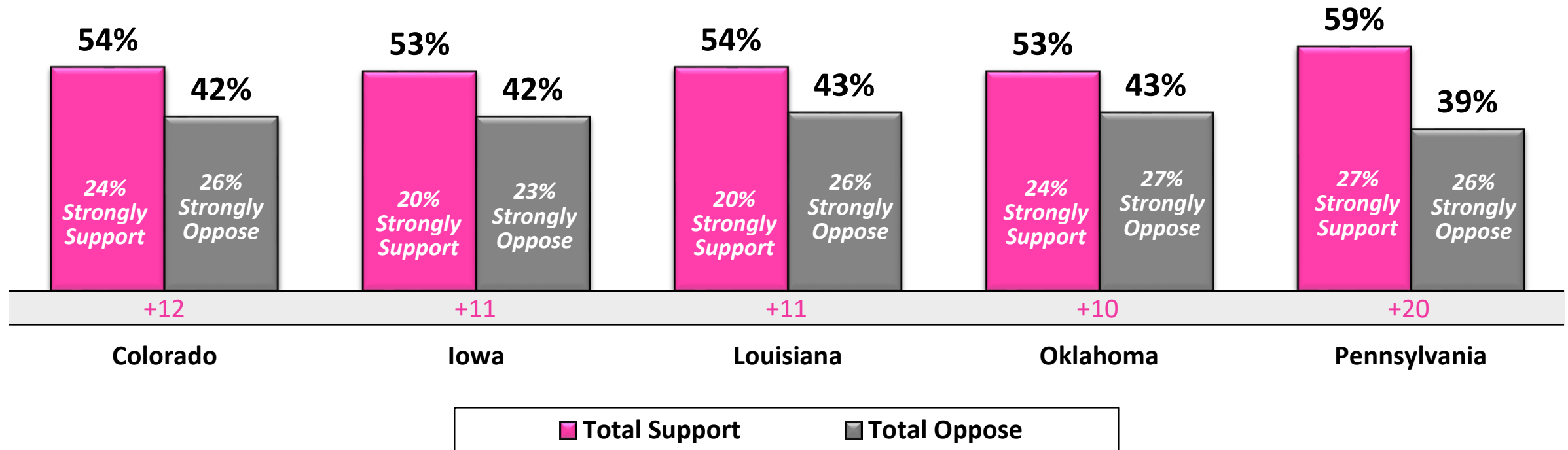
And, based on what you know, would you say that carbon capture generally sounds like a good idea or a bad idea?

Voters were asked whether or not they support government action to further carbon capture efforts. Specifically, they were asked:

Would you support or oppose tax incentives to encourage private companies to invest in this technology to capture carbon dioxide emissions?

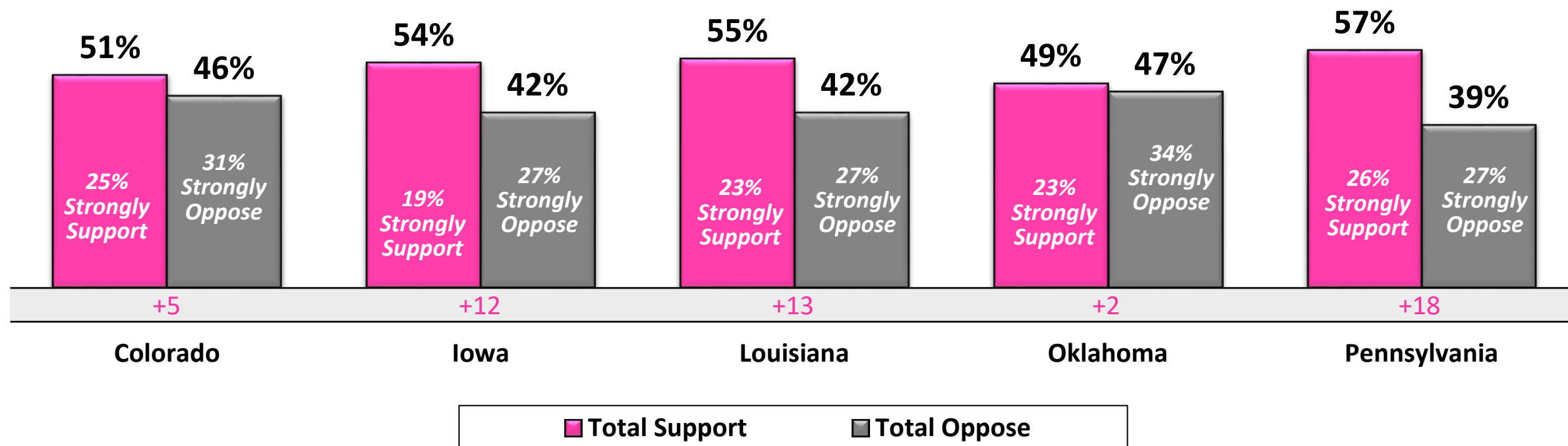
Would you support or oppose the U.S. government helping to provide the financing for constructing carbon capture infrastructure to ensure the ability for companies of all sizes to more cost effectively capture and store carbon dioxide emissions?

**A majority in each state support tax incentives to encourage private companies to invest in capturing carbon dioxide emissions;
Pennsylvania voters are the most enthusiastic.**



Would you support or oppose tax incentives to encourage private companies to invest in this technology to capture carbon dioxide emissions?

Support for the U.S. government helping to provide financing for constructing carbon capture infrastructure is strongest in Pennsylvania, Louisiana, and Iowa.



Would you support or oppose the U.S. government helping to provide the financing for constructing carbon capture infrastructure to ensure the ability for companies of all sizes to more cost effectively capture and store carbon dioxide emissions?

The mechanism matters. GOP and Independents are more likely to prefer tax incentives, while Democrats tend to prefer the government financing.

Tax incentives to encourage private companies to invest in this technology to capture carbon dioxide emissions

U.S. government helping to provide the financing for constructing carbon capture infrastructure to ensure the ability for companies of all sizes to more cost effectively capture and store carbon dioxide emissions

% Total Support	GOP	Ind	Dem
Colorado	35%	52%	75%
Iowa	39%	55%	70%
Louisiana	37%	53%	69%
Oklahoma	44%	57%	69%
Pennsylvania	50%	45%	75%

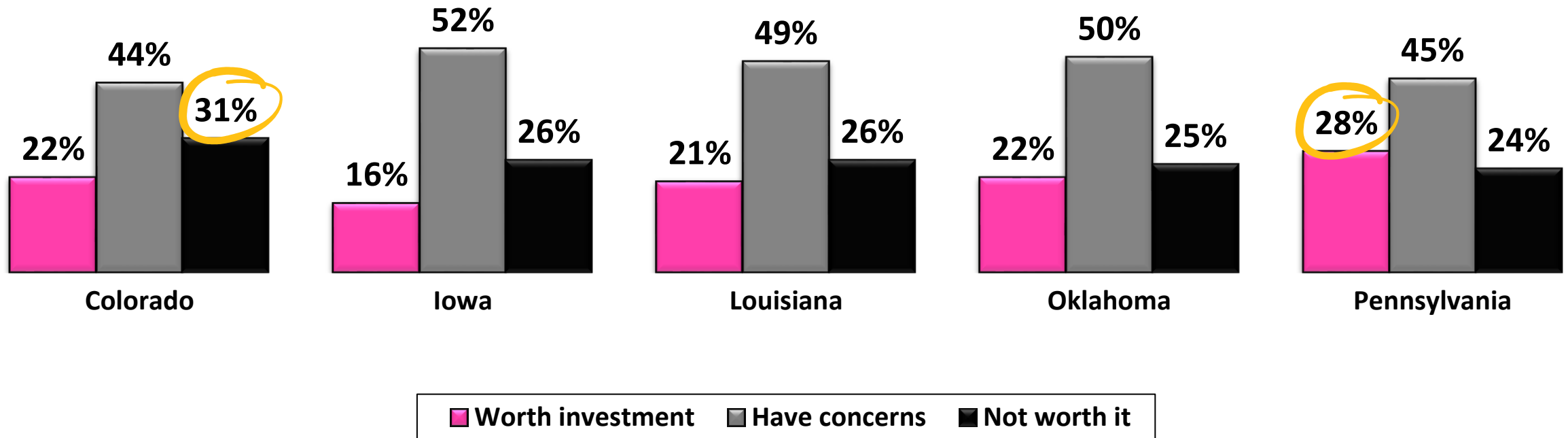
% Total Support	GOP	Ind	Dem
Colorado	24%	48%	81%
Iowa	35%	47%	80%
Louisiana	36%	49%	76%
Oklahoma	37%	55%	67%
Pennsylvania	44%	48%	76%

Would you support or oppose tax incentives to encourage private companies to invest in this technology to capture carbon dioxide emissions?
Would you support or oppose the U.S. government helping to provide the financing for constructing carbon capture infrastructure to ensure the ability for companies of all sizes to more cost effectively capture and store carbon dioxide emissions?

Given some of the cautious optimism we heard from voters in these states in the online focus group discussion, we also wanted to further understand views by asking which came closest to their opinion:

- *Carbon capture is worth the investment to help reduce emissions for industries producing electricity, cement, steel and other vital products;*
- *Carbon capture sounds promising, but I have some concerns about safety or cost; or*
- *Carbon capture is not worth the investment as it will just stall a transition to cleaner energy sources at a high price.*

In each state, a majority or plurality say that carbon capture sounds promising, but there are concerns. Coloradans are more likely to say the investment is not worth it, while Pennsylvanians are most positive.



Thinking some more about carbon capture, please indicate which comes closest to your opinion.



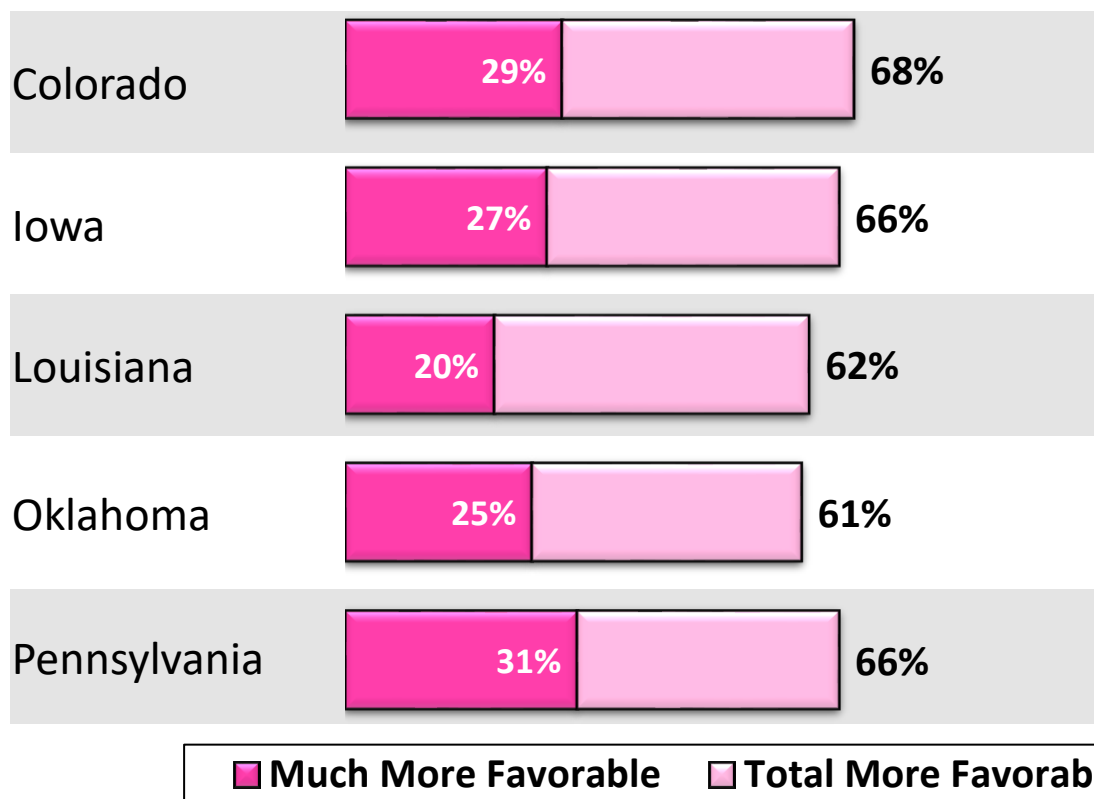
Communicating About Carbon Capture

In the online qualitative discussion, voters in these states had lots of questions about carbon capture, including...

- What happens if there is a leak underground or in pipeline – is there a danger to plants, animals, humans?
- How do we know there will not be a leak?
- What happens when there is no more space to store CO2 underground?
- How much does it cost?
- How much has this been tested or researched?
- Why is this the best solution?
- What locations will the CO2 be stored?
- What are the drawbacks?
- Who will be responsible, and how will environmental issues be handled?
- What is the lifespan of the CO2 storage?

One fact that stood out in every state was that carbon dioxide can be “re-used” for other purposes, which tends to prompt a favorable response.

Carbon dioxide can also be used for other purposes, such as producing low and zero emission fuels, building materials and other products.



There are a number of different things that someone might hear about carbon capture. For each one, please indicate if that gives you a much more favorable, somewhat more favorable, somewhat less favorable, much less favorable view of carbon capture, or whether it has no impact at all on your view.

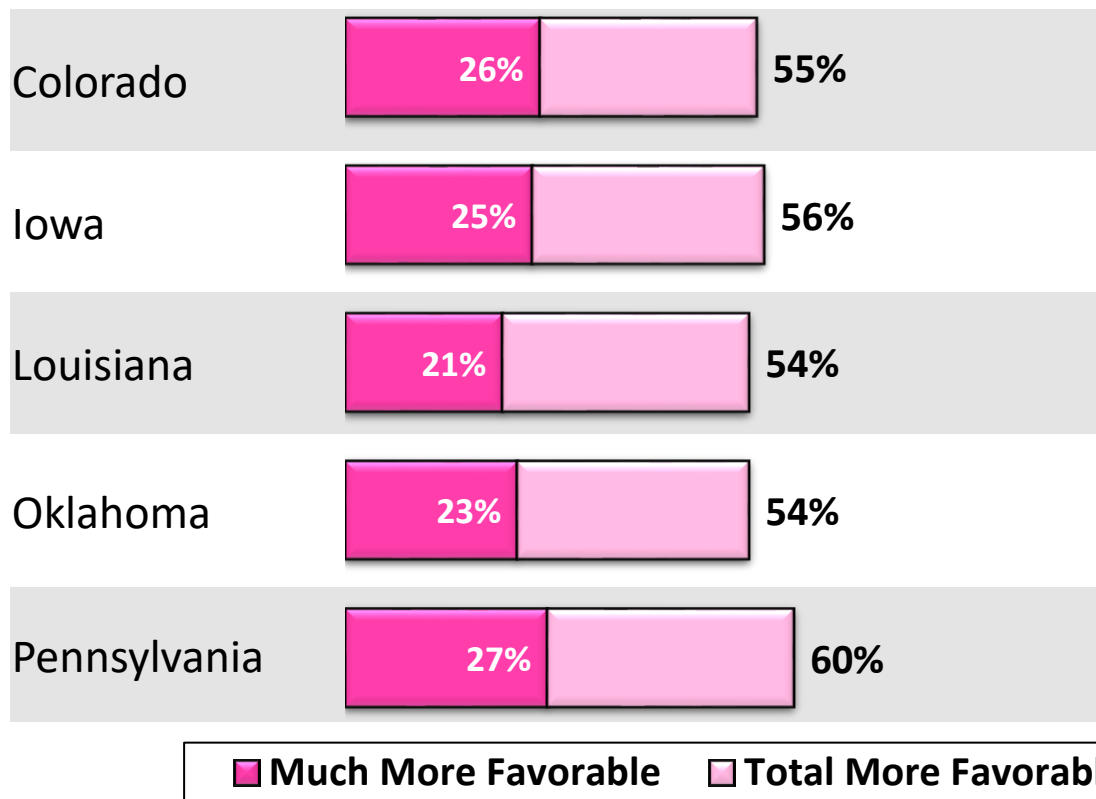
In fact, referring to the process as “carbon reuse and return” ranked highest across all states, followed in most states by the phrase “carbon management.”

	Carbon reuse and return	Carbon management	Carbon capture technology	Carbon capture	Carbon capture and storage
Colorado	32%	24%	29%	22%	20%
Iowa	38%	25%	5%	12%	8%
Louisiana	37%	22%	20%	9%	8%
Oklahoma	35%	27%	14%	11%	8%
Pennsylvania	34%	25%	18%	9%	11%

If you had to choose, which one phrase gives you the most favorable feeling?

Telling voters how long it has been used (Norway example) tended to perform second best in eliciting a very positive response.

Norway has been effectively capturing and storing carbon emissions since 1996. One of the first projects in the world there has successfully stored over 16 million tons of CO2 in the last 20 years.



There are a number of different things that someone might hear about carbon capture. For each one, please indicate if that gives you a much more favorable, somewhat more favorable, somewhat less favorable, much less favorable view of carbon capture, or whether it has no impact at all on your view.

The statement about costs declining by 70% for new carbon capture processes elicited a very positive response in each state.

Today there are 63 commercial carbon capture projects that are operating, under construction or in development...

<i>% Total More Favorable</i>	<i>%</i>
Colorado	54%
Iowa	60%
Louisiana	49%
Oklahoma	53%
Pennsylvania	59%

Carbon capture projects safely store carbon dioxide by following strict safety protocols...

<i>% Total More Favorable</i>	<i>%</i>
Colorado	48%
Iowa	53%
Louisiana	51%
Oklahoma	49%
Pennsylvania	52%

Over the past ten years, a number of innovations and improvements have enabled costs to decline by 70 percent for new carbon capture processes...

<i>% Total More Favorable</i>	<i>%</i>
Colorado	58%
Iowa	59%
Louisiana	53%
Oklahoma	54%
Pennsylvania	62%

NOTE: Statements are condensed for formatting.

There are a number of different things that someone might hear about carbon capture. For each one, please indicate if that gives you a much more favorable, somewhat more favorable, somewhat less favorable, much less favorable view of carbon capture, or whether it has no impact at all on your view.

The safety message was less strong despite the fact that “safety” was a common concern among respondents in the online discussion, possibly indicating that this messaging is not strong enough to allay concerns or the concept is too new for them to quickly feel assured.

“There was some mention of it needing to be monitored to ensure that it doesn’t leak out which causes some concern for me as there was no mention of what would happen if it leaked or what could be done to fix the problem.”

Female, Republican, 35-44

“[I did not like] the one that talks about how much regulations and safety cautions are done. They always say stuff like that until they make mistakes.”

Male, Independent, 35-44

“My views became less positive because my questions about safety were not well answered.”

Male, Republican, 35-44

In addition, we tested the following messages across all five states:

Message	Language
New Jobs	Carbon capture at industrial facilities and power plants and the associated infrastructure in states across the majority of the country can support an annual average of up to 68,000 project jobs and 35,800 ongoing operational jobs over a 15-year period. These are good-paying jobs in construction, engineering, and equipment manufacturing.
Keep Jobs	Tens of millions of Americans work in industries that unavoidably produce carbon dioxide, and these are often some of the best-paying jobs available in their communities. Carbon capture is a win-win that allows us to keep these good jobs, while helping preserve our climate.
Something is Happening	Climate change is a complicated problem, and there are lots of different opinions on it. But, something has changed. Summers are hotter earlier, and the air is not as clean. No one action will fix climate change, and no solution is perfect, but we have to start somewhere. Mother Nature can't do it on her own, and this technology is a good start.
Other Pollutants w/o Equity	Carbon capture can help clean the air not just from carbon but other pollutants too. It requires pretreatment to remove sulfur oxides, particulate matter, and nitrogen dioxide.
Help the Transition	Solar and wind are set to become the largest and cheapest sources of electricity, but until battery storage technology advances dramatically, we will still also need other energies to help ensure reliable electricity. Carbon capture can be a cost-efficient strategy to reduce emissions while still supplying reliable power.
Only Option	Even if we were able to switch to all renewable energy over time, the production of many products – such as cement and steel – would still be major emitters of carbon dioxide. Carbon capture is currently the only feasible technology to reduce some key industrial emissions while continuing to produce these products that are vital to building new homes, cars, or our roads and bridges.
Equity	Carbon capture can help clean the air not just from carbon but other pollutants that often disproportionately affect the low income or communities of color where many refineries or other industrial plants are located. Carbon capture requires pretreatment to remove sulfur oxides, particulate matter and nitrogen dioxide.
More Cost Effective	Electrical power plants, cement or steel plants and other industrial facilities typically take years to construct and are intended to last decades so that costs are spread out over time. It is often less costly to upgrade them with carbon capture technology, than to invest in brand new alternatives.

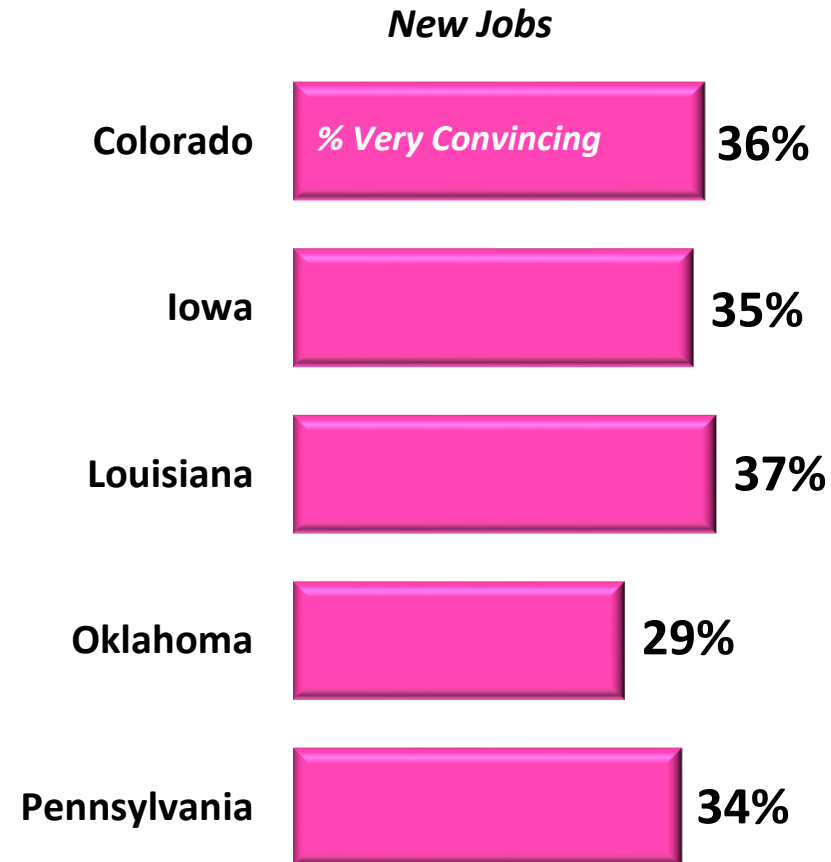
The “new jobs” message was among the best performing in each state.

<i>% Very Convincing</i>	New Jobs**	Keep Jobs*	Something is Happening**	Other Pollutants w/o Equity**	Help the Transition*	Only Option*	Equity*	More Cost Effective**
Colorado	36%	31%	36%	31%	30%	32%	29%	24%
Iowa	35%	28%	30%	25%	24%	29%	25%	20%
Louisiana	32%	32%	33%	29%	29%	33%	30%	23%
Oklahoma	29%	34%	30%	23%	26%	24%	21%	18%
Pennsylvania	34%	37%	35%	26%	33%	29%	31%	20%

Next, here is a series of different statements that you might hear from those who SUPPORT investing in carbon capture technology. After each one, please indicate if that statement is a very convincing, somewhat convincing, not very convincing or not at all convincing as a reason to support carbon capture.

*Sample A **Sample B

In most states, over one-third find the “new jobs” message to be very convincing.



Next, here is a series of different statements that you might hear from those who SUPPORT investing in carbon capture technology. After each one, please indicate if that statement is a very convincing, somewhat convincing, not very convincing or not at all convincing as a reason to support carbon capture.

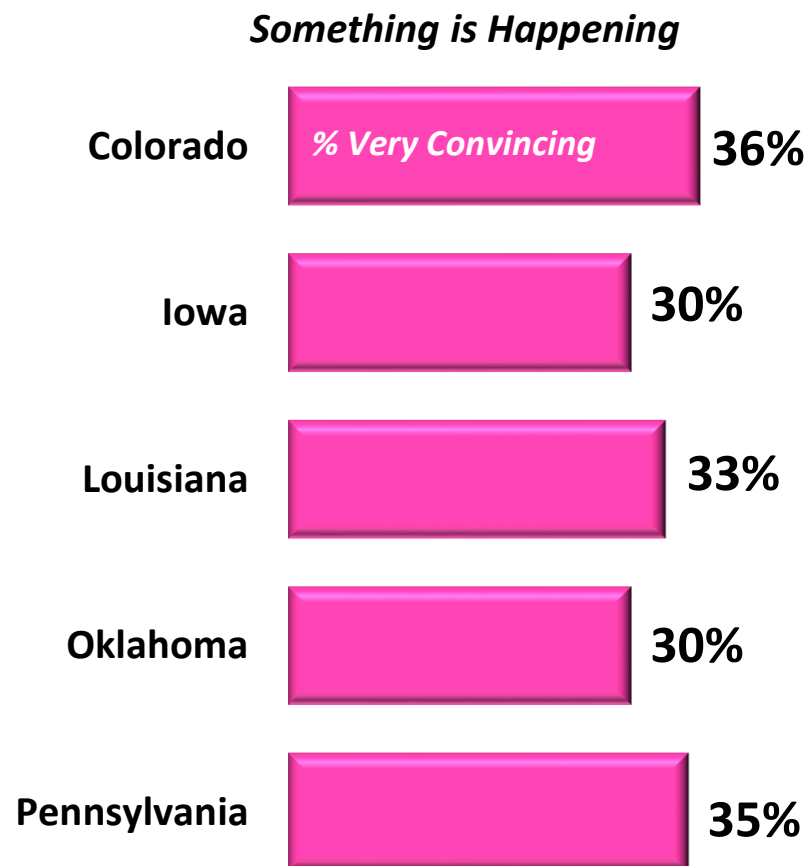
In most states, those with an excellent/good view of their state's economy are more likely to find the “new jobs” message to be very convincing than those who are more worried about the economy.

New Jobs

<i>% Very Convincing</i>	State Economy – Excellent/Good	State Economy – Fair/Poor
Colorado	43%	29%
Iowa	34%	36%
Louisiana	45%	36%
Oklahoma	24%	32%
Pennsylvania	45%	29%

Next, here is a series of different statements that you might hear from those who SUPPORT investing in carbon capture technology. After each one, please indicate if that statement is a very convincing, somewhat convincing, not very convincing or not at all convincing as a reason to support carbon capture.

Across all five states, around one-third say the “something is happening” and we need to act on climate message is very convincing.



Next, here is a series of different statements that you might hear from those who SUPPORT investing in carbon capture technology. After each one, please indicate if that statement is a very convincing, somewhat convincing, not very convincing or not at all convincing as a reason to support carbon capture.

Democrats tend to find the “something is happening” message to be more convincing; not effective among Republicans.

Something is Happening

<i>% Very Convincing</i>	Total	GOP	Ind	Dem
Colorado	36%	28%	32%	49%
Iowa	30%	21%	22%	46%
Louisiana	33%	13%	31%	51%
Oklahoma	30%	21%	38%	44%
Pennsylvania	35%	29%	12%	54%

Next, here is a series of different statements that you might hear from those who SUPPORT investing in carbon capture technology. After each one, please indicate if that statement is a very convincing, somewhat convincing, not very convincing or not at all convincing as a reason to support carbon capture.

While it was generally less resonant, in Iowa and Louisiana, voters of color say the “equity” message is very convincing.

Equity

<i>% Very Convincing</i>	Total	White	Voters of Color
Colorado	29%	31%	21%
Iowa	25%	23%	56%
Louisiana	30%	24%	41%
Oklahoma	21%	22%	16%
Pennsylvania	31%	30%	33%

Next, here is a series of different statements that you might hear from those who SUPPORT investing in carbon capture technology. After each one, please indicate if that statement is a very convincing, somewhat convincing, not very convincing or not at all convincing as a reason to support carbon capture.

With few exceptions, these messages are lower-tier; Pennsylvania and Oklahoma are only two where “keeping jobs” was more resonant than a “new jobs” message.

<i>% Very Convincing</i>	Other Pollutants w/o Equity**	Help the Transition*	Only Option*	Keep Jobs*	More Cost Effective**
Colorado	31%	30%	32%	31%	24%
Iowa	25%	24%	29%	28%	20%
Louisiana	29%	29%	33%	32%	23%
Oklahoma	23%	26%	24%	34%	18%
Pennsylvania	26%	33%	29%	37%	20%

Next, here is a series of different statements that you might hear from those who SUPPORT investing in carbon capture technology. After each one, please indicate if that statement is a very convincing, somewhat convincing, not very convincing or not at all convincing as a reason to support carbon capture.

**Sample A **Sample B*

We tested a couple of messages that did not move the needle in the groups or when we did an initial test among Iowa voters.

- **(Leader)** The U.S. is now the world's leader in carbon capture and storage, and that means American can be a global leader in the manufacturing, engineering and production of these new technologies that can help the world to preserve our climate.

Given that this technology was new to almost everyone, they had a difficult time believing that the United States was a leader in this. Also, Democrats were skeptical we would be ahead on anything related to climate change.

- **(Cleaner)** Because it requires a new investment, carbon capture will primarily be placed on newer, more efficient and less polluting power plants or industrial facilities— further improving air quality as older, more polluting facilities are phased out.

This message tends to lead with its chin, reinforcing that facilities are polluting. More positive phrasing tends to be more compelling.

The main takeaways are that carbon capture helps the climate and removes other pollutants, while also creating new jobs.

Respondents say they are most likely to remember that...

- Carbon capture is beneficial overall;
- It is a solution to climate change;
- It is beneficial for air quality as requires removing other pollutants;
- It will create new jobs; and
- In order to keep producing cement and other products, we need this process to help remove carbon.

Less memorable with fewer mentions is that ...

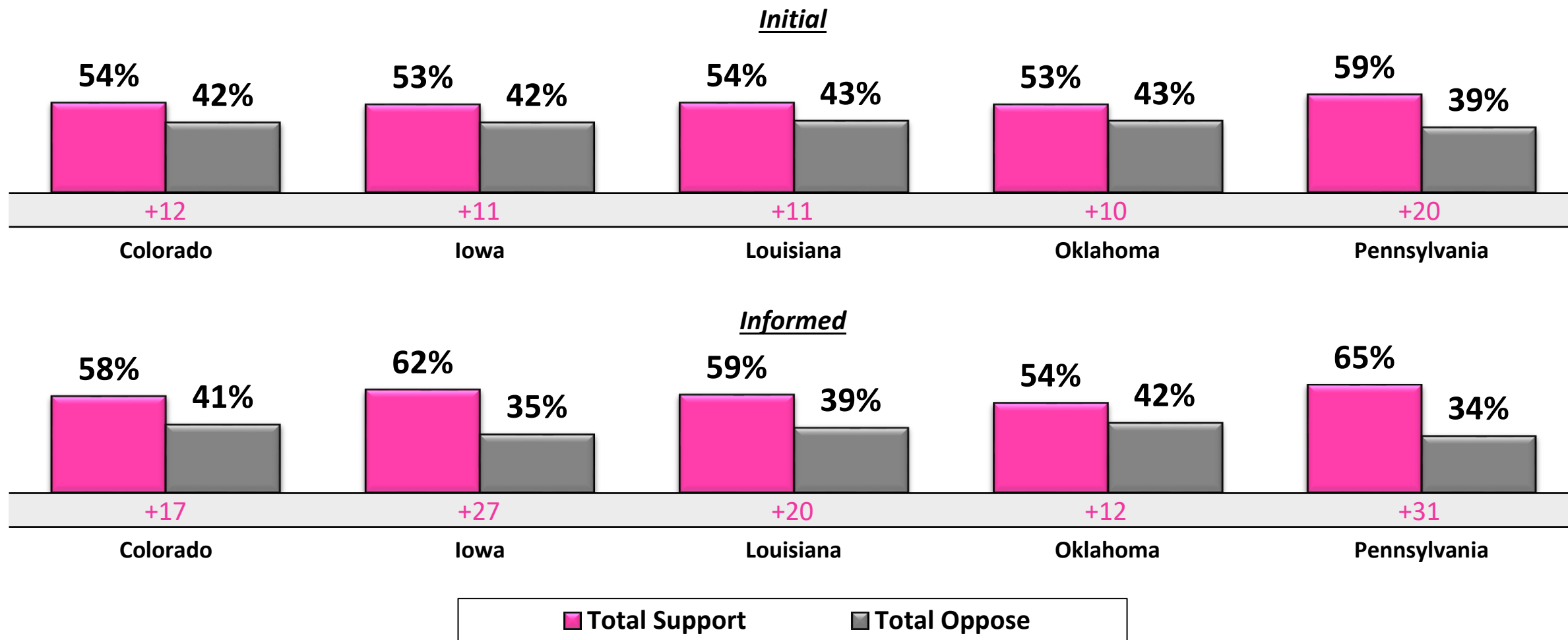
- Carbon capture maintains jobs in key industries;
- It helps the transition to clean energy;
- It can be more cost-effective than switching to new plants/energy sources; and
- The benefits for disadvantaged communities/equity message.

Thinking about these statements, what specifically stood out? In other words, what do you think you would be most likely to remember one week from today?



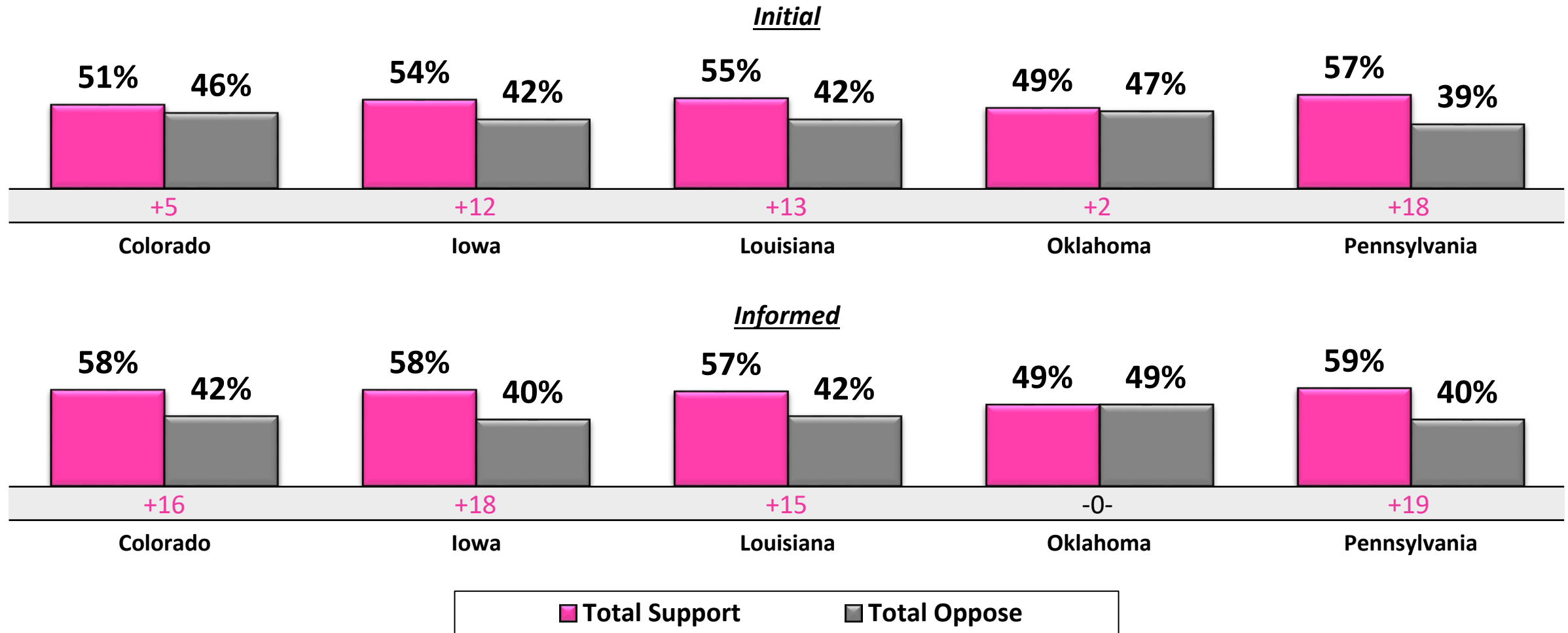
The Impact of More Information

Support for tax incentives increases in all five states.



Would you support or oppose tax incentives to encourage private companies to invest in this technology to capture carbon dioxide emissions?

Government financing also gets a smaller bump in most states. In Oklahoma, it remains a tough sell even after messaging.



Would you support or oppose the U.S. government helping to provide the financing for constructing carbon capture infrastructure to ensure the ability for companies of all sizes to more cost effectively capture and store carbon dioxide emissions?



The Bottom Line

The Bottom Line

- Carbon capture is not familiar to most voters, and they have lots of questions about it. Generally across the five states, voters are more inclined to say carbon capture sounds like a good idea than a bad idea, although many say they do have some concerns and questions still.
- Despite not being all that familiar, a majority support tax incentives to capture carbon and government financing of the infrastructure to store carbon emissions. Party – and related demographics – tend to be the most predictive of support for these actions.
- Despite varying views of the economies of their respective states, the vast majority see creating and sustaining jobs in industry as a greater priority than the environmental aspects of the process, no matter how those are phrased. Economic concerns do not end up translating to a greater priority on jobs, nor in greater support for carbon capture. However, jobs messages tend to resonate most strongly and are more apt to cut across party lines.
- Voters across these states like the concept of “reusing” carbon in other industrial processes, and simply the language around reuse as well.

The Bottom Line

- Overall, most voters recognize climate change is happening, although there is a wide gap in how high a priority this should be. The fact that many voters understand capturing carbon has something to do with climate change translates into greater support for carbon capture among Democrats. They respond better to all of the messages, but particularly to one saying we need to act to address climate change (“something is happening” message).
- Notably, views do shift slightly toward greater support for actions to help implement carbon capture, but the overall dynamics do not shift. It will be important to ensure that more conservative voters in these states hear messaging from trusted /politically aligned voices.



Lori Weigel
Principal

lori@newbridgestrategy.com

Karoline McGrail
Insights Analyst

karoline@newbridgestrategy.com