

UNIVERSITY OF ARIZONA  
STANFORD UNIVERSITY  
SURVEY CONDUCTED BY ABT SRBI  
NOV 18 – DEC 9, 2014

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Arizona's views on

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# CLIMATE CHANGE

*Executive summary*



## *Executive summary*

# Introduction

Arizonans have long dealt with high temperatures and limited water resources, and climate change may increase the magnitudes of these challenges by causing increases in heat and the severity and frequency of droughts.

Understanding how the public views climate issues is of considerable interest to a wide range of people, including policy makers, resource managers, health officials, researchers, educators, and others. Although many national surveys have described climate change attitudes, these studies have interviewed only small samples of Arizona residents and have yet to explore in depth the views of state residents.

Do Arizonans think the climate is changing, and if so, how? What do they think should be done, if anything, and who do they think should respond? How do views on climate change vary among residents of Arizona depending on their age, gender, political affiliation, or ethnicity?

This report summarizes the results of a survey of public opinion that was commissioned by the University of Arizona and Stanford University to provide a better understanding of how the Arizona public views this issue. For the University of Arizona, the results can better guide our land-grant mission of serving the state and its residents through our research, teaching, and outreach.

## Method

The survey was conducted by the independent research company Abt SRBI. A representative sample of 803 adult (age 18 and older) residents was interviewed between November 18 and December 9, 2014, by telephone—443 on landlines and 360 on cell phones—in English and Spanish. The results were weighted to match the Arizona adult population in terms of demographics such as gender, ethnicity, age, education, and region. Every effort was made to avoid bias in the ways questions were asked.

All frequency estimates for the state of Arizona as a whole and for its subpopulations were computed using the tabulation function of the survey package in the statistical software STATA, from raw data collected by Abt SRBI. Sampling weights were provided by Abt SRBI and applied in the analysis.

Tests for statistically significant differences among various demographic subgroups within Arizona were based on F-test statistics, using two-way tabulation in the survey package in STATA. Sampling weights were applied. Clusters were defined by interviewers.

## Rounding

For tabulation purposes, percentage points were rounded to the nearest whole number. As a result, percentages for a given category in a question may total slightly higher or lower than 100%.

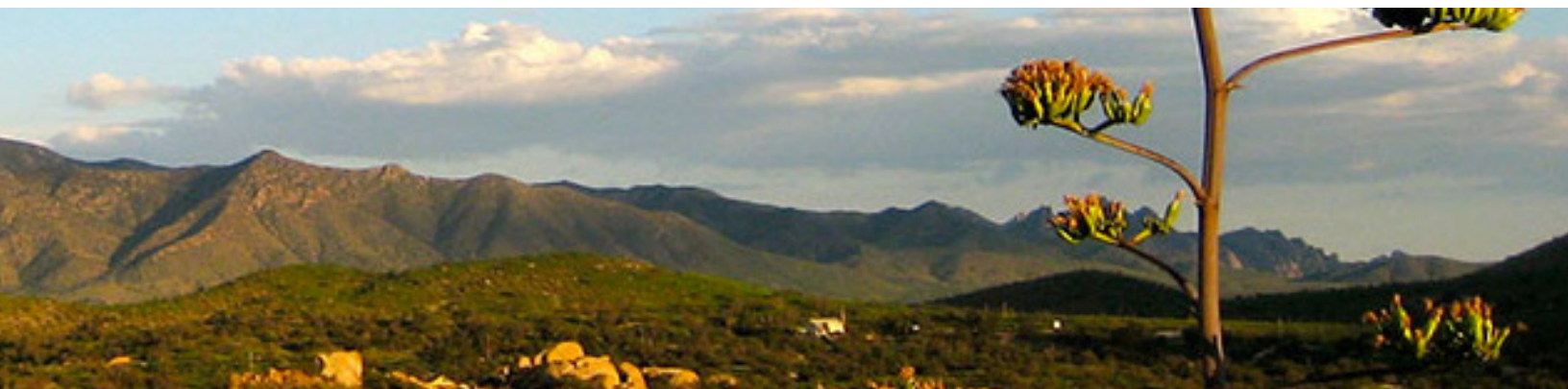
## Summary of Key Findings

The results of the survey provide valuable insight into Arizonans' views on climate change. This section summarizes the major findings; more detailed results, including statistical data, are outlined in the Selected Results section of the Executive Summary.



## *Summary of Key Findings (Continued)*

- » A large majority of Arizona residents believe that the world's temperature has been rising (74%), that it is at least partly caused by human activity (78%), and that it will continue to rise if nothing is done to stop it (75%). More than half believe global warming has caused more droughts and storms around the world as well as more forest fires and heatwaves in Arizona.
- » Three-quarters of people surveyed believe global warming will be a serious problem for Arizona, the U.S., and the world and that it will hurt future generations if nothing is done to reduce it in the future. Sixty-nine percent believe that an Arizona temperature increase of 5 degrees F 75 years from now would be bad. Seventy percent also believe that more days exceeding 100 degrees F in Phoenix would be bad. Most people (72%) said it would be hard to adjust to the changes global warming may bring about in the next 100 years.
- » More than 70% believe that the U.S. and Arizona governments should take action on global warming and should limit the amount of greenhouse gases emitted by businesses. Sixty percent of Arizonans favor a national cap and trade program; 52% favor the federal government requiring a fee for greenhouse gases companies emit. More than 70% favor laws or tax breaks that would encourage renewable energy and more efficient cars, appliances, and buildings. Most respondents believe making electricity from sunlight (88%), wind (81%), and naturally flowing water (82%) are good ideas; 24% believe electricity from coal is a good idea.
- » More people believe that federal or state action to prepare for or reduce the effects of global warming would help the Arizona economy than the proportion who believes government action would hurt the state economy or have no effect. More people believe that federal action to prepare for the effects of global warming would help the U.S. economy than the proportion who believes government action would hurt the U.S. economy or have no effect.
- » Generally, Arizonans' views on global warming are not significantly different from those of the U.S. as a whole. Responses to some questions indicate that Arizonans are more concerned that the impacts of climate change will hurt them personally (43% Arizona compared to 34% U.S.).
- » More women in Arizona than men believe federal and state government should take action to prepare for the effects of global warming and that doing so would help the economy.
- » Hispanics are more concerned about the impacts of global warming than white or other groups. A greater percentage of Hispanics want the government to limit emissions and implement policies such as cap and trade and regulation for energy efficiency.
- » A greater percentage of younger people (under 35) are concerned about the impacts of a warming world than people over 35. Younger adults are also more likely to favor government action to reduce emissions and are more favorably inclined toward cap and trade, and tax breaks for renewables and efficiency. Almost all young adults (97%) support government laws or tax incentives to reduce power plant emissions.
- » In Arizona, more Democrats and independents than Republicans believe that the planet's temperature has been increasing, and that government should address it through such measures as cap and trade, greenhouse gas fees, regulation, and tax breaks. Fifty-nine percent of Republicans believe that the world has been warming, that this will be a serious problem for the nation (57%) and state (60%), and that the U.S. and Arizona governments should limit greenhouse gas emissions (59%). Forty-six percent of Republicans support cap and trade, and more Republicans than Democrats and independents believe that action on global warming would hurt the economy.



# Selected Results

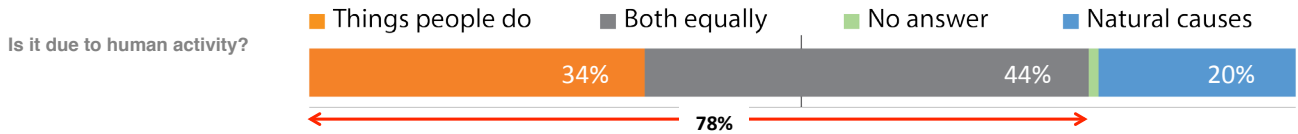
This section includes specific survey results on a select number of questions that are grouped here according to general topic.

## Do Arizonans believe that global warming has been happening?

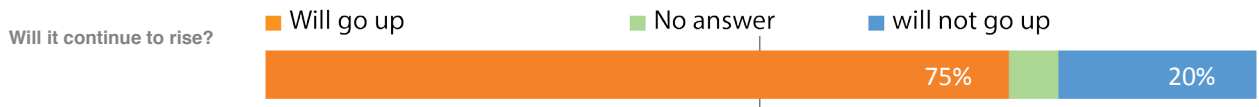
- » 74% of Arizonans believe that the world’s temperature has been going up slowly over the last 100 years; 23% believe that this probably has not been happening.



- » A majority believe there have been more droughts (65%) and storms (58%) globally, as well as more heatwaves with days with average temperatures above 100 degrees F (65%) in Arizona as a result of global warming. Fifty-five percent of Arizonans believe that there have been more Arizona forest fires as a result of global warming.
- » 78% believe that the increase in the world’s temperature over the last 100 years was caused partly or mostly by things people did; 20% said the temperature rise was due mostly to natural causes.

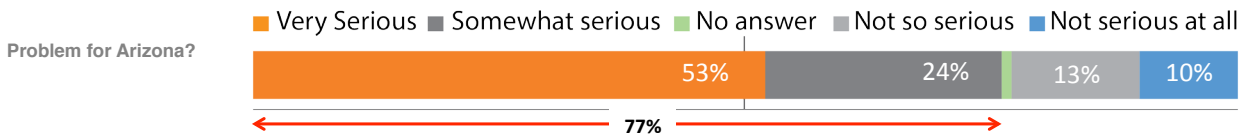


- » 75% believe that if nothing is done to stop it, the world’s temperature probably will go up over the next 100 years; 20% believe it probably will not go up.

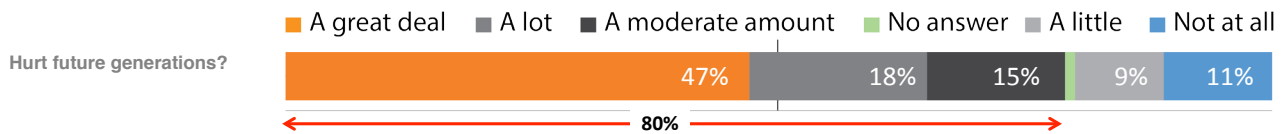


## What do Arizonans believe about the impacts of global warming?

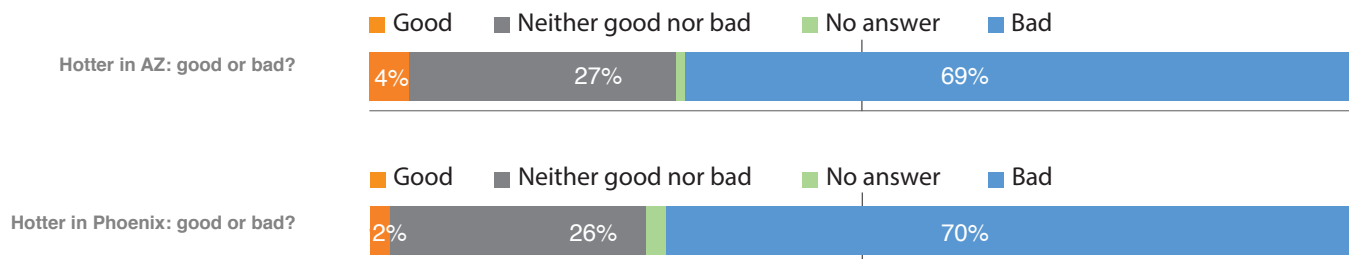
- » More than three-quarters believe that if nothing is done to reduce global warming, this will be a serious problem for the U.S. (77%), the world (82%), and Arizona (77%).



- » 65% believe that if nothing is done to reduce global warming in the future, it will hurt them personally and will hurt future generations (80%).



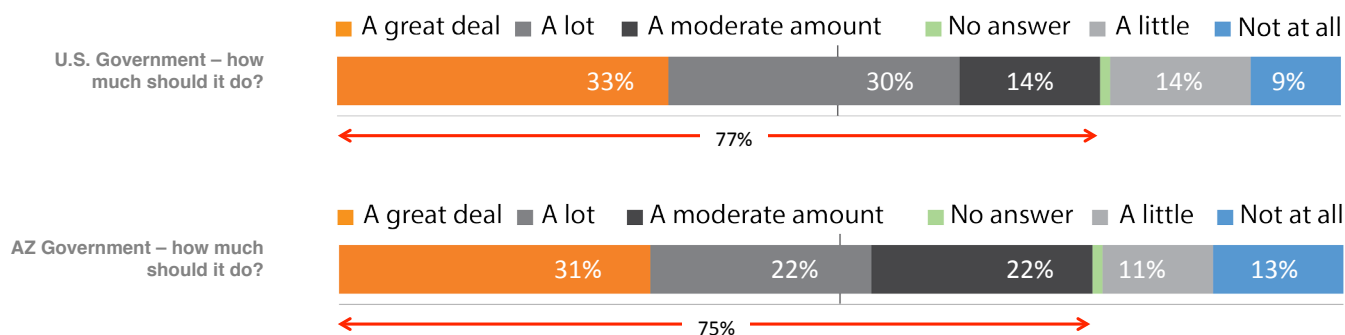
» 69% believe it would be bad if Arizona is 5 degrees F warmer in 75 years than it is now, 4% believe it would be good, and the remainder believes it would be neither good nor bad. Seventy percent of respondents believe the effects of 30 more days of temperatures above 100 degrees F in Phoenix in 75 years would be bad.



» 42% believe that it would be extremely or very hard to adjust to the changes brought about by global warming, 41% believe it would be moderately or slightly hard, and 16% believe it would not be hard at all.

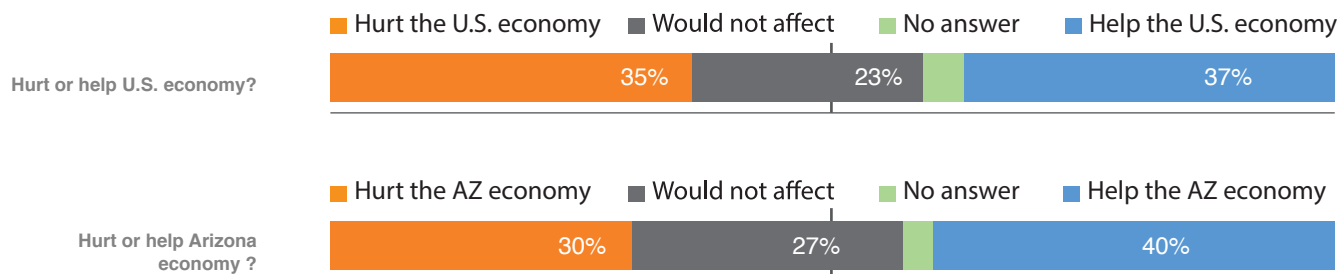
### Do Arizonans want the government, business, and average people to do anything about global warming or not?

» 77% believe that the U.S. government should do a great deal, a lot, or a moderate amount about global warming; 75% believe the Arizona government should do a great deal, a lot, or a moderate amount to reduce future global warming. 69% believe that the U.S. should act on global warming even if other countries such as China and India do less than the U.S.; 15% believe the U.S. should act only if other countries do and 14% believe the federal government should not take action at all.

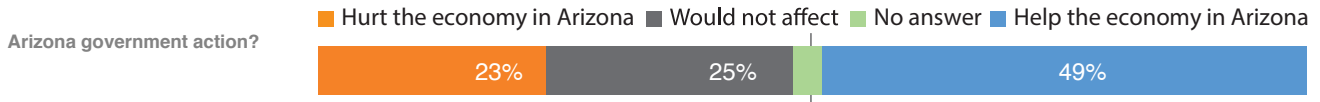


» Depending on question wording, a majority of respondents believe that businesses (75–82%) and average people (76–81%) should do a great deal, quite a bit/a lot, or some/a moderate amount about global warming.

» 37% believe U.S. action to reduce global warming would help the U.S. economy, and 35% believe it would hurt it. Forty percent believe U.S. action would help the Arizona economy; 30% said it would hurt it.

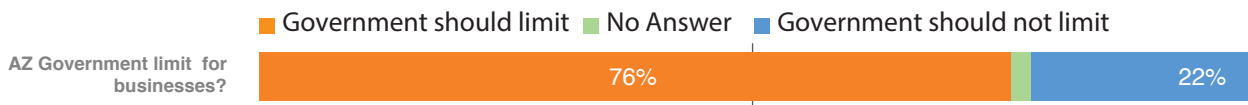
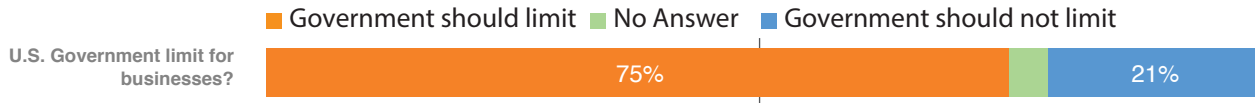


» 49% percent believe that Arizona government action to reduce global warming would help the Arizona economy; 23% believe it would hurt. The remainder believes that action would neither hurt nor help the U.S. and Arizona economies.

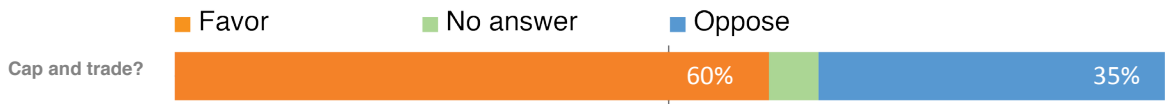


### What are Arizonans' views on strategies to limit greenhouse gas emissions?

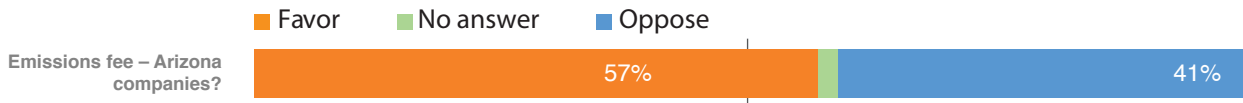
» Three-quarters of those surveyed believe the federal (75%) and state government (76%) should limit the amount of greenhouse gases put out by businesses. Fewer than one-quarter (21% and 22%, respectively) believe they should not.



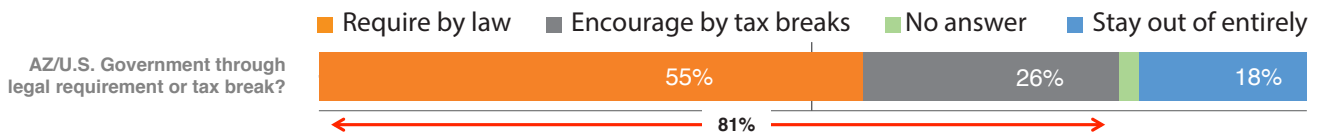
» 60% of respondents favor cap and trade; 35% oppose it.



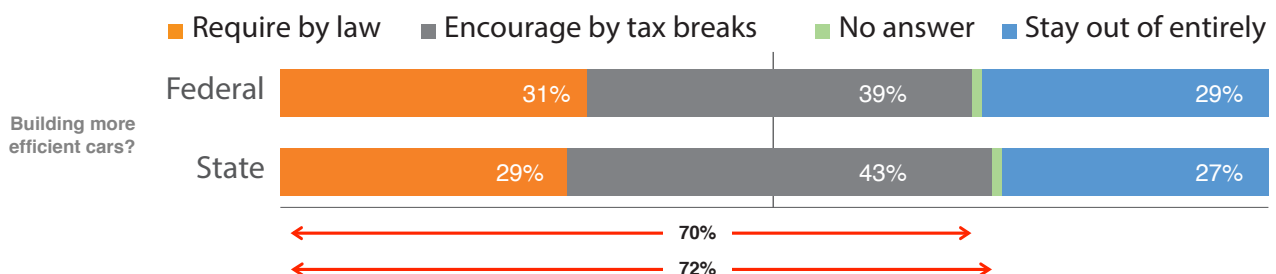
» 52% favor charging a federal fee to companies for their greenhouse gas emissions, and 45% oppose it. Fifty-seven percent favor a state fee on emissions by Arizona companies; 41% oppose it.

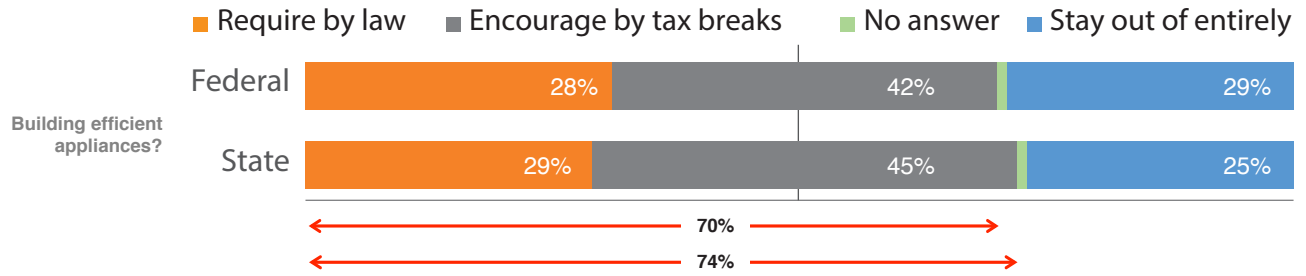


» 81% believe the government should lower the amount of greenhouse gases that power plants are allowed to release into the air, through a legal requirement or a tax break.

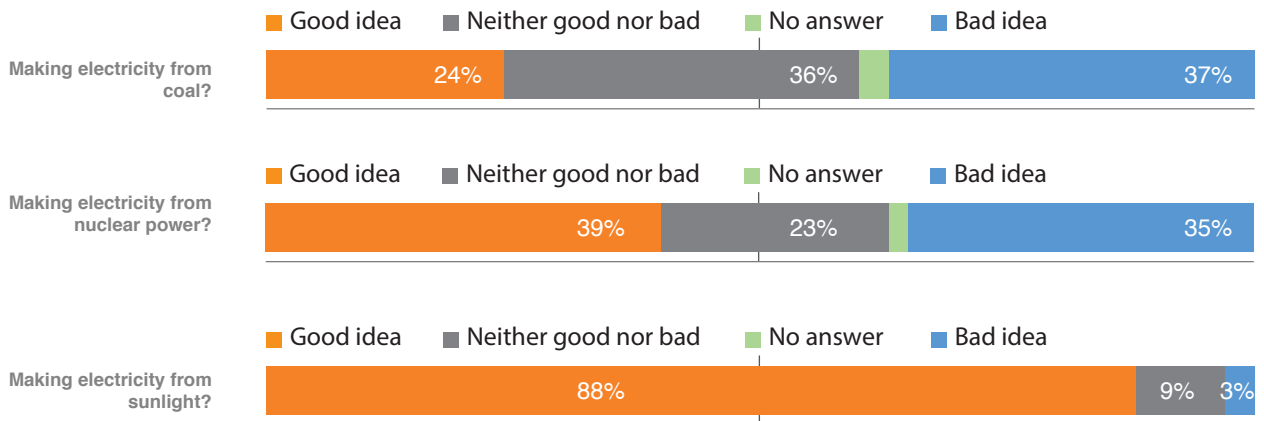


» A majority favor government tax breaks for renewable energy (78%). Thirty-nine percent favor tax breaks for nuclear power; 57% do not. A majority favor laws or tax breaks by federal or state governments for more efficient cars (70% federal, 72% state), appliances (70% federal, 74% state), and buildings (72% federal, 74% state). Fifty-nine percent favor government laws or tax breaks for building electric vehicles.





» In terms of energy choices, 24% believe that making electricity from coal is a good idea, 50% believe that using natural gas is a good idea, 39% believe that electricity from nuclear power is a good idea, and 88% believe that making electricity from sunlight is a good idea. Eighty-two percent believe making electricity from naturally flowing water is good, and 81% believe that wind power is a good idea.



## Comparative Analysis

### Arizona compared to the U.S.

Because the survey mostly asked questions that have been asked in recent surveys of the U.S. population—most recently in January 2015 by Stanford University, The New York Times, and Resources for the Future—we are able to compare the responses of Arizonans to those of the U.S. as a whole.

The Arizona survey is distinctive because the state’s demography is somewhat different from the nation. According to Current Population Survey (CPS) 2014, the over-18 population of Arizona was 33% Hispanic and 5% Native American, compared to 15% Hispanic and 1% Native America for the U.S.

Arizonans’ views differ significantly from those of the nation on a few questions. More Arizonans believe that the world’s temperature has been going up (74% compared to 69% for the nation). More Arizonans believe that no action to address global warming will hurt them personally a great deal or a lot (43% compared to 34% U.S.). More Arizonans (65%) believe that global warming has caused there to be more droughts than the nation (54%).

Fifty-two percent of Arizonans, compared to 61% U.S, favor a federal government requirement for companies to pay a tax for each ton of greenhouse gases they put out; 45% of Arizonans oppose it, compared to 35% U.S.

### Differences within Arizona

#### Men and Women

Male and female Arizonans are generally quite similar in their beliefs on global warming; however, there are exceptions. More women (75%) than men (64%) believe that the U.S. government should take action on global warming even if other major industrial countries do not and favor tax breaks for renewable energy production (82% women, 74% men).

Women are more likely to believe that federal action to prepare for the effects of global warming would help (48% women, 38% men) rather than hurt (23% women, 28% men) the U.S. economy. Women are also more likely than men to believe that U.S. action to prepare for the effects of global warming would help (48% women, 39% men) rather than hurt (20% women, 29% men) the economy in Arizona. Similarly, more women believe that action by the Arizona government on global warming would help (51% women, 42% men) rather than hurt (16% women, 25% men) Arizona's economy. Women (64%) are also significantly more likely than men (52%) to believe that global warming has caused more storms.

## **Ethnicity**

On a majority of questions, Hispanics in Arizona are more likely than non-Hispanic White or other groups to believe global warming will be a serious problem and that the government should take action. Our sample did not contain sufficient numbers of some ethnic groups to distinguish statistically significant differences for each individual race and ethnic group. Thus, we have categorized all non-White and non-Hispanic groups as Other, and we report on statistically significant differences for Hispanic compared to non-Hispanic White and Other.

More than 87% of Hispanics believe that global warming will be very or somewhat serious for the U.S. and for the world, compared to 71% White and 72% Other. More Hispanics believe that inaction on global warming would hurt them personally a great deal, a lot, or a moderate amount (84% compared to 52% White and 60% Other) and would hurt future generations a great deal, a lot, or a moderate amount (91% of Hispanics compared to 73% White and 78% Other). More Hispanics also believe that global warming has caused more droughts (88% compared to 52% White and 62% Other).

The majority of Hispanics believe that the federal (80%) government should take action on global warming even if other industrial countries do less. Hispanic respondents are more likely to believe that the federal and state governments should limit emissions (for federal: 85% Hispanic compared to 70% White and 71% Other; for state: 90% Hispanic compared to 69% for both White and Other). Hispanics are more likely to favor cap and trade (69% compared to 57% of White and 53% of Other).

Hispanic respondents believe that Arizona government actions to reduce future warming would help the economy (59% compared to 44% for White and 41% Other). Fifty percent of Hispanic respondents (compared to 38% for White and 45% for Other) believe that U.S. action to prepare for the effects of global warming (rather than action to reduce future warming) would help the national economy, whereas 60% of Hispanic respondents (compared to 41% White and 35% Other) believe that Arizona government actions to prepare for the effects of global warming would help the Arizona economy.

## **Age**

On several questions, the survey revealed significant differences in views between those over and under 35. People under 35 are more likely to believe that global warming will be a very or somewhat serious problem for the U.S. (86% compared to 73% for the over-35 population), the world (94% compared to 76% over 35), and Arizona (87% compared to 73% over 35). Those under 35 are more likely to think that, if nothing is done to reduce global warming in the future, it will hurt them personally a great deal or a lot (52% compared to 40% over 35) and it will hurt future generations a great deal or a lot (77% compared to 60% over 35). Those under 35 are more likely to say global warming has caused more droughts (76% compared to 61% over 35), more storms (66% compared to 55% over 35), and more heatwaves (78% compared to 61% over 35) in Arizona.

People under 35 are more likely than others to want the U.S. government to take action to reduce future global warming even if other countries do less (82% compared to 64%). A smaller proportion of under 35s are concerned that action by the U.S. government to address global warming would hurt the national economy (23%, 40% of those over 35). Those under 35 favor cap and trade (67% compared to 57% of those over 35) and a state carbon tax (67% compared to 54% of over 35s). Also, they are more inclined to support tax breaks for renewables (90%, compared to 73% of those over 35) and are more likely to support laws and tax breaks for efficiency and for reducing emissions. Three percent of those under 35 believe the government should not restrict power plant emissions.

## **Political Affiliation**

Some significant differences in opinion were found based on political affiliation, but there was more agreement across parties than expected. Democrats and independents are more likely to believe the Earth's temperature has been going up over the last century (82% and 76%) than Republicans. Nevertheless, a majority of Arizona Republicans believe the world is warming (59%).



Seventy-seven percent of Arizona Democrats and 68% of Arizona independents believe that global warming has caused more droughts compared to 42% of Republicans. Seventy-one percent of Democrats, 57% of independents, and 29% of Republicans believe global warming has caused more forest fires in Arizona. Similarly, 85% of Democrats, 66% of independents, and 41% of Republicans believe global warming has caused more heatwaves.

Democrats and independents are more likely than Republicans to believe that global warming will be a very serious or somewhat serious problem for the U.S. (86% and 80% compared with 57% Republicans). Sixty percent of Republicans believe that global warming will be a very serious or somewhat serious problem for Arizona, compared to 89% of Democrats and 78% of independents.

Fifty-nine percent of Republicans, 91% of Democrats, and 75% of independents believe that the federal government should limit greenhouse gas emissions from U.S. businesses; they express similar views about whether the Arizona government should limit greenhouse gas emissions from Arizona businesses. Forty-six percent of Republicans, 72% of Democrats, and 60% of independents favor cap and trade. In addition, 39% of Republicans, 66% of Democrats, and 51% of independents favor a federally imposed fee on greenhouse gas emissions, while 44%, 70%, and 57%, respectively, favor a state-imposed fee.

The survey revealed clear party affiliation differences in response to questions about whether federal and state government actions to reduce future warming would help or hurt the Arizona economy. Fifty-six percent of Democrats and 39% of independents believe that U.S. government action to reduce future warming would help the Arizona economy (18% and 28% said it would hurt), whereas 50% of Republicans believe it would hurt the economy (23% said that it would help). Forty-one percent of Republicans believe that Arizona government actions to reduce future warming would hurt the Arizona economy (32% said it would help); 63% of Democrats and 49% of independents believe that Arizona government actions would help the Arizona economy (9% and 22% said it would hurt).



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