

American Public Opinion on Climate Change and Opinions in Arizona

Jon A. Krosnick
Stanford University

Funded by

Woods Institute for the Environment at Stanford University

ABC News

Time Magazine

The Washington Post

The Associated Press

Reuters

National Science Foundation

New Scientist Magazine

MassINC Polling Group

U.S. Environmental Protection Agency

National Oceanic and Atmospheric Administration

Ohio State University

Electric Power Research Institute

with Resources for the Future

Why no action?

November, 2010

“The number of Americans who agree the earth is warming because of man-made activity has been in free fall.”

Bloomberg Businessweek

February, 2011

“Why don’t Americans
believe in global
warming?”

The Economist

2012

“The public has caught on
and believes the global
warming issue is dead.”

Senator James Inhofe

National Surveys

- 1997 thru 2012
- Representative samples of American adults.
- Interviewed by telephone.
- Unbiased, balanced questions.

The Fundamentals

Has warming been happening?

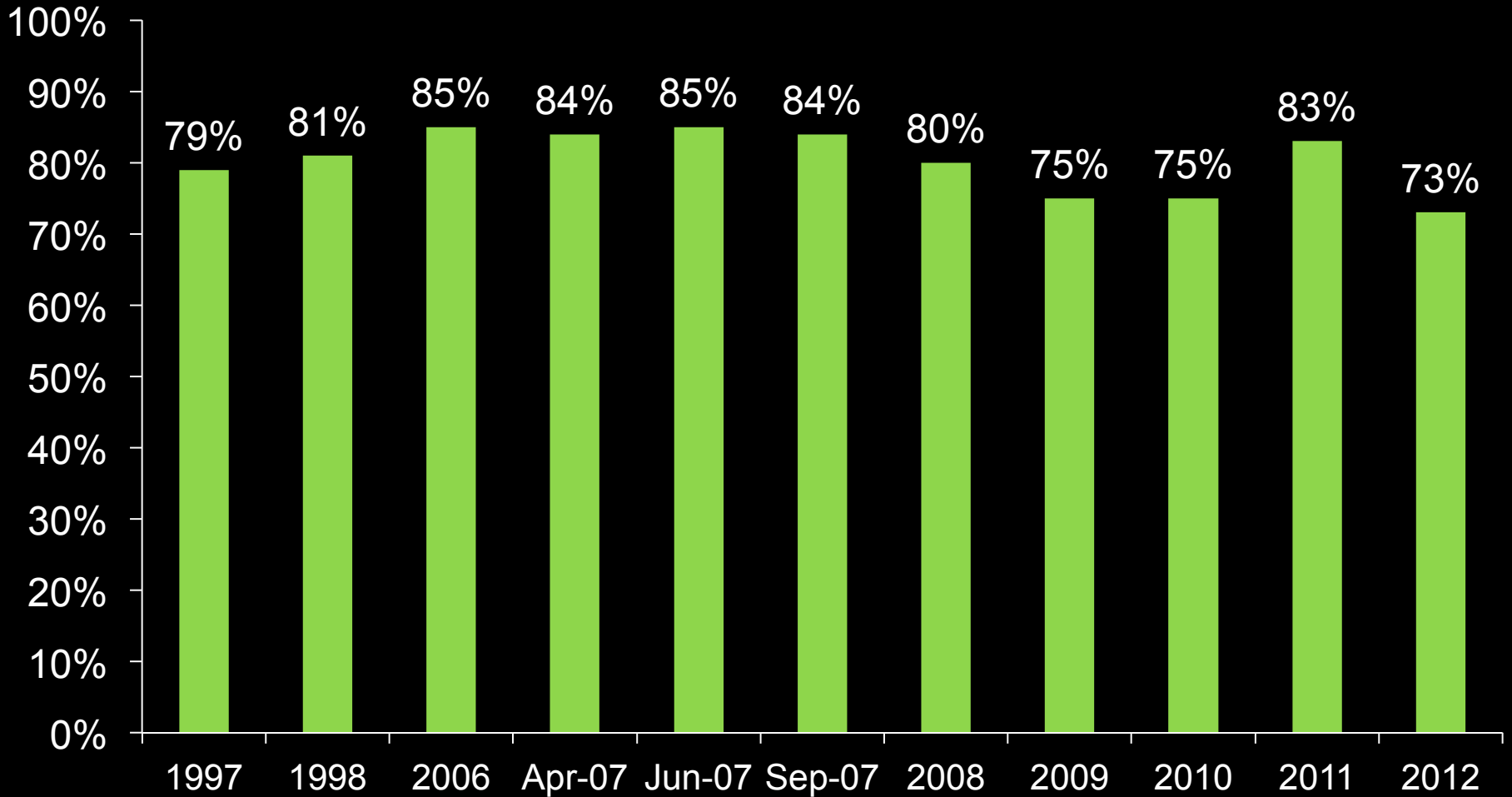
Has it been caused by humans?

Is it a threat?

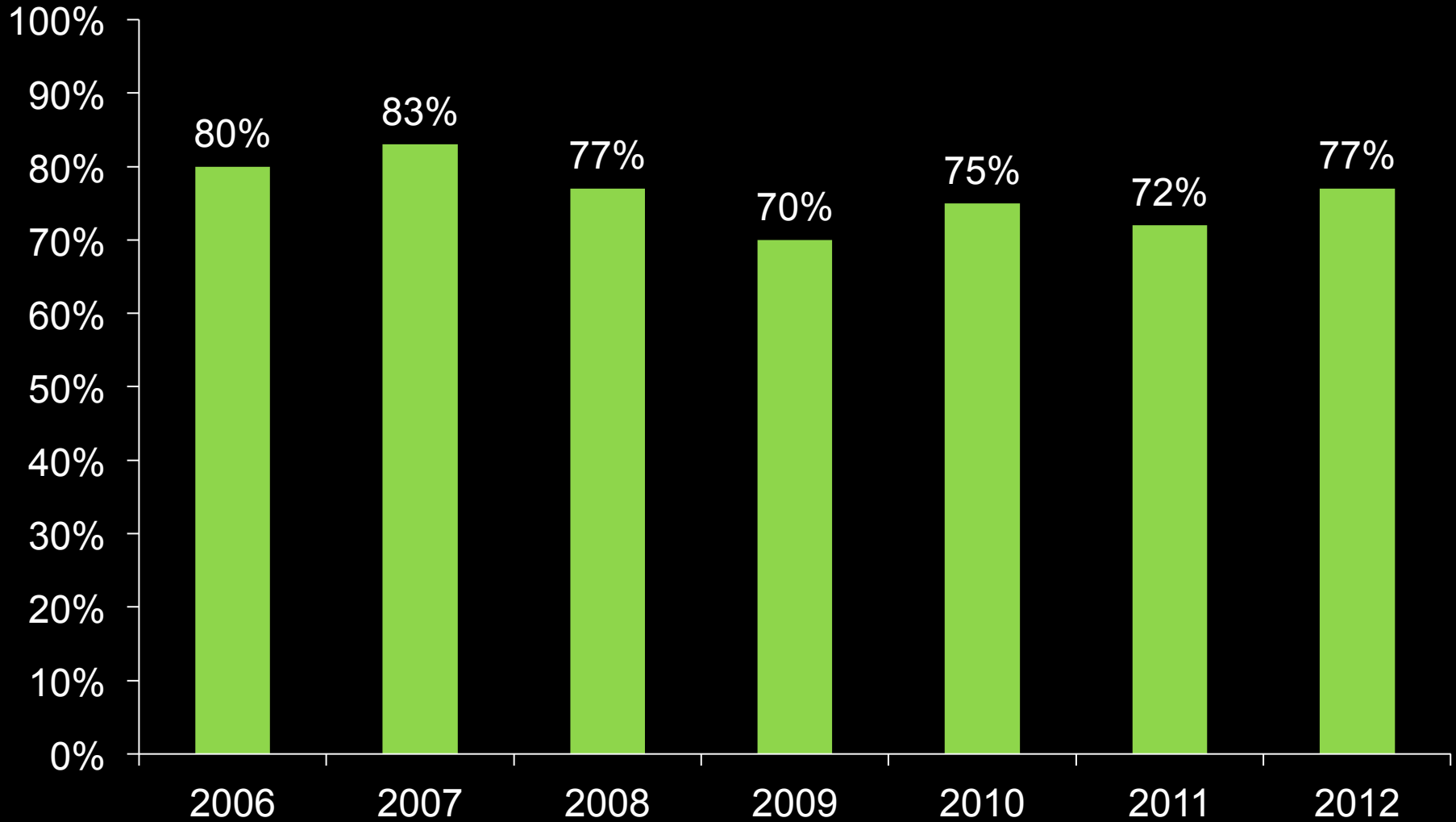
Our Question

"You may have heard about the idea that the world's temperature may have been going up slowly over the past 100 years. What is your personal opinion on this? Do you think this has probably been happening, or do you think it probably has not been happening?"

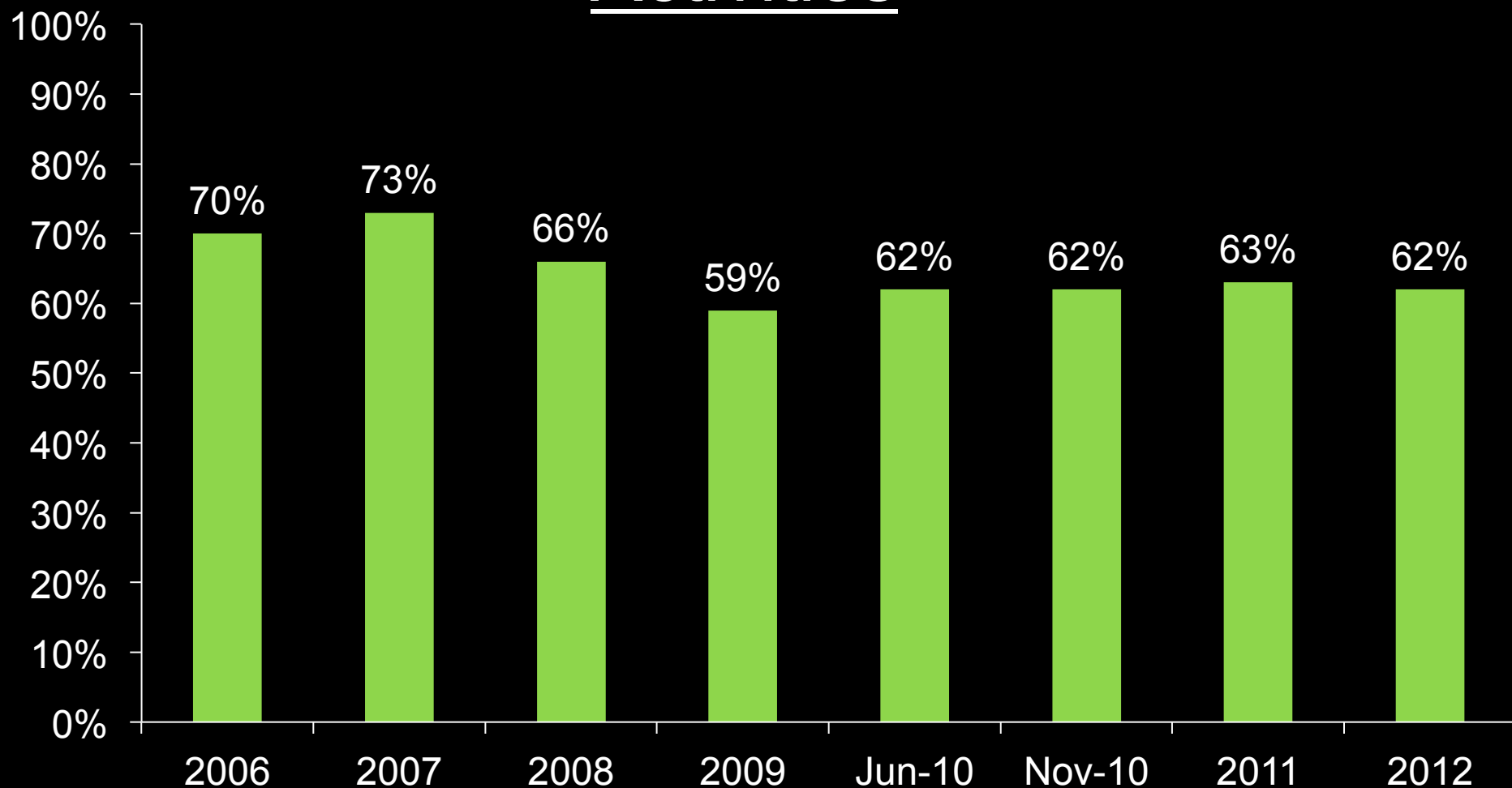
Has Global Warming Been Happening?



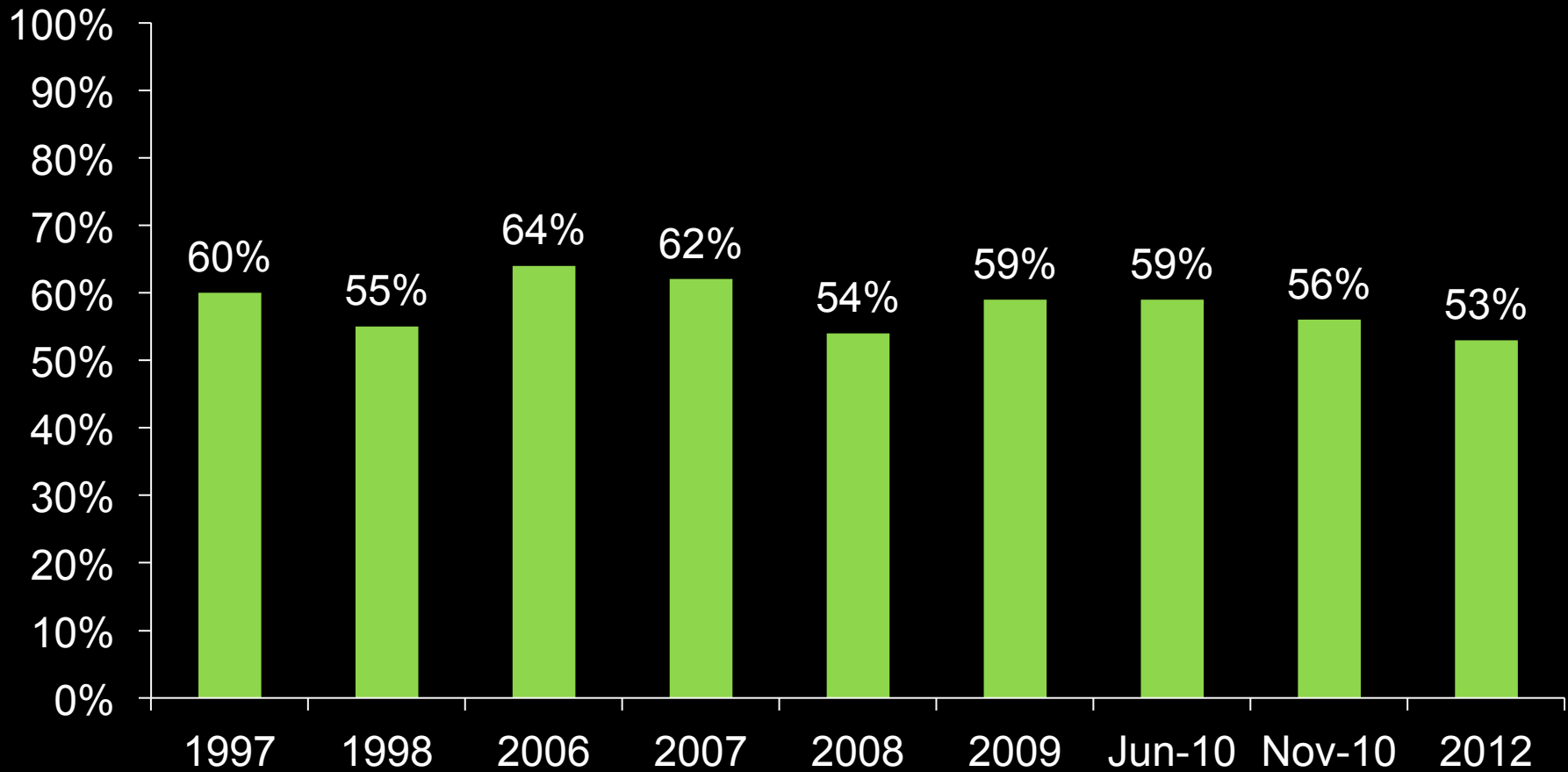
Human Action Has Been Causing Warming



Global Warming Has Been Happening and Has Been Caused by Human Activities

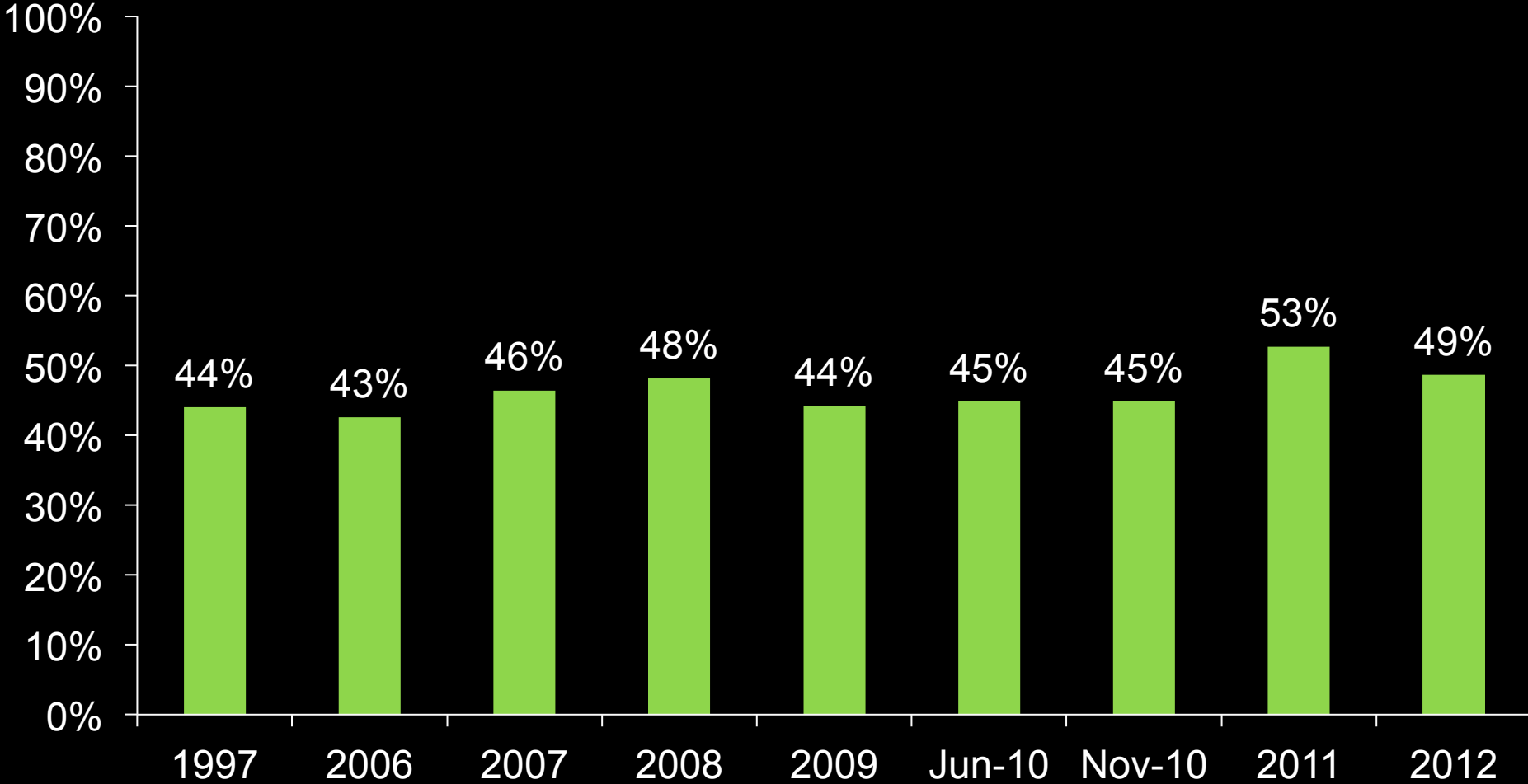


5 Degrees in 75 Years Would be Bad

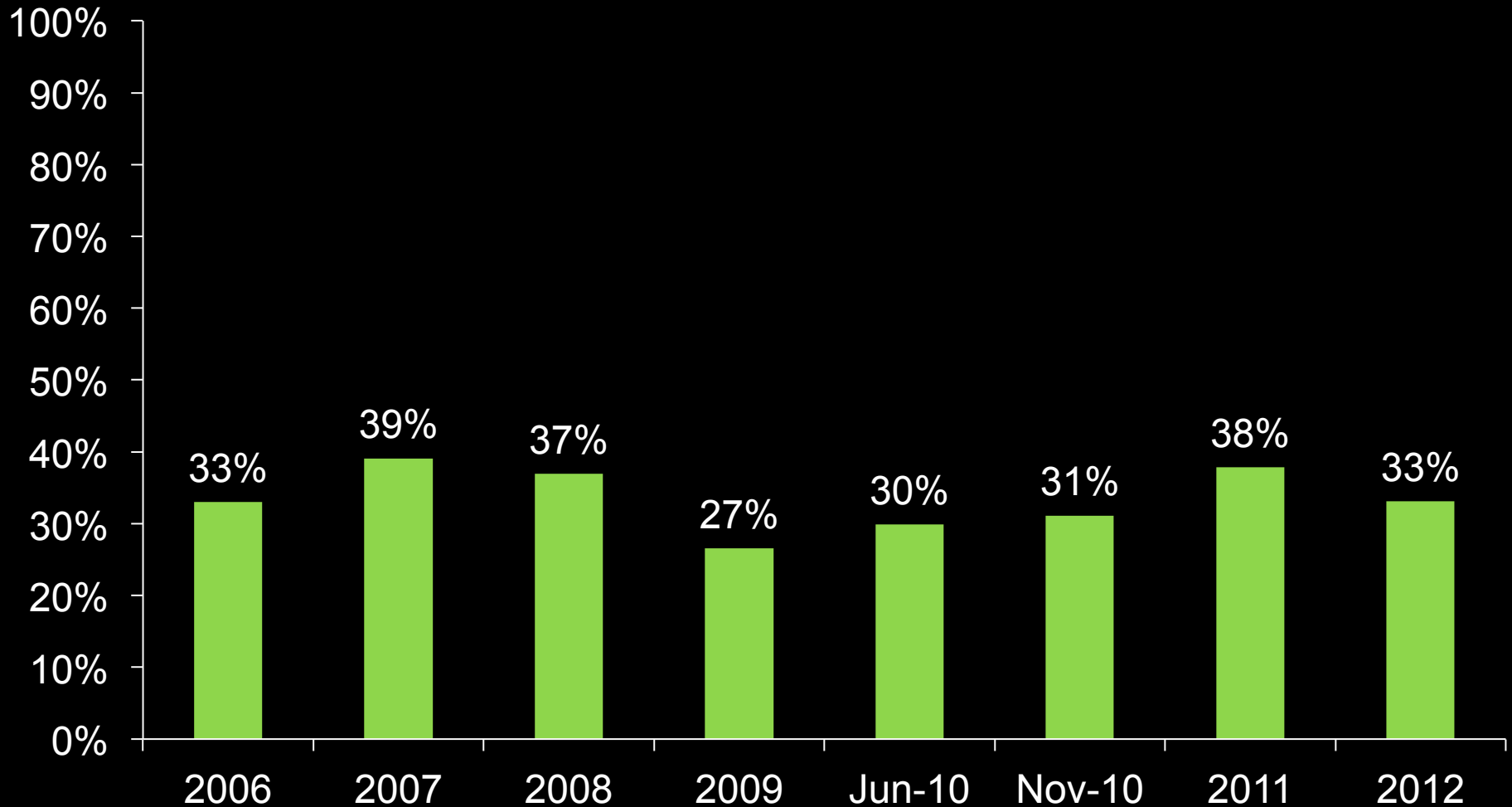


Certainty

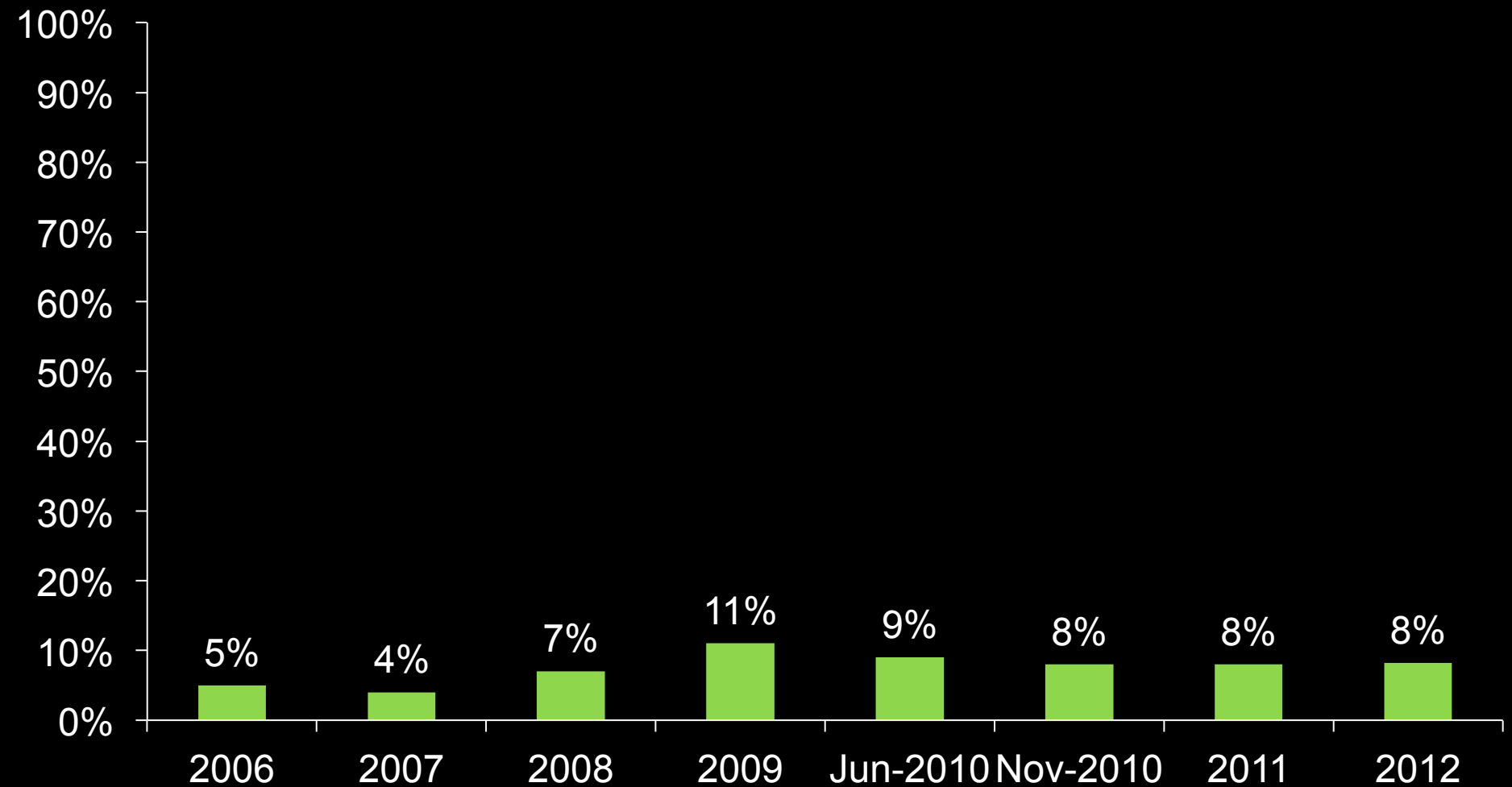
Extremely/Very Sure About Whether Global Warming Has Been Happening



Extremely/Very Sure That Global Warming Has Been Happening and Has Been Caused by Human Activities

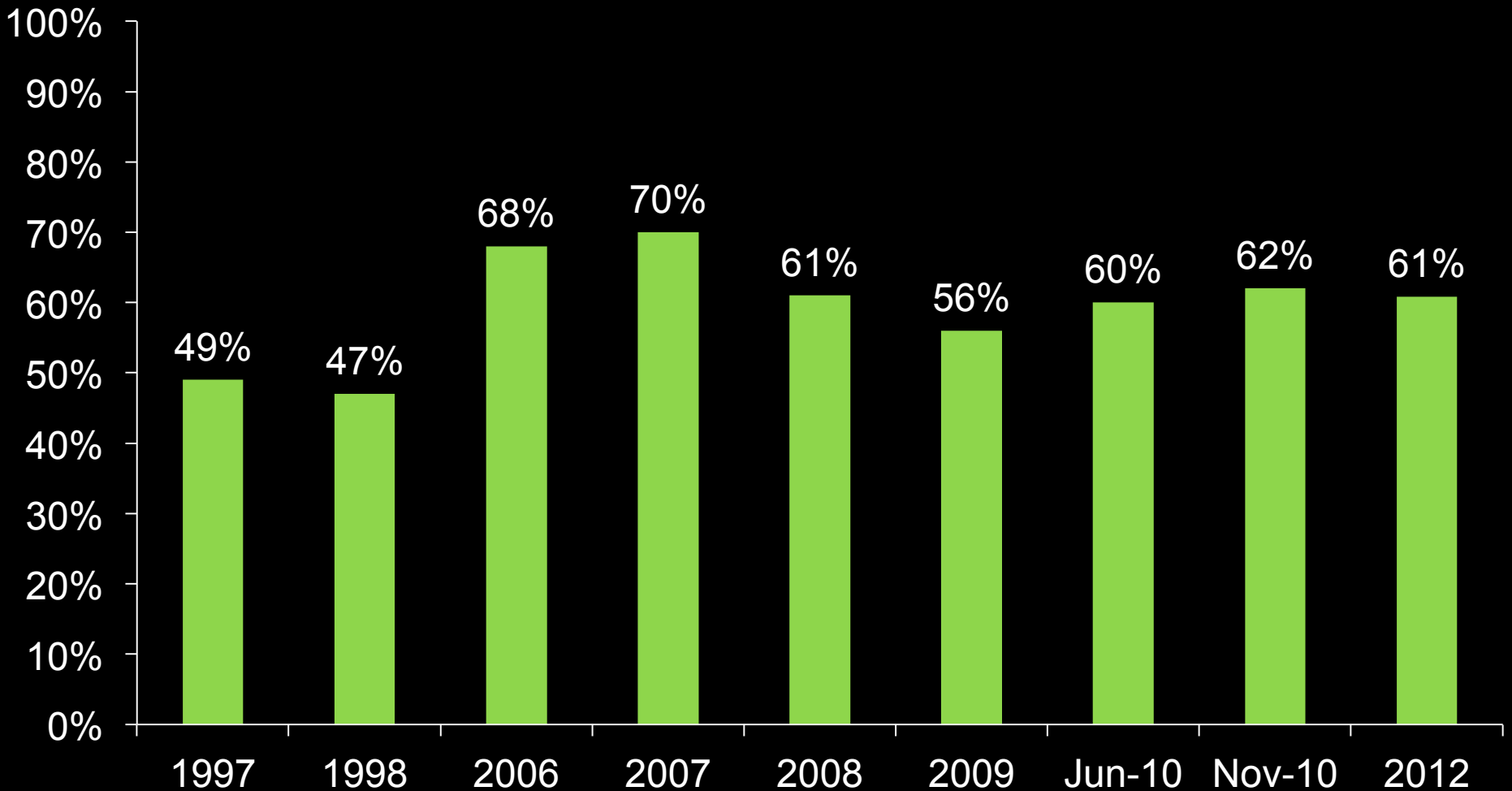


Percent of the Nation Who Are Extremely/Very Sure that Global Warming Has Not Been Happening



Does uncertainty impede
support for government
action?

The Federal Government Should Do More to Deal with Global Warming

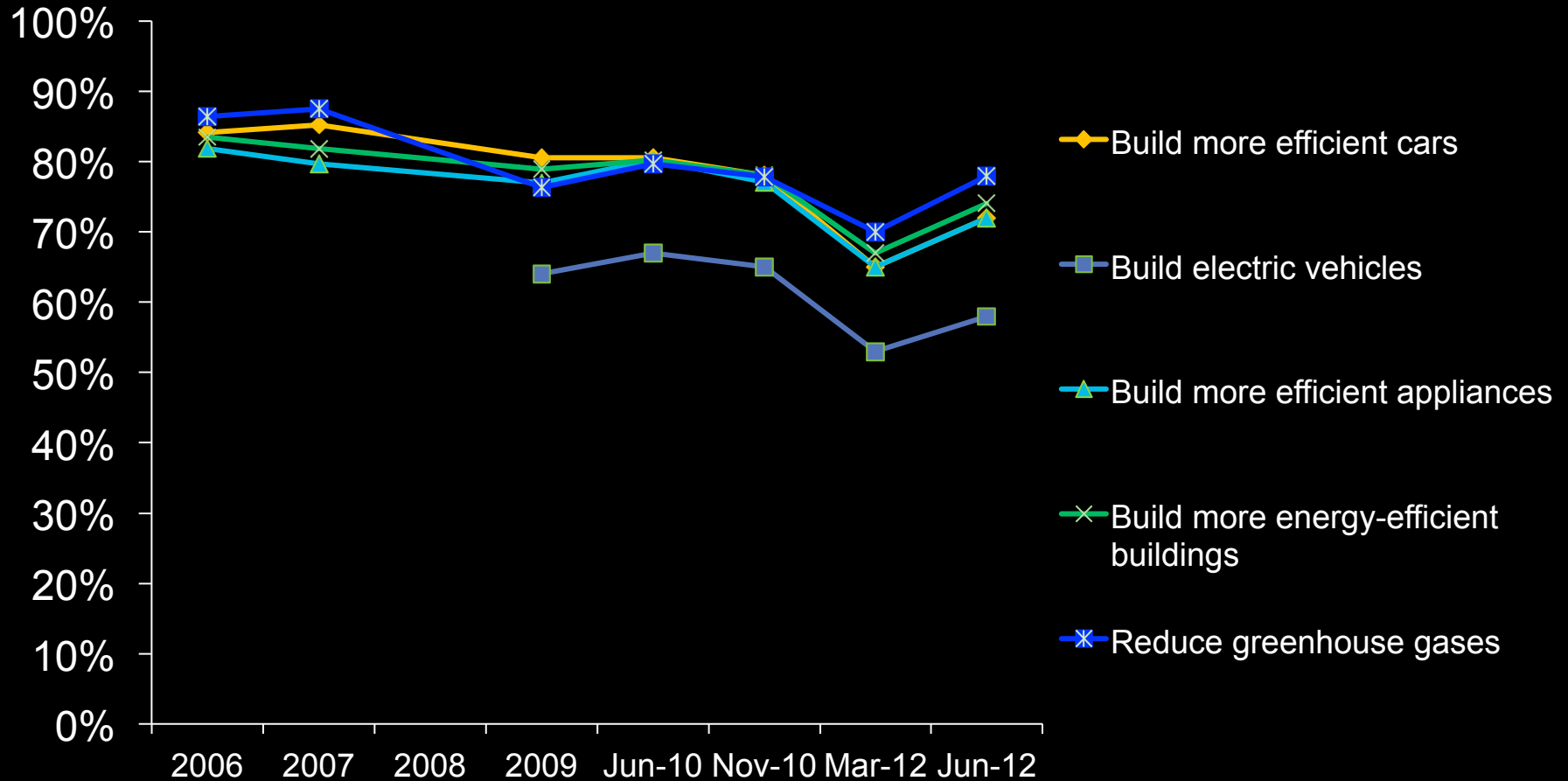


Limit GHG Emissions by Businesses

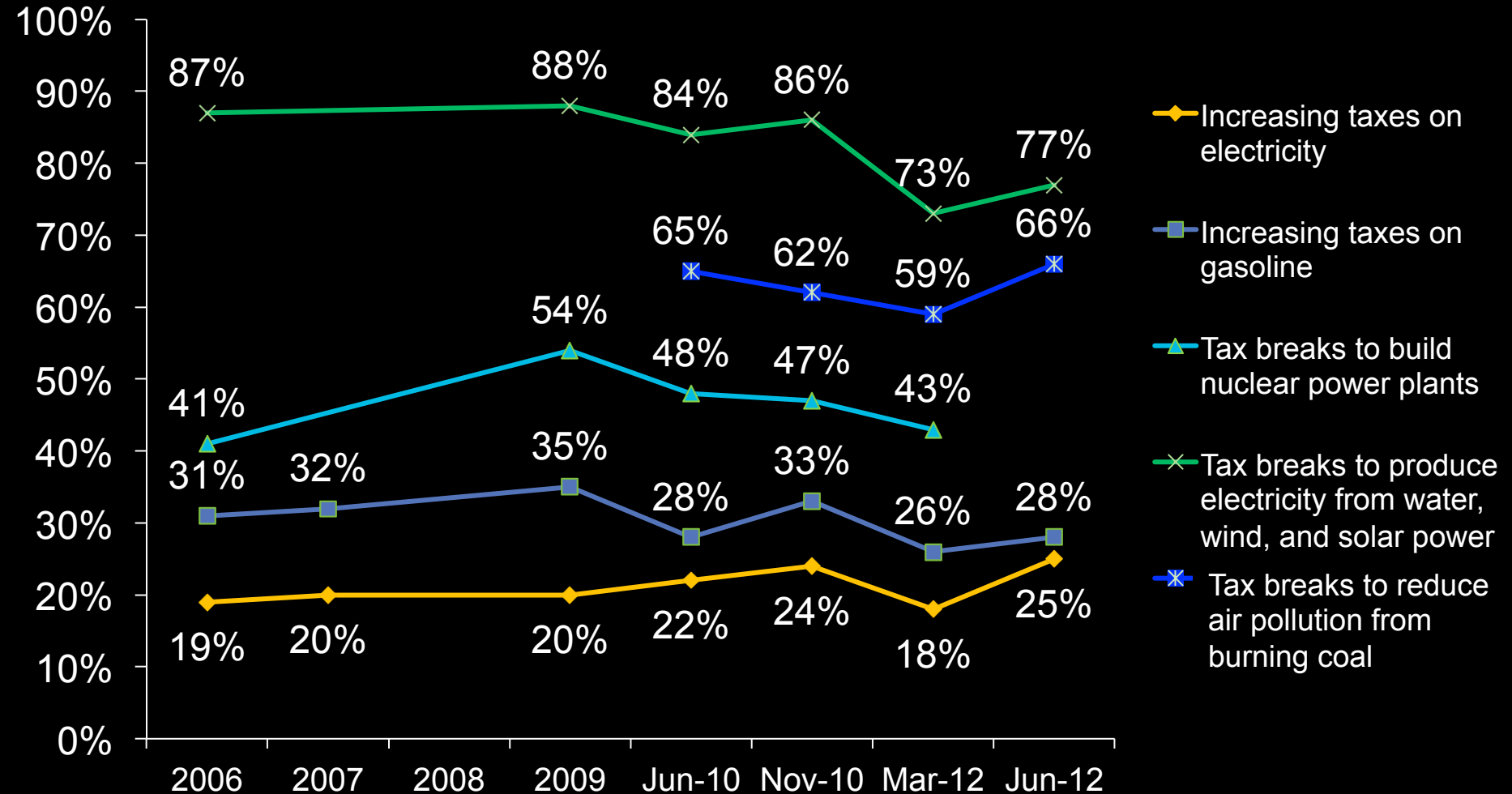
“Some people believe that the United States government should limit the amount of greenhouse gasses thought to cause global warming that U.S. businesses can produce. Other people believe that the government should not limit the amount of greenhouse gasses that U.S. businesses put out. What about you? Do you think the government should or should not limit the amount of greenhouse gasses that U.S. businesses put out?”

76% should

Government Should Require Businesses or Encourage with Tax Breaks



Tax Incentives



Energy Sources

Require power companies to make at least 20% of their electricity from water, wind, or solar power.

69% said government should

Carbon Sequestration

Offer tax breaks to companies that burn coal if they “use new methods to put the air pollution they generate into underground storage areas.”

70% favor

Cap and Trade

There's a proposed system called "cap and trade." The government would issue permits limiting the amount of greenhouse gases companies can put out. Companies that did not use all their permits could sell them to other companies. Companies that need more permits can buy them, or these companies can pay money to reduce the amount of greenhouse gases that other people or organizations put out. This will cause companies to figure out the cheapest way to reduce greenhouse gas emissions. Would you favor or oppose this system?

65% favor

Add: This type of permit system has worked successfully in the past to reduce the air pollution that companies put out. For example, in 1990, the federal government passed a law like this, called the Clean Air Act, which caused companies to put out a lot less of the air pollution that causes acid rain.

74% favor

Will government action be
painful?

Doing things to reduce global warming
would cause there to be fewer jobs

18%

Doing things to reduce global warming
would hurt the U.S. economy

20%

“Do you think the things people would have to do to stop global warming would make your own life better, worse, or neither better nor worse?”

Worse: 14%

Better: 43%

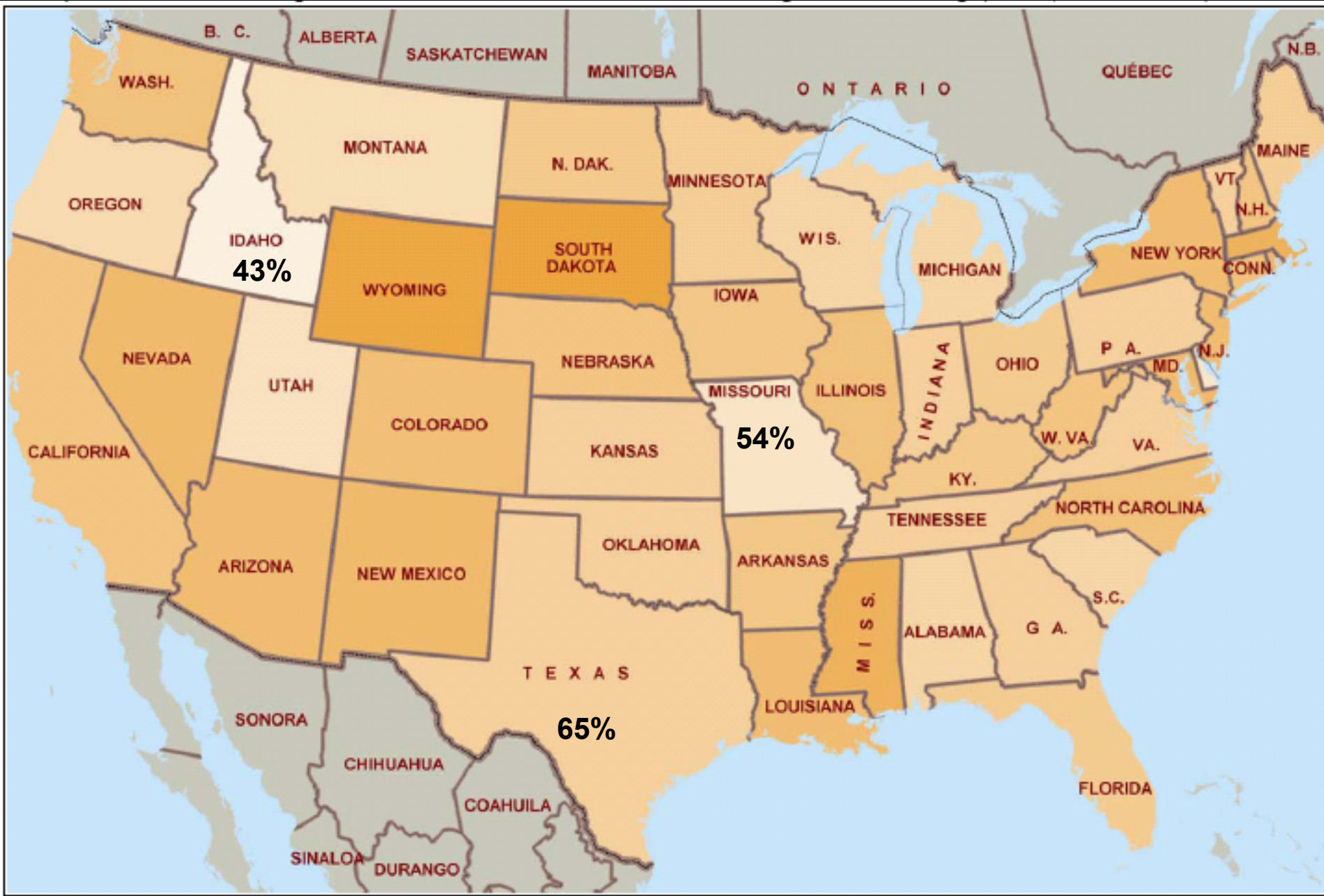
We're different!

Separate Results by State

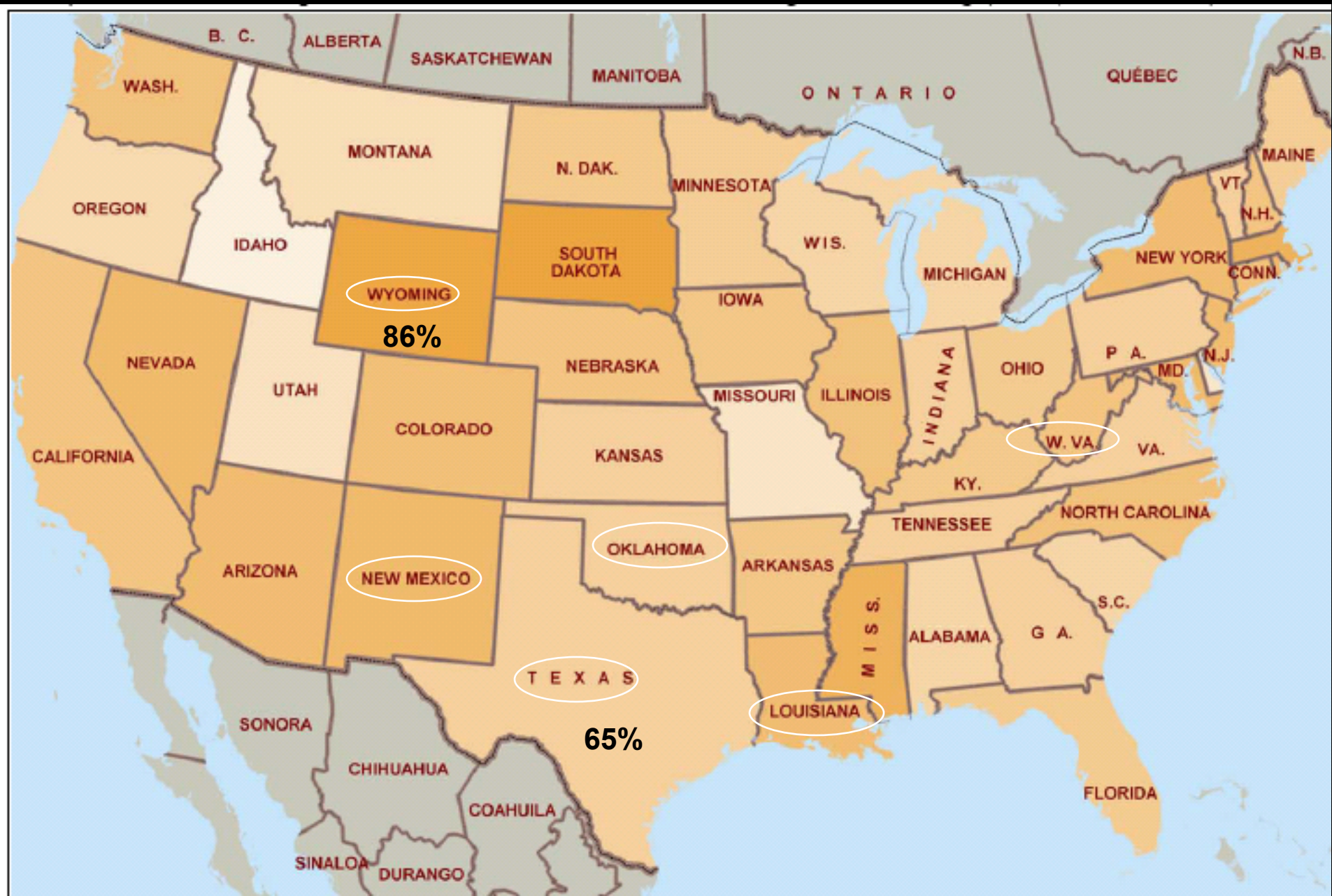
GW has been happening: 66% to 99%

Separate Results by State

GW has been happening 99%	66% to
Human caused 99%	64% to
Government should do more to 92%	43%

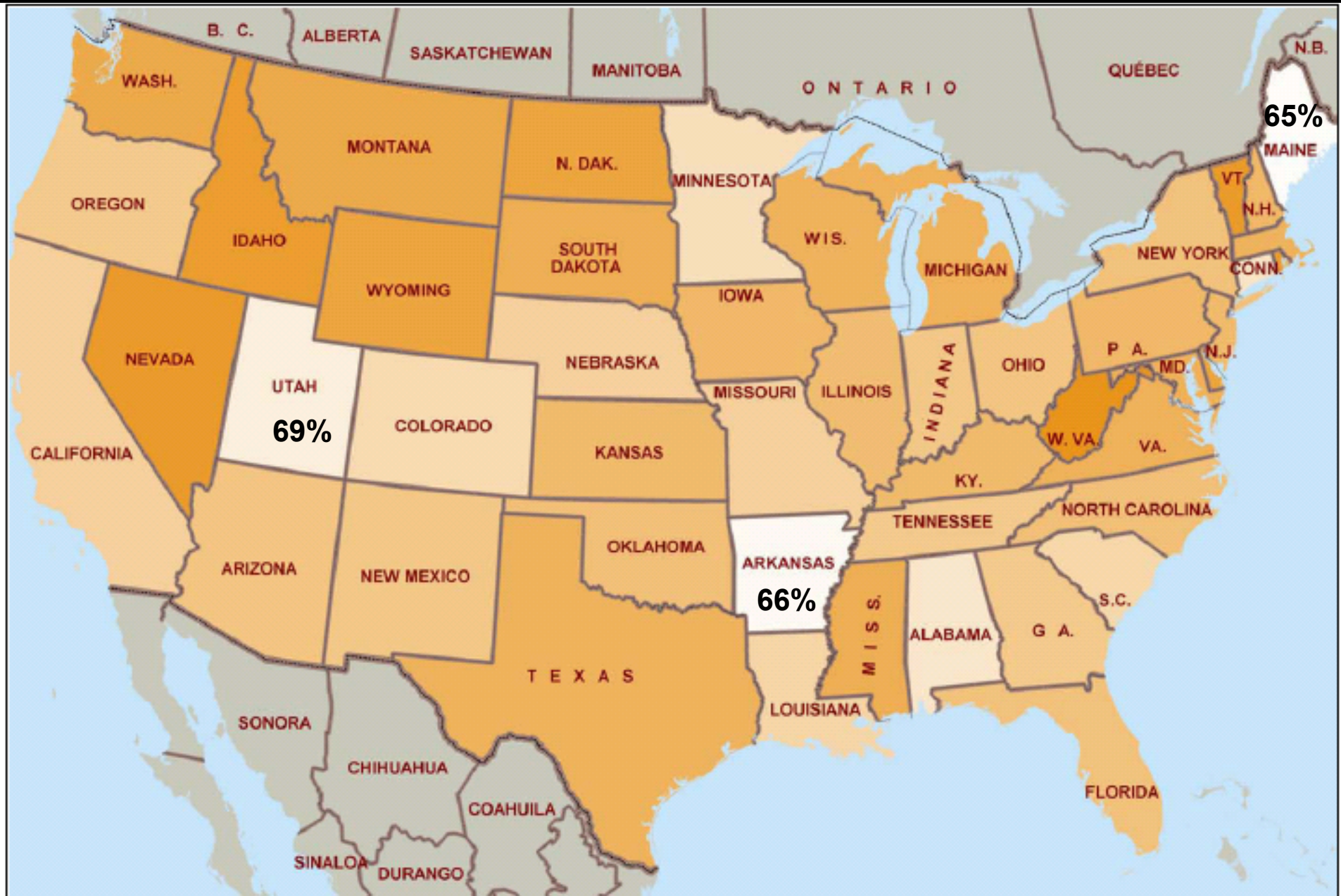


High Employment in Coal and Oil Industries



Separate Results by State

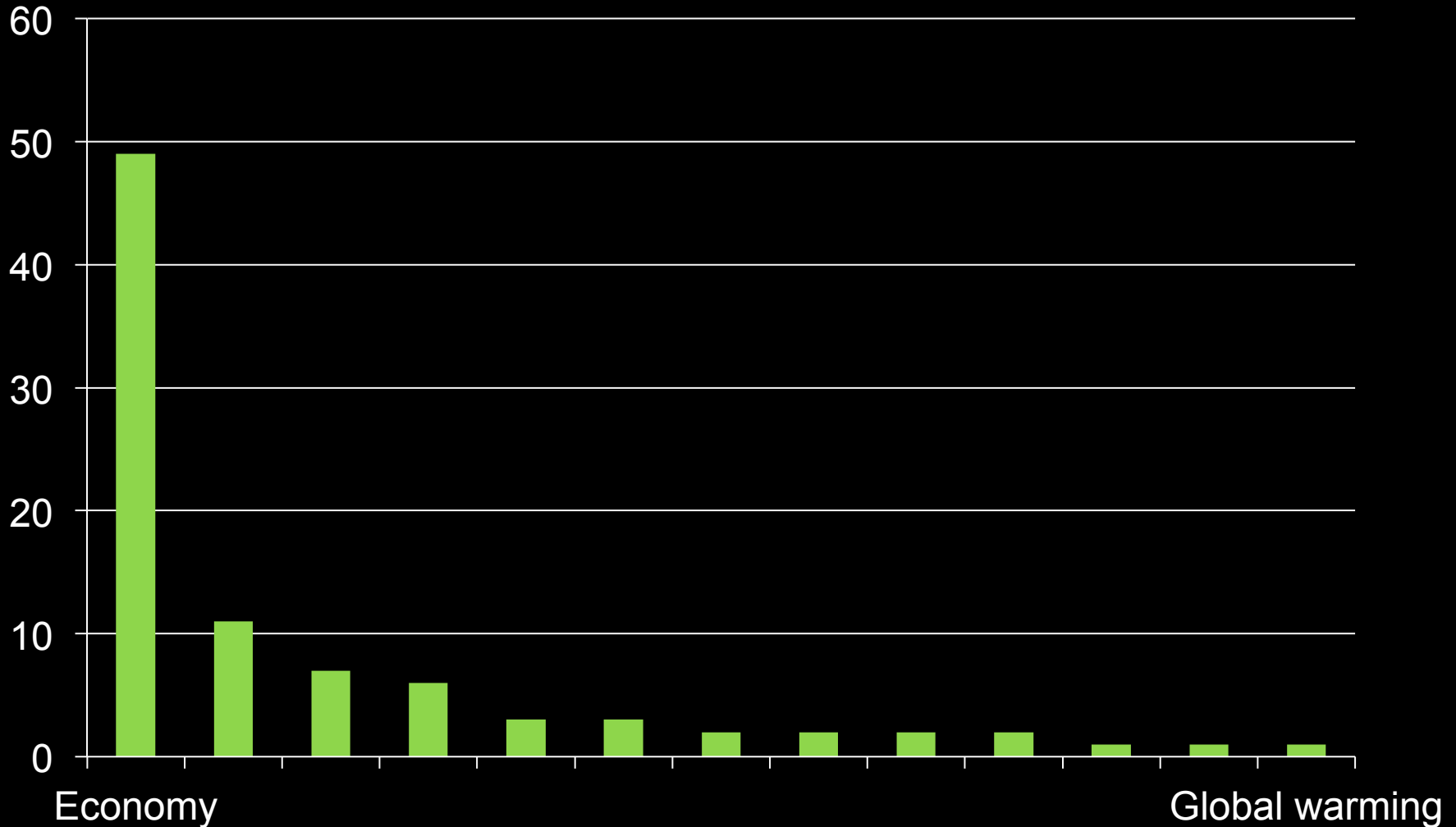
GW has been happening 99%	66% to
Human caused 99%	64% to
Government should do more to 92%	43%
Limit greenhouse gas emissions to 96%	65%



Not a priority?

What is the most important
problem facing this country
today?

What is the most important problem facing this country today?



What **will be** the most important problem facing **the world** in the future if nothing is done to stop it?

“How much effort do you think the federal government in Washington should put into dealing with the serious problems the world will face in the future if nothing is done to stop them? A great deal, a lot, a moderate amount, a little, or none?”

A great deal + a lot

“How much effort do you think the federal government in Washington should put into dealing with the serious problems the world will face in the future if nothing is done to stop them? A great deal, a lot, a moderate amount, a little, or none?”

A great deal + a lot
76%

Canadian Replication - 2011

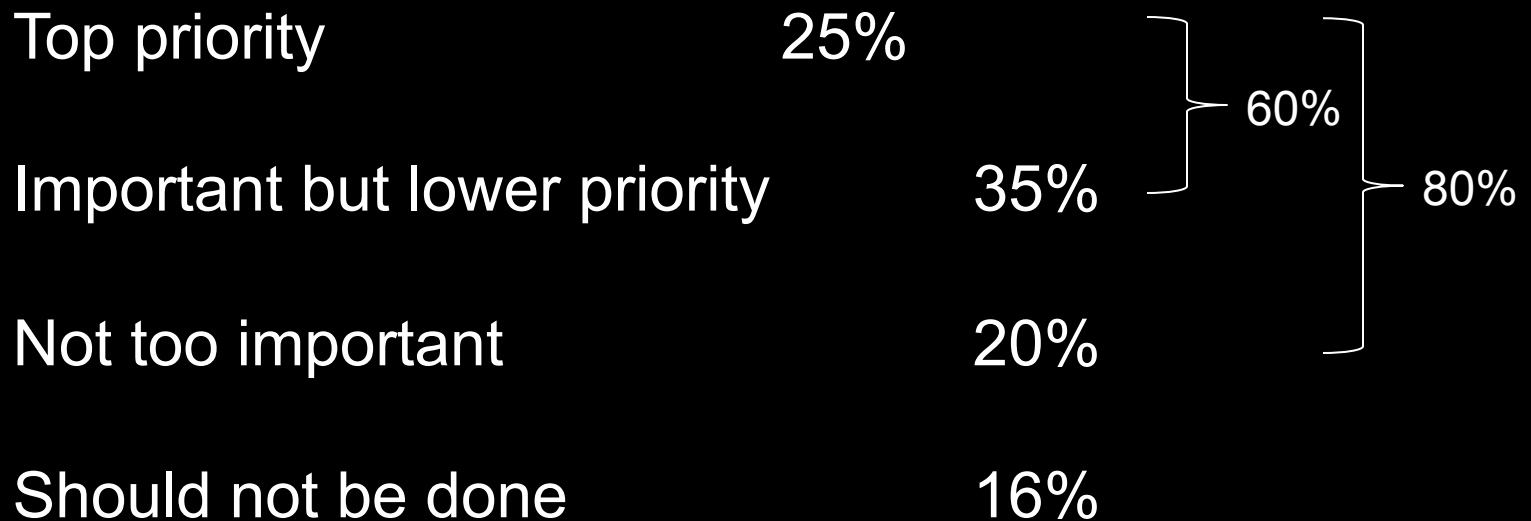
- In your opinion, what is the most important problem facing Canadians today?
- What do you think will be the most serious problem facing the world in the future if nothing is done to address it?
- Economy
 - MIP: 29%
 - World: 11%
- Environment/Global warming
 - MIP: 7%
 - World: 29%

Pew Research Center: Public Priorities

I'd like to ask you about priorities for President Obama and Congress this year. As I read from a list, tell me if you think each should be a top priority, important but lower priority, not too important, or should it not be done.
... Dealing with global warming.

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... Dealing with global warming.



People aren't willing to pay?

If the U.S. Congress were thinking of passing a law that would reduce the amount of air pollution that the country puts out by **85% by the year 2050** and if that would cost your household an extra **\$150 in taxes** every year on average, would you vote for this law or against it?”

\$150

58% in favor

If the U.S. Congress were thinking of passing a law that would reduce the amount of air pollution that the country puts out by **85% by the year 2050** and if that would cost your household an extra **\$75 in taxes** every year on average, would you vote for this law or against it?”

\$75

\$150 58% in favor

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\$150 58% in favor

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\$250

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\$75 66% in favor

\$150 58% in favor

\$250 41% in favor

Turnbull Willingness to Pay



(Downward Bias)

117 million households

At least \$17.7 billion dollars per
year

Willing to Pay for 85% reduction in GHG Emissions by 2050

<u>yr</u>	<u>\$100/yr</u>	<u>\$150/yr</u>	<u>\$200/yr</u>
Maine 48%		62%	54%
Massachusetts 54%		67%	57%
Florida 45%		61%	52%

People don't use the issue to
vote?

In fact ...

Headlines After the 2010 Election

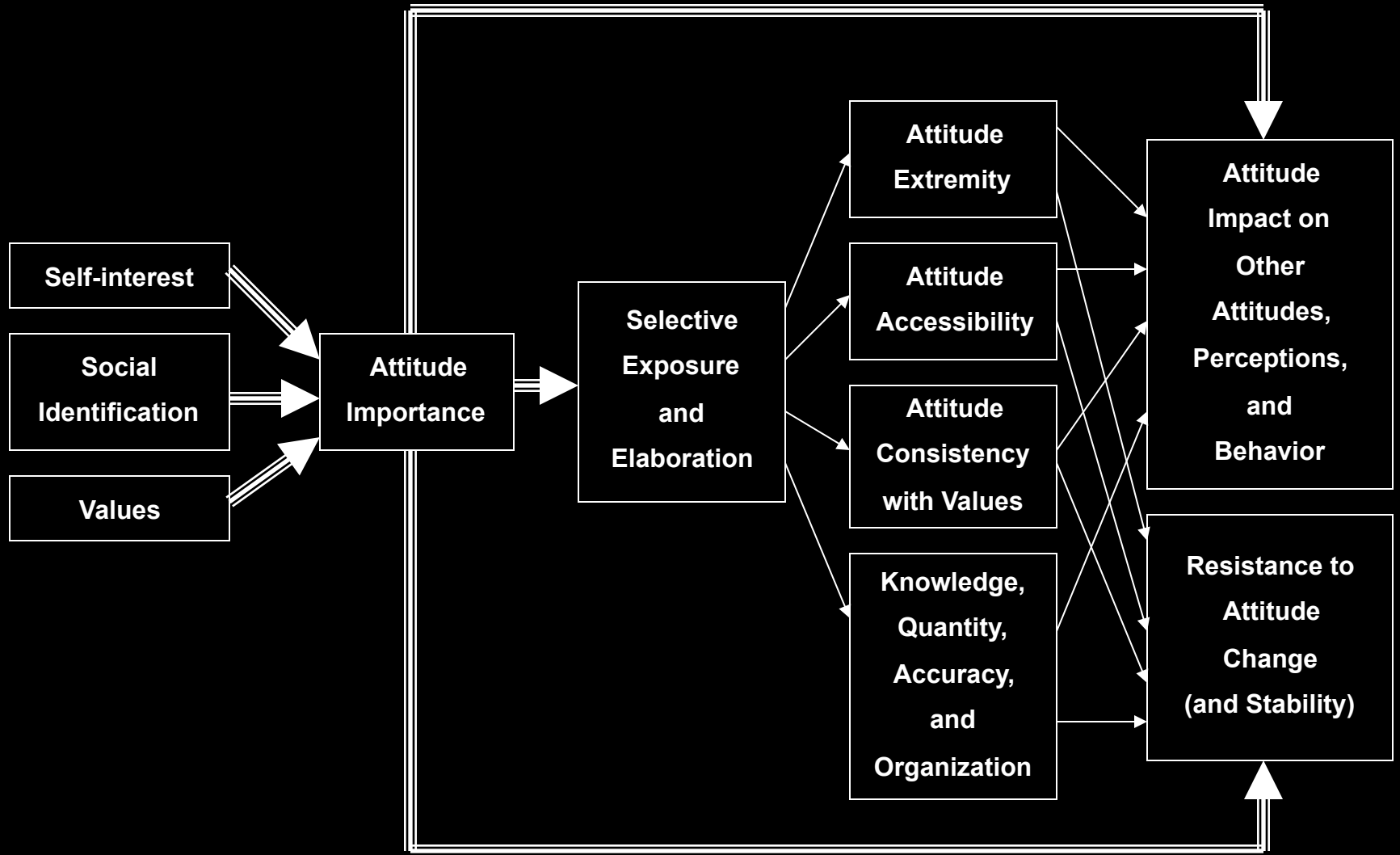
- Democrats Who Took Risk and Voted For Climate Bill Pay Price
- Cap-and-Trade Didn't Kill the Dems
- It's Not the Climate Bill, Stupid
- Ignoring Evidence, Politico Spins Climate Vote as Electoral Loser

Candidate Choice

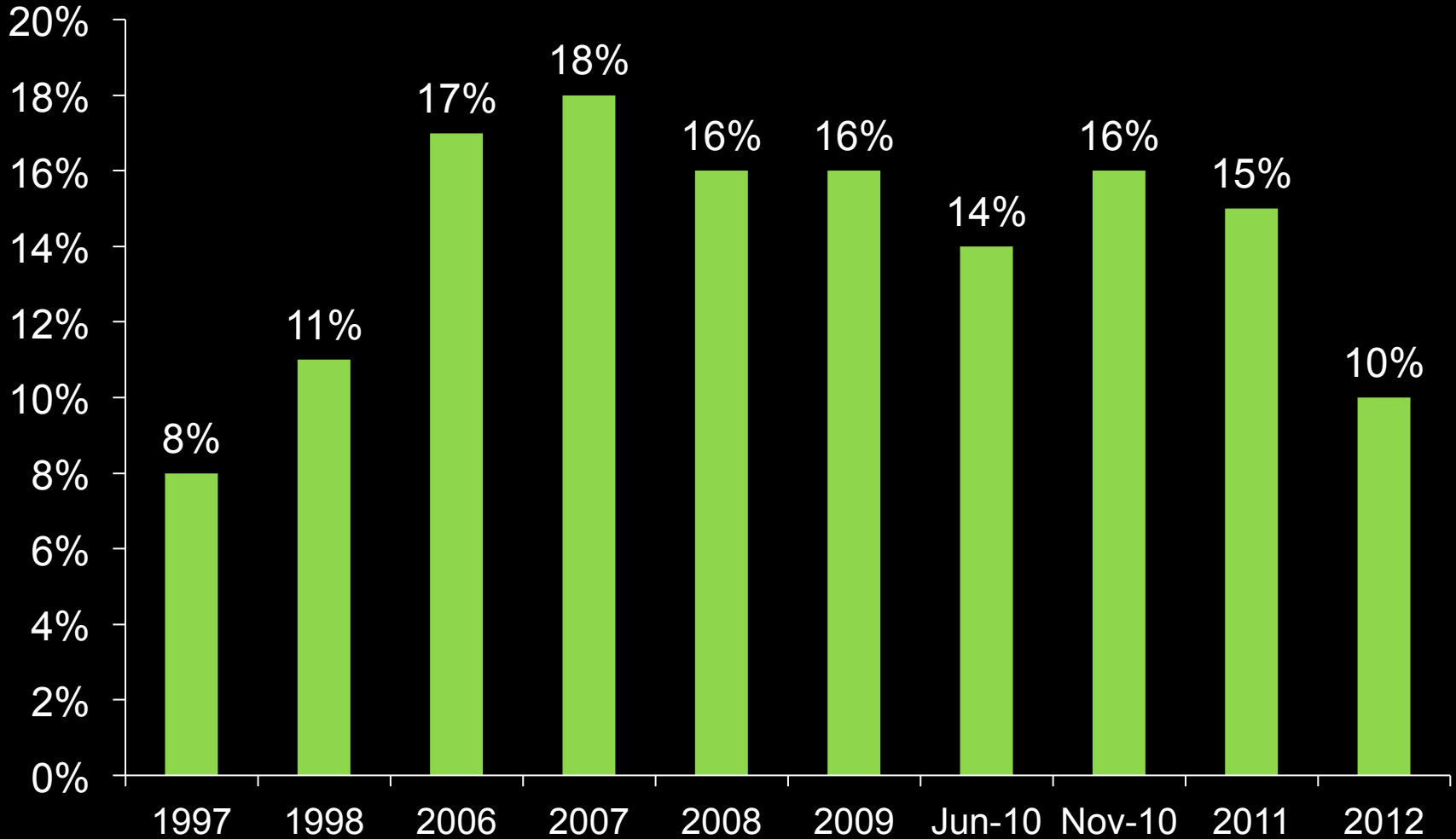
- Evaluation ingredients
 - Party identification
 - Performance of the incumbent
 - Health of the nation
 - Interests of social groups
 - Perceptions of candidates' personalities
 - Emotions evoked by candidates
 - Candidate policy positions

Voting Based on Policy Issues

- Rare?
 - Converse, 1964
 - People lack real preferences on policy issues?
 - Candidates rarely stake out clear positions
 - Candidates often hug the middle
- An alternative theory: Issue publics
 - Converse, 1964
 - A small group of citizens are passionate about each issue
 - Issue public members:
 - Pay close attention to candidate statements
 - Infer candidate differences even when not stated explicitly



“Issue Public” (29 million people now)



Issue Publics in the United States

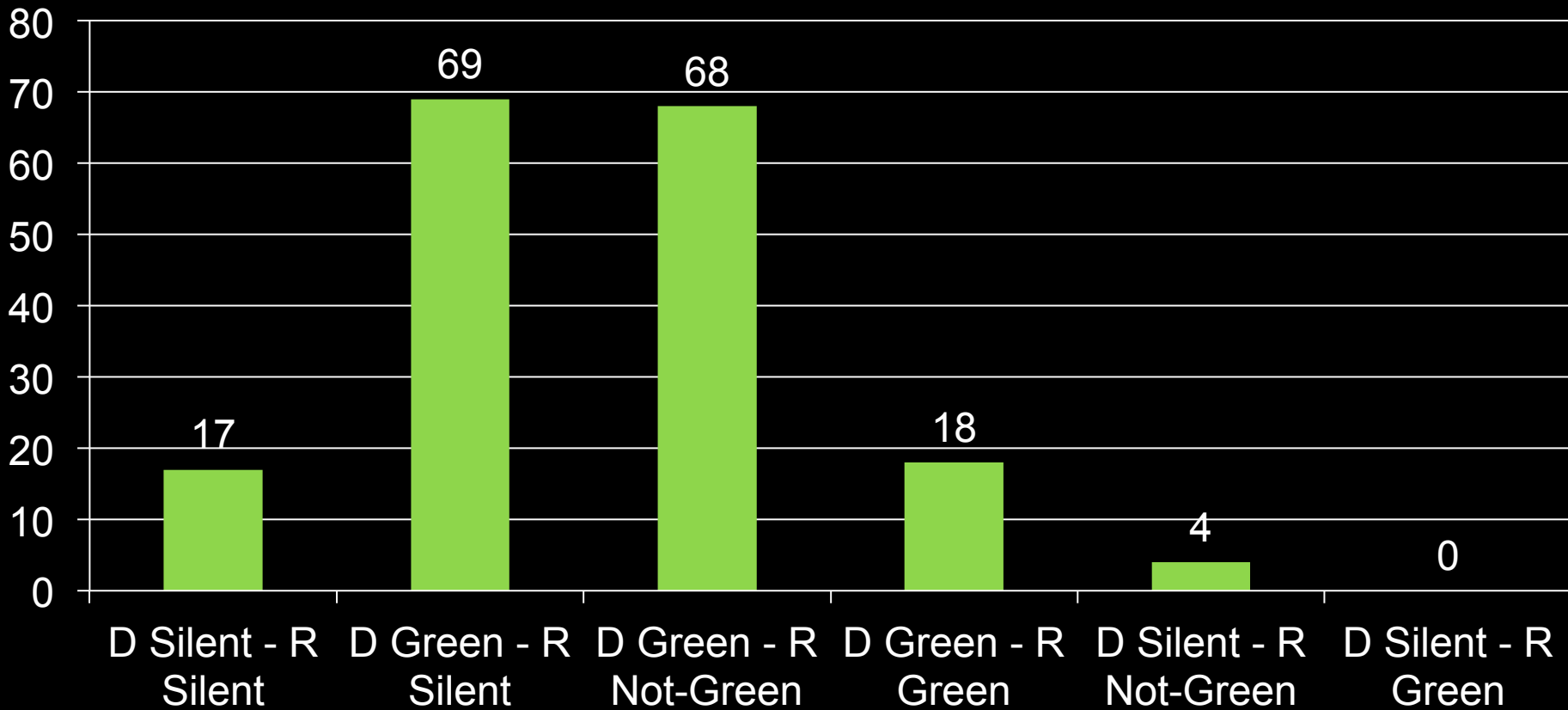
Abortion	31%
Government Social Services Programs 21%	
Gun Control	17%
U.S. Military Spending	16%
<u>Global Warming</u>	<u>10%</u>
Capital Punishment 14%	
Women's Rights	12%
Race Relations	10%
Unemployment	9%

The Issue Public's Opinions

	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>
Global Warming Has Been Happening 88%		94%	94%	94%	92%
Caused by Human Action 88%		88%	97%	91%	77%
Government Should Do More 84%		90%	93%	91%	86%

Did climate change influence
voting in 2010 and 2008?

Percent of Democrats Who Won



Predictor	Coefficient	Marginal Effect
Democrat: green	1.03** (.45)	.17** (.08)
Democrat: not-green	-.46 (1.45)	-.07 (.20)
Democrat: silent/mixed (Base category, omitted)		
Republican: green	-.29 (1.36)	-.05 (.21)
Republican: not-green	-4.27*** (1.58)	-.34*** (.07)
Republican: silent/mixed (Base category, omitted)		
Democrat: green x Republican: not-green	4.08** (1.67)	.75*** (.13)
Democratic: Incumbent	2.60*** (.71)	.42*** (.11)
Republican: Incumbent	.42 (1.09)	.08 (.21)
2008 Party Margin	.06*** (.01)	.01*** (.00)
N	430	
R ²	.62	

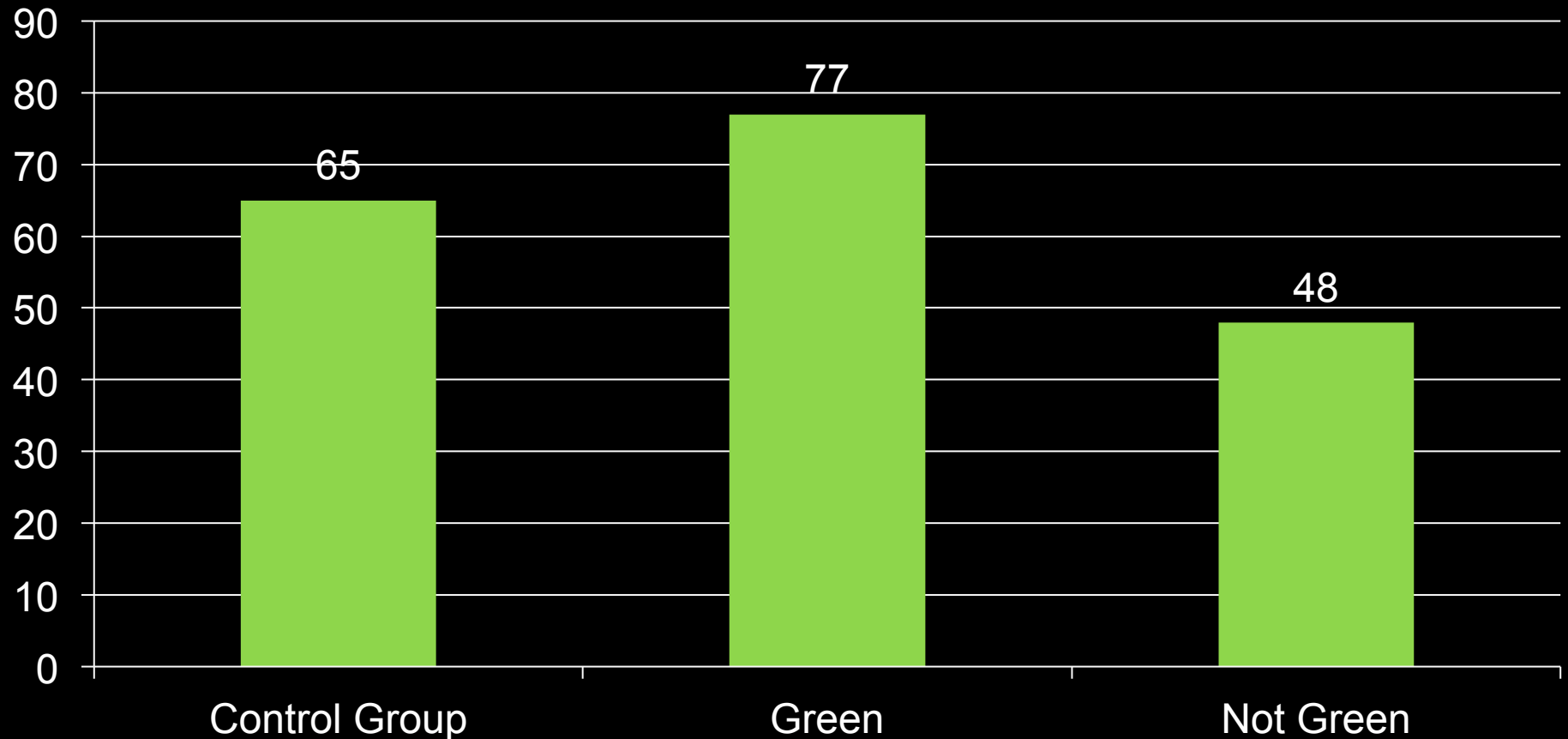
Note: Standard errors appear in parentheses. ***: $p < .01$; **: $p < .05$.

What Caused What?

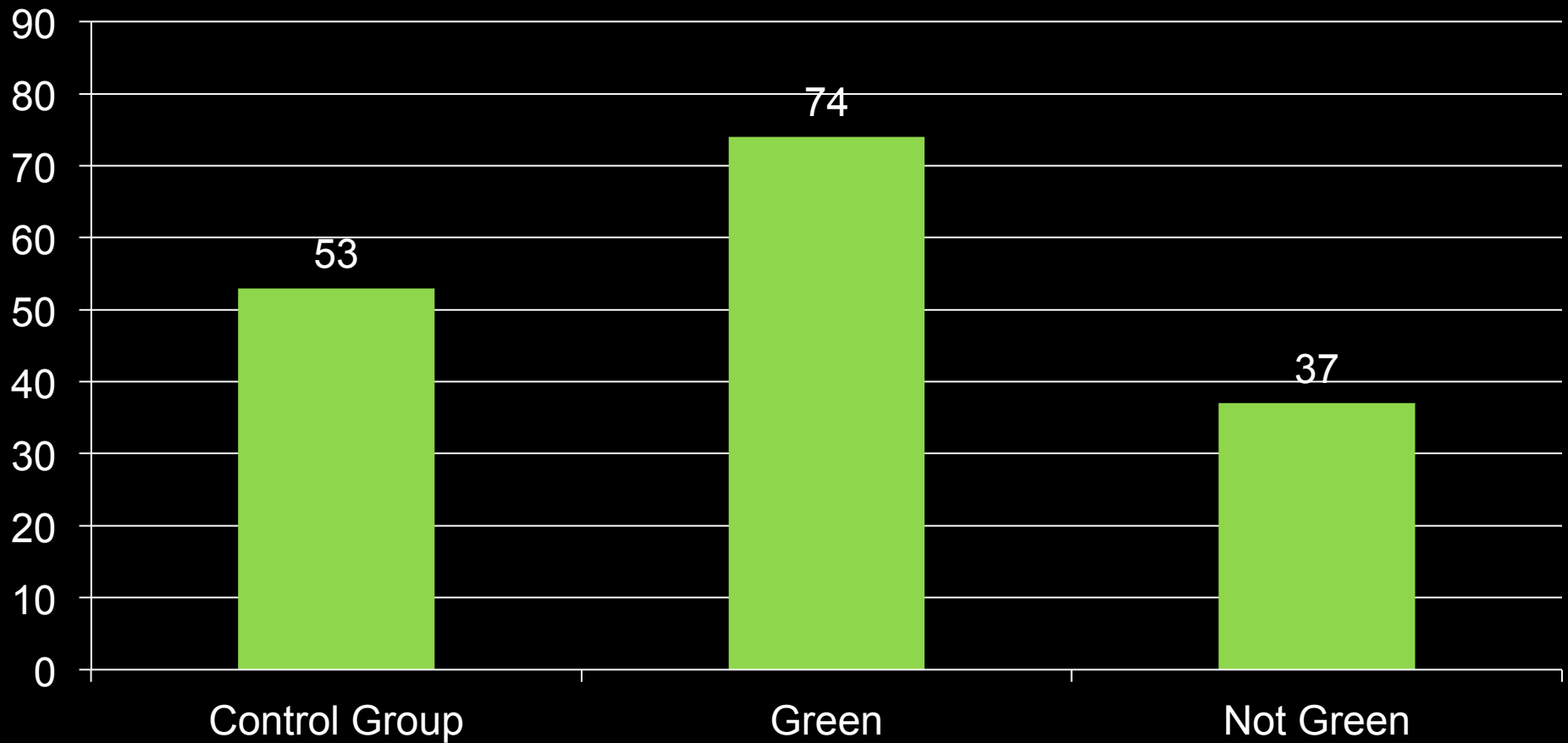
A Survey Experiment

- National RDD Telephone Survey
- All Respondents
 - Hypothetical candidate running for Senate
 - Quotes on two or three issues
 - How likely are you to vote for/against the candidate?

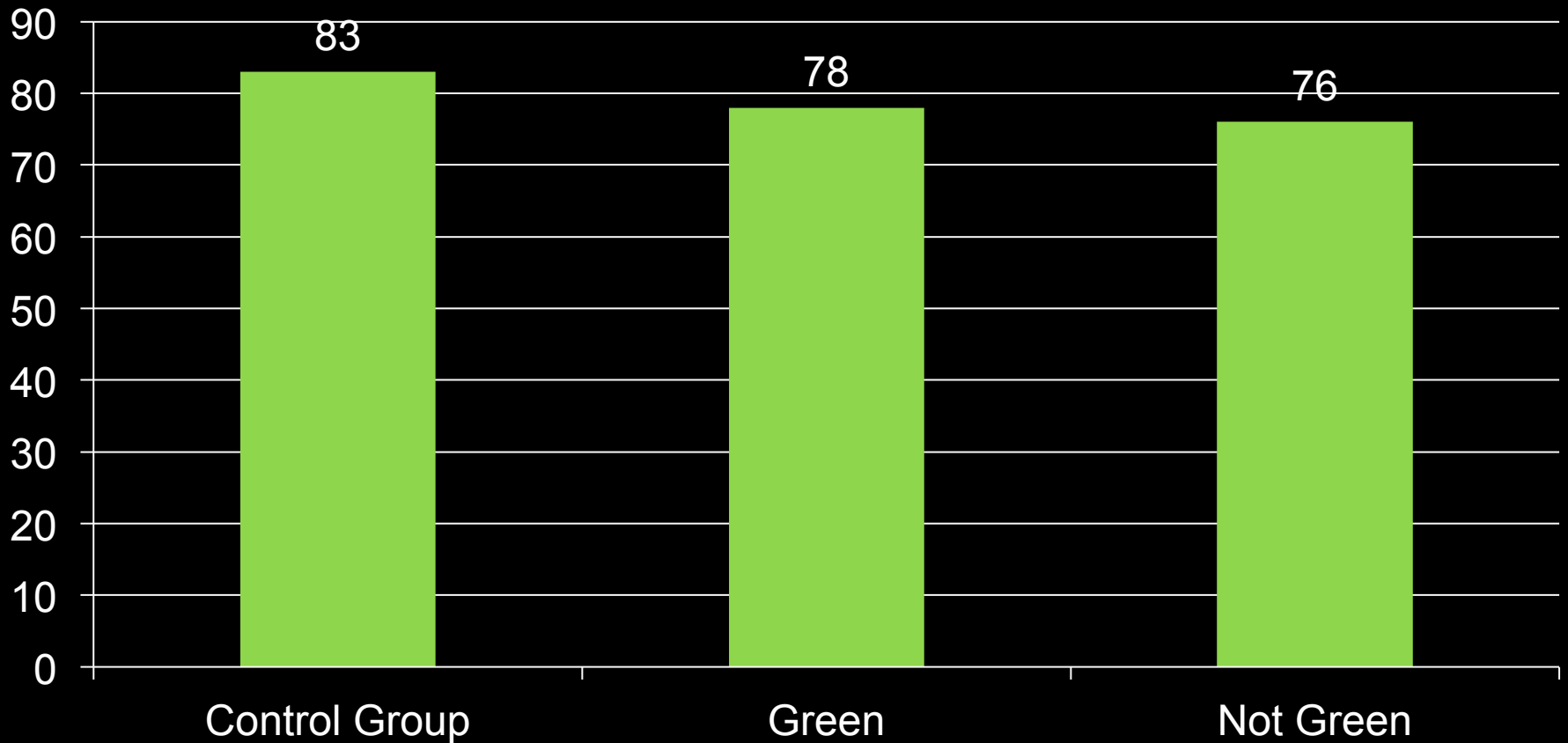
Percent Would Vote For the Candidate



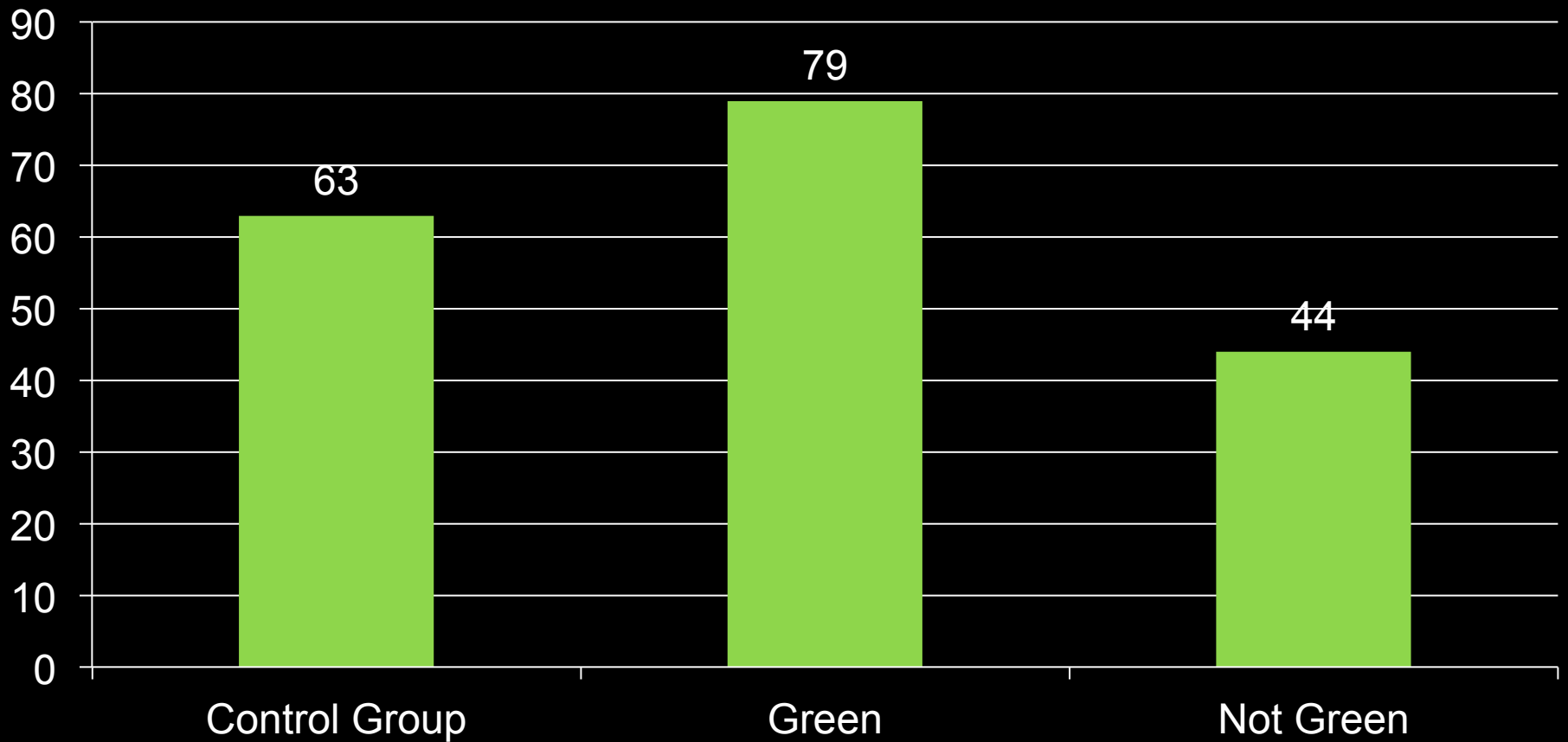
Percent Would Vote For the Candidate: Democratic Voters



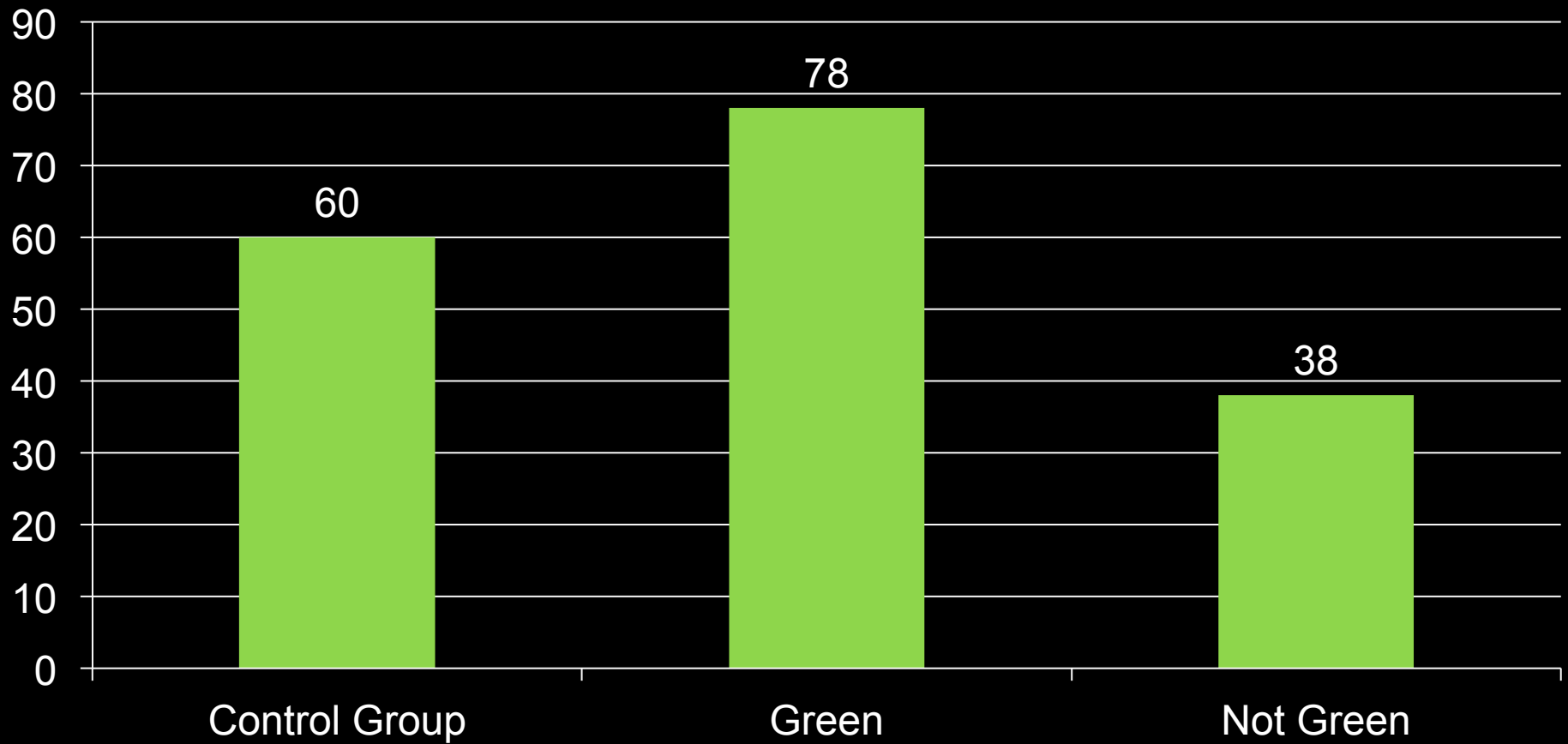
Percent Would Vote For the Candidate: Republican Voters



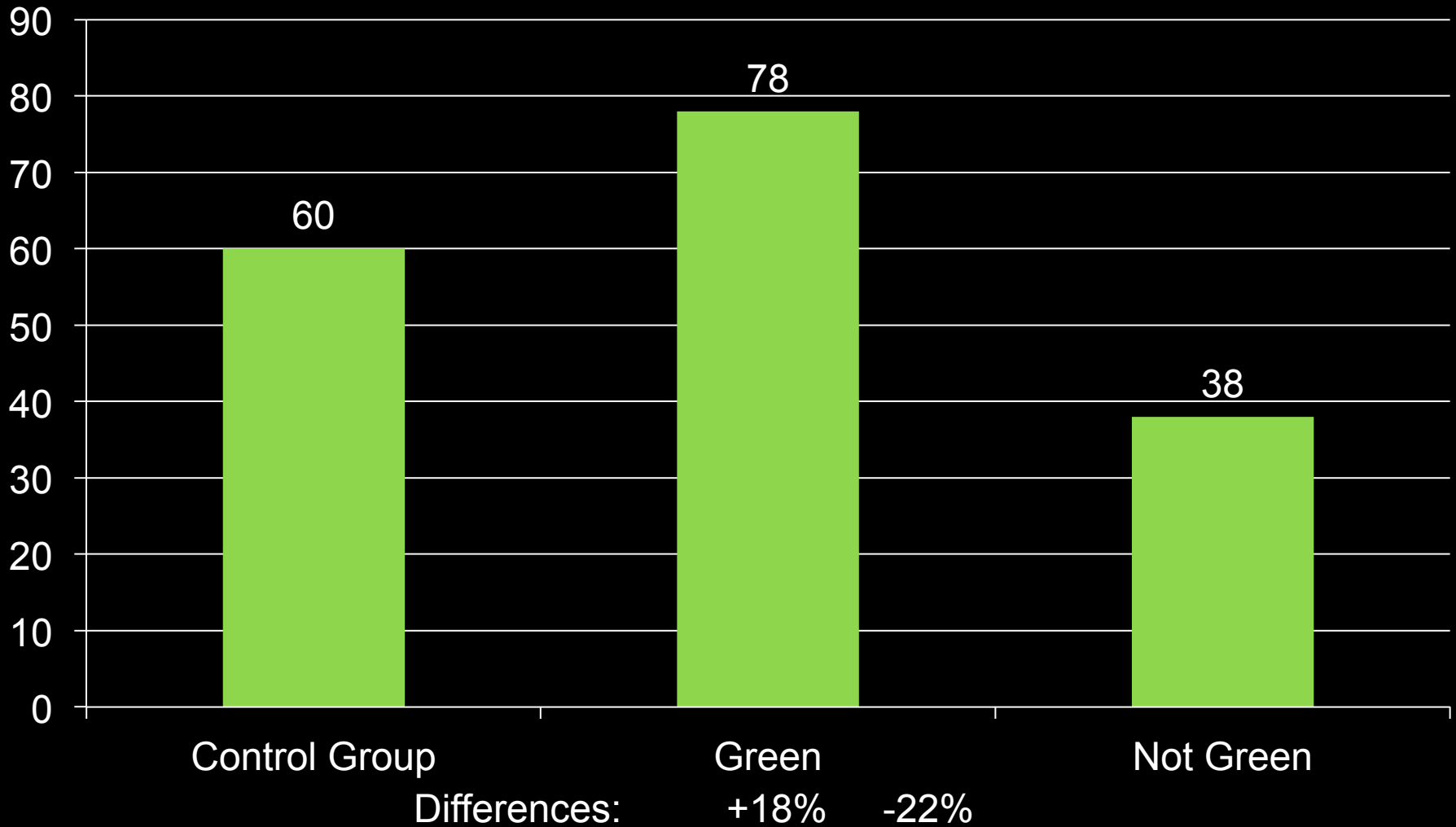
Percent Would Vote For the Candidate: Independent Voters



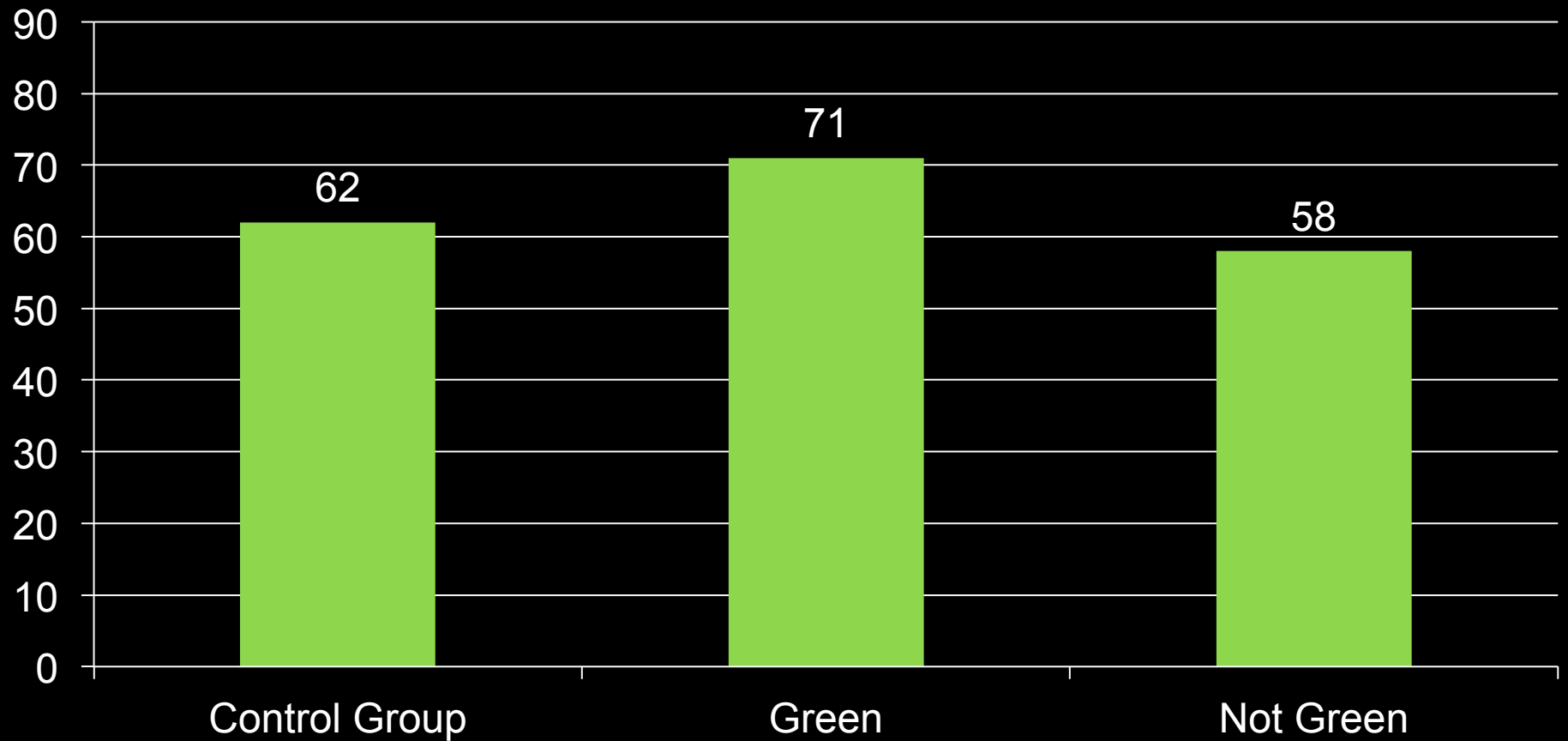
Issue Public Members



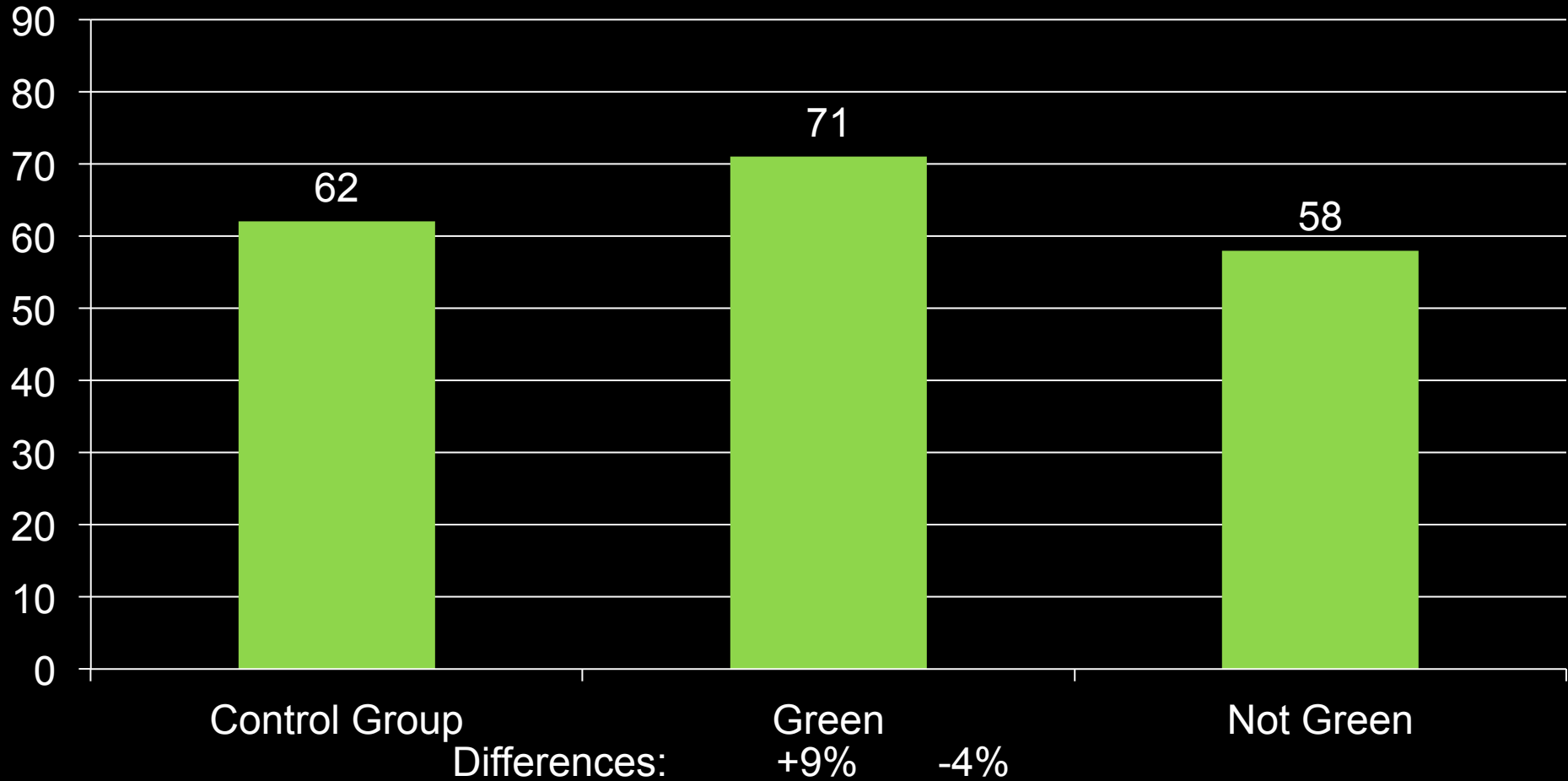
Issue Public Members



Issue Public Non-Members



Issue Public Non-Members



2008 U.S. Presidential Election

October 7, 2008 Debate

- Question:
- I want to know what you would do within the first two years to make sure that Congress moves fast as far as environmental issues, like climate change and green jobs?”

Mr. McCain

- Look, we are in tough economic times; we all know that. And let's keep -- never forget the struggle that Americans are in today.
- But when we can -- when we have an issue that we may hand our children and our grandchildren a damaged planet,
- I have disagreed strongly with the Bush administration on this issue. I traveled all over the world looking at the effects of greenhouse gas emissions, Joe Lieberman and I.
- And I introduced the first legislation, and we forced votes on it. That's the good news, my friends. The bad news is we lost. But we kept the debate going, and we kept this issue to --

Mr. Obama

- And it is absolutely critical that we understand this is not just a challenge, it's an opportunity, because if we create a new energy economy, we can create five million new jobs, easily, here in the United States.
- And we can do it, but we're going to have to make an investment. The same way the computer was originally invented by a bunch of government scientists who were trying to figure out, for defense purposes, how to communicate, we've got to understand that this is a national security issue, as well.
- And that's why we've got to make some investments and I've called for investments in solar, wind, geothermal.
- It's easy to talk about this stuff during a campaign, but it's important for us to understand that it requires a sustained effort from the next president.

Table 14: Impact of Climate Change Issue Congruence on Voting Behavior

Predictor	City Block Measures			Euclidian Measures			Directional Measures		
	Voting for McCain (1)	Voting for Other (2)	Not Voting (3)	Voting for McCain (4)	Voting for Other (5)	Not Voting (6)	Voting for McCain (7)	Voting for Other (8)	Not Voting (9)
GW Issue	-0.196*** (0.064)	-0.096 (0.079)	-0.061 (0.061)	-0.029** (0.012)	-0.012 (0.014)	-0.012 (0.012)	-0.064*** (0.024)	-0.028 (0.023)	-0.028 (0.023)
Ideology	-0.392*** (0.061)	-0.191*** (0.069)	-0.161*** (0.056)	-0.070*** (0.012)	-0.042*** (0.014)	-0.024** (0.011)	-0.144*** (0.028)	-0.086*** (0.032)	-0.045* (0.024)
Democrat	-0.959*** (0.360)	-1.150** (0.515)	-0.700** (0.289)	-0.987*** (0.359)	-1.096** (0.507)	-0.719** (0.286)	-0.998*** (0.350)	-1.090** (0.514)	-0.719** (0.283)
Republican	1.599*** (0.422)	-0.863 (0.781)	0.224 (0.430)	1.592*** (0.420)	-0.905 (0.789)	0.310 (0.423)	1.590*** (0.438)	-0.884 (0.802)	0.312 (0.431)
Bush Approval	2.385*** (0.576)	0.463 (0.735)	1.795*** (0.468)	2.469*** (0.565)	0.370 (0.751)	1.866*** (0.457)	2.632*** (0.557)	0.515 (0.715)	1.968*** (0.459)
<u>Perc. of Economy</u>	0.029 (0.793)	2.636*** (0.939)	-0.313 (0.638)	0.044 (0.798)	2.686*** (0.939)	-0.265 (0.629)	0.195 (0.772)	2.757*** (0.944)	-0.243 (0.629)
Interest in Politics	0.825 (0.639)	0.946 (0.866)	-2.076*** (0.496)	0.762 (0.623)	0.953 (0.863)	-2.079*** (0.493)	0.889 (0.620)	1.018 (0.854)	-2.037*** (0.491)
Female	0.149 (0.308)	-0.618 (0.480)	0.832*** (0.258)	0.169 (0.306)	-0.650 (0.480)	0.859*** (0.256)	0.164 (0.307)	-0.631 (0.479)	0.863*** (0.256)
Hispanic	-0.661 (0.562)	-0.469 (0.810)	0.114 (0.359)	-0.729 (0.588)	-0.459 (0.806)	0.110 (0.358)	-0.781 (0.584)	-0.480 (0.796)	0.069 (0.356)
Black	-2.862*** (0.716)	-1.713** (0.766)	-1.990*** (0.527)	-2.877*** (0.724)	-1.691** (0.799)	-2.004*** (0.531)	-2.797*** (0.698)	-1.641** (0.755)	-1.982*** (0.528)
Age	0.008 (0.010)	-0.010 (0.014)	-0.023** (0.009)	0.008 (0.010)	-0.011 (0.014)	-0.023** (0.009)	0.007 (0.010)	-0.012 (0.013)	-0.023** (0.009)
Region - Midwest	0.769* (0.463)	0.395 (0.587)	0.458 (0.392)	0.737 (0.455)	0.396 (0.593)	0.432 (0.391)	0.684 (0.456)	0.343 (0.594)	0.386 (0.392)
Region - South	1.095*** (0.397)	0.518 (0.580)	1.306*** (0.343)	1.093*** (0.395)	0.515 (0.585)	1.300*** (0.344)	1.064*** (0.406)	0.471 (0.585)	1.270*** (0.346)
Region - West	0.458 (0.397)	-0.670 (0.753)	0.418 (0.344)	0.461 (0.390)	-0.639 (0.761)	0.417 (0.342)	0.427 (0.393)	-0.686 (0.763)	0.382 (0.344)
Education	1.617 (1.294)	3.821** (1.591)	-1.216 (0.960)	1.335 (1.262)	3.713** (1.595)	-1.302 (0.962)	1.592 (1.330)	3.834** (1.607)	-1.332 (0.981)
Income	-0.325 (0.563)	-0.957 (0.960)	-1.206*** (0.453)	-0.267 (0.571)	-0.975 (0.971)	-1.187*** (0.452)	-0.161 (0.573)	-0.935 (0.962)	-1.169*** (0.452)
Constant	-3.483*** (1.017)	-4.167*** (1.607)	2.359*** (0.775)	-3.329*** (0.968)	-4.104** (1.609)	2.346*** (0.778)	-3.549*** (1.045)	-4.188*** (1.619)	2.385*** (0.790)

Notes: N = 912. *** p<0.01, ** p<0.05, * p<0.1

Issue Public

- Members

- $b = -.34$, $p = .005$

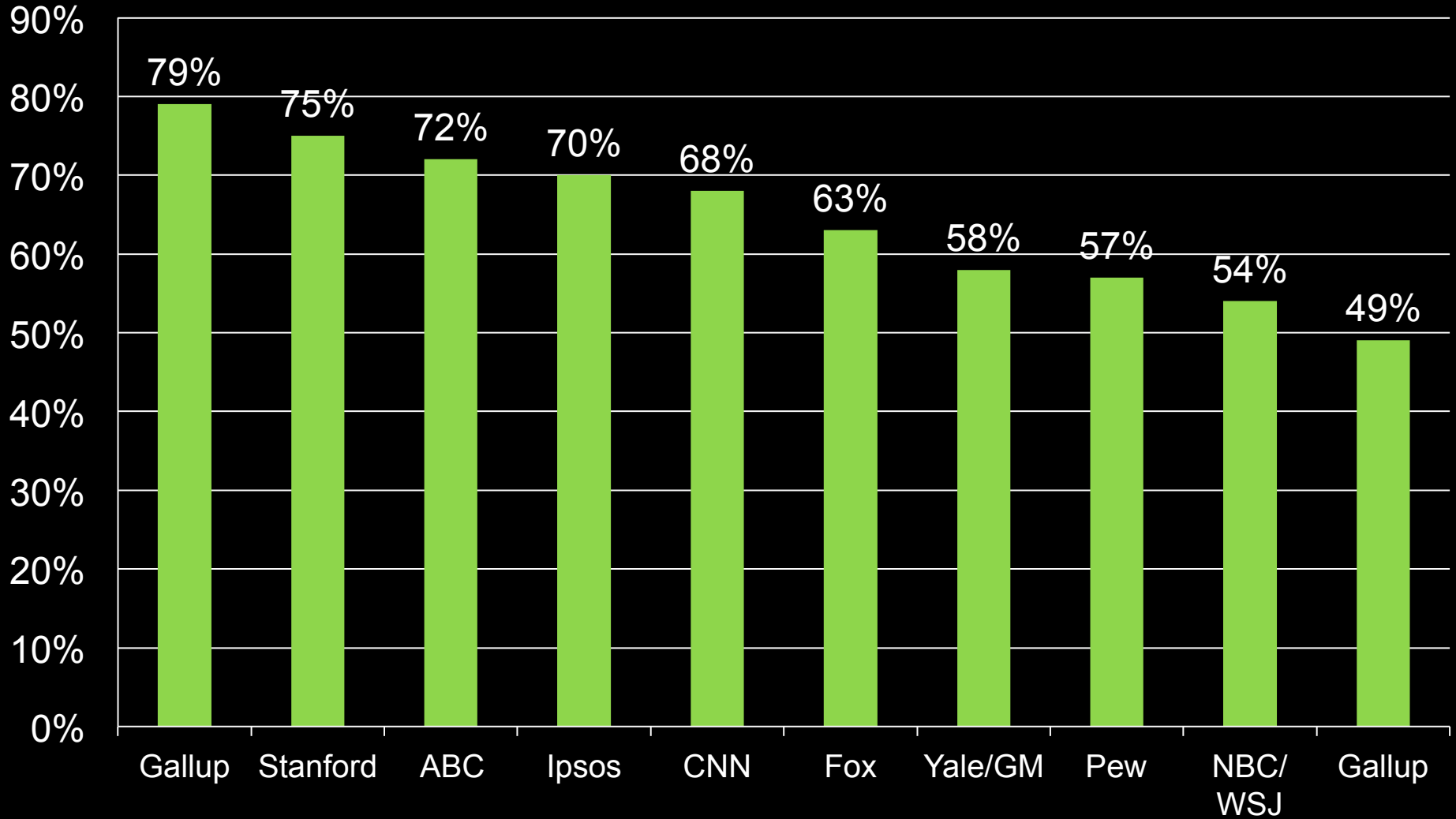
- Non-members

- $b = -.01$, $p = .89$

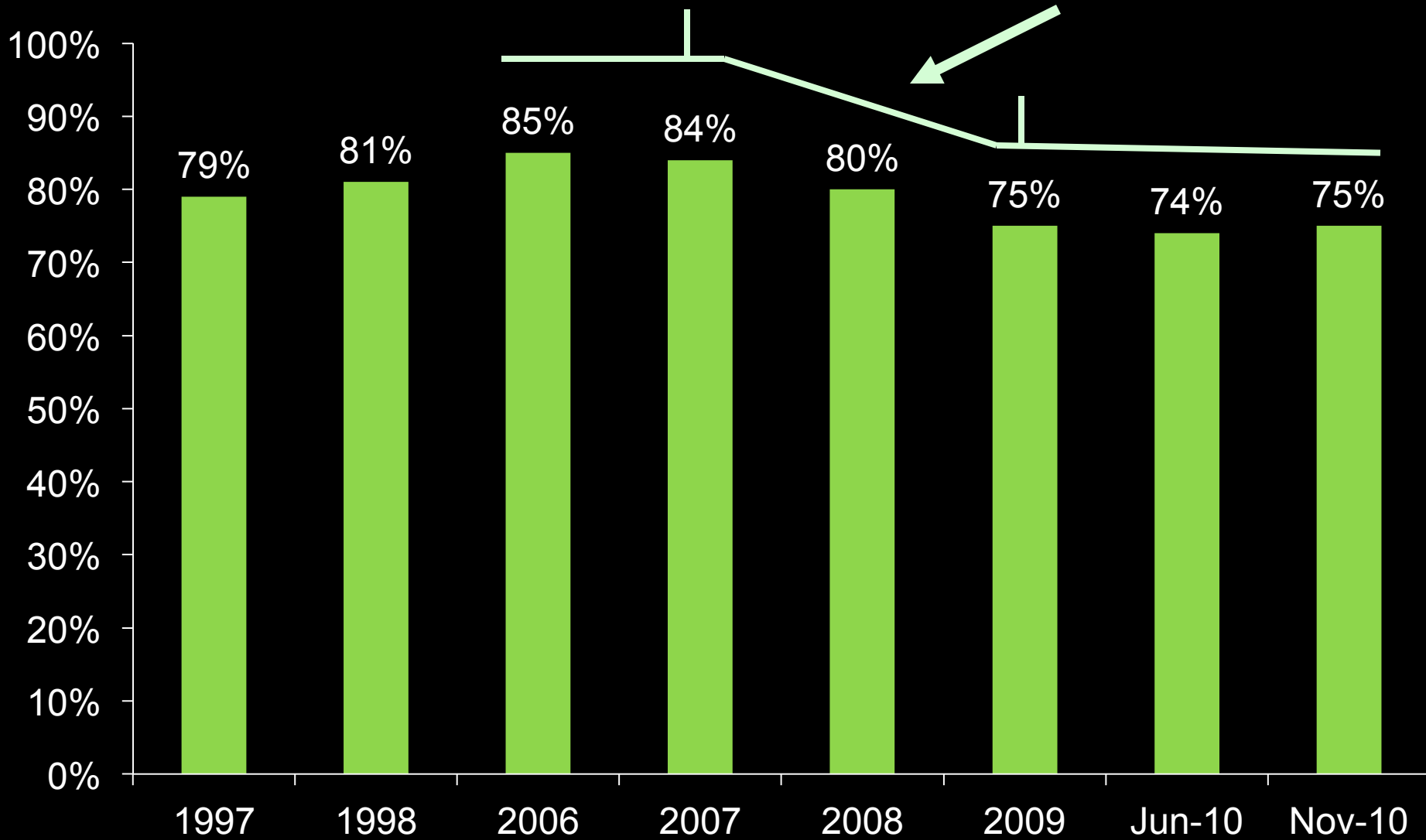
Conclusions

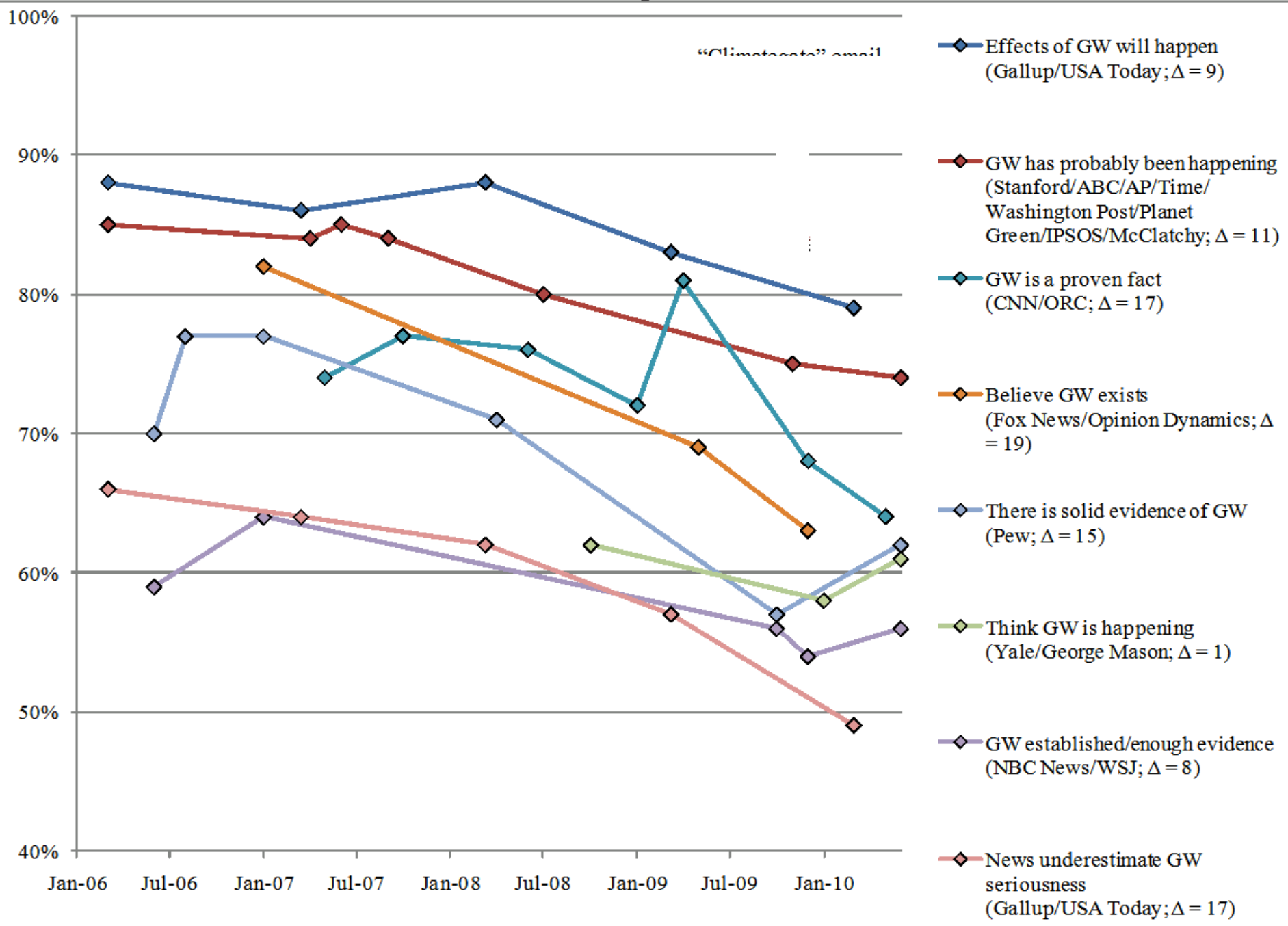
- A majority of Americans are green on climate change
- No regions of skepticism
- It is a priority
- People are willing to pay
- Taking green positions helped candidates
- Taking not green positions hurt candidates
- As expected, impact was concentrated among issue public members
- So candidates have incentives to be publicly green
- But they don't know it

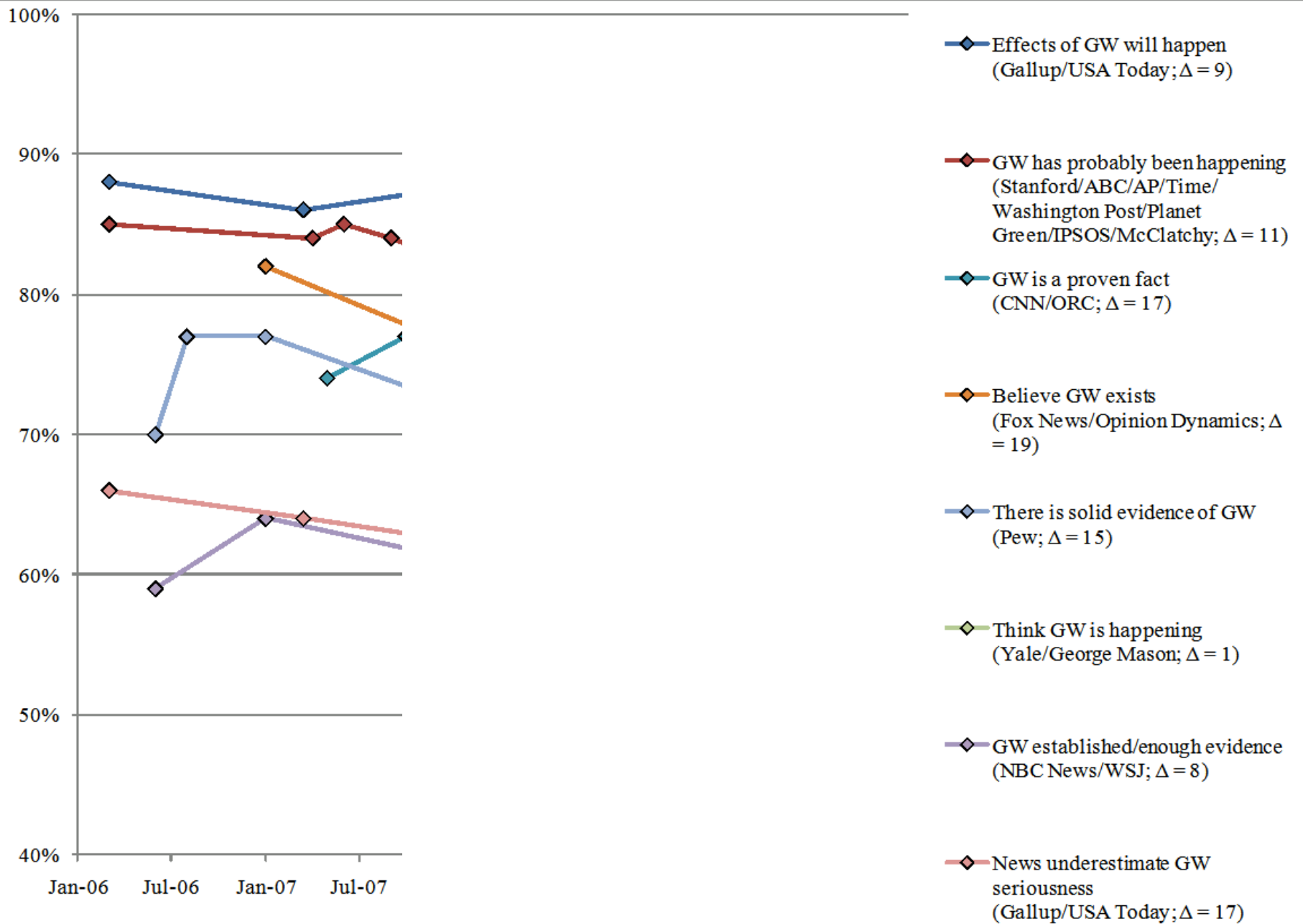
Late 2009 – Early 2010

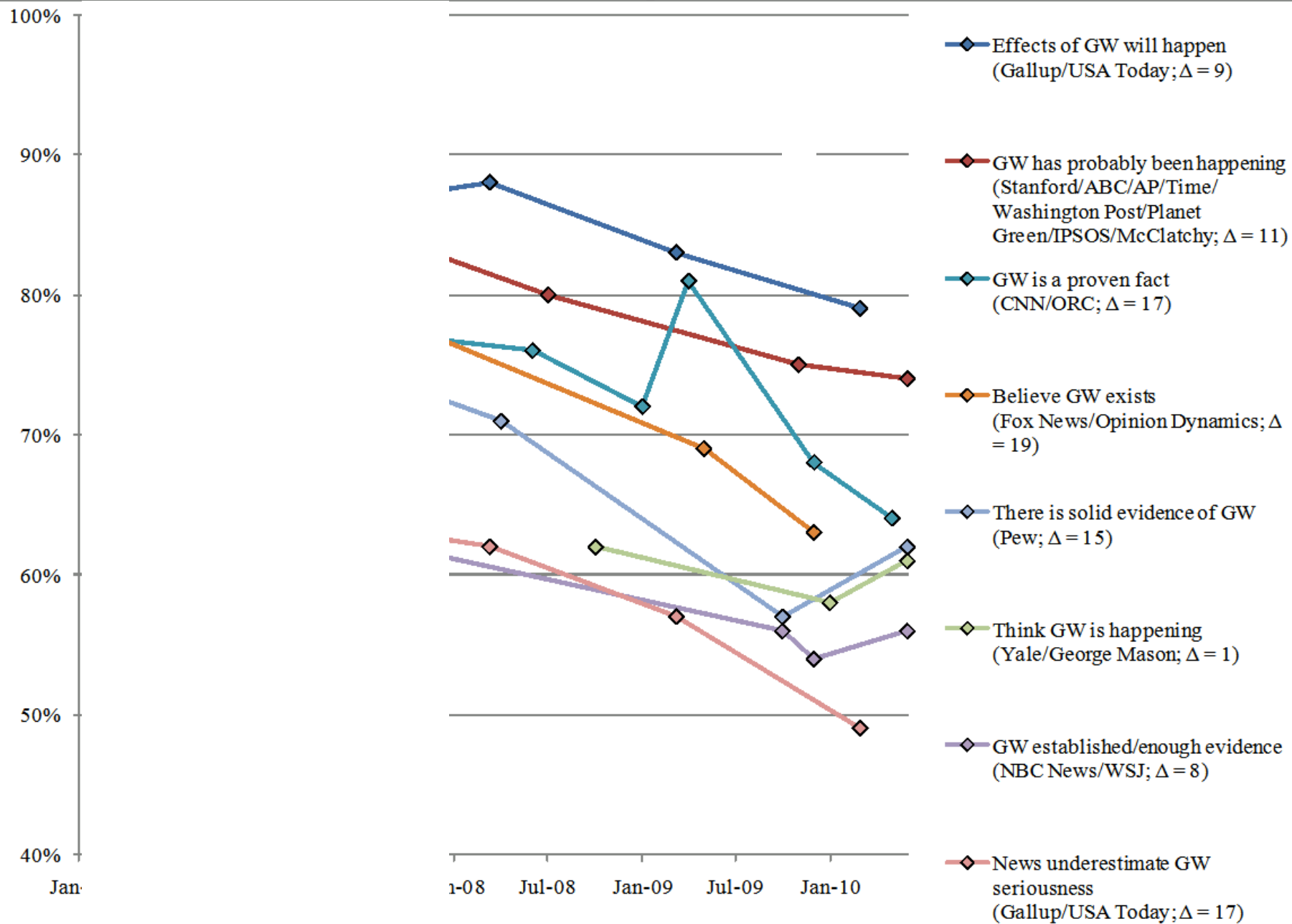


Has Global Warming Been Happening?









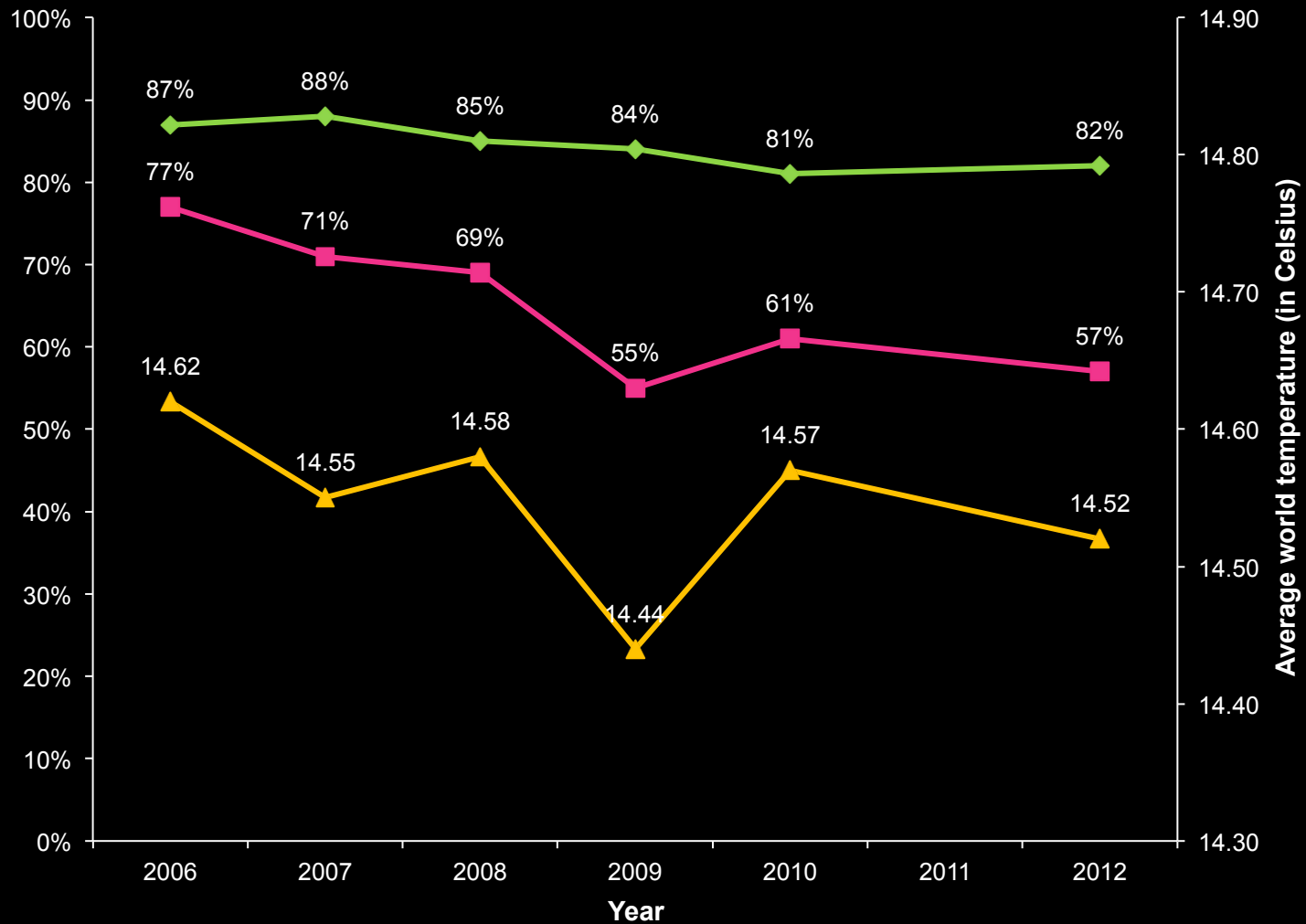
Maximum - End

- Fox News/Opinion Dynamics
19%
- CNN/ORC
17%
- Gallup/USA Today
17%
- Pew
15%
- Stanford/ABC/AP/Time/Wash Post/etc.
11%
- Gallup/USA Today

Maximum - End

- Fox News/Opinion Dynamics
19%
- CNN/ORC
17%
- Gallup/USA Today
17%
- Pew
15%
- **Stanford/ABC/AP/Time/Wash Post/etc.**
11%
- Gallup/USA Today

Why the Decline in Beliefs that
the Earth has been Heating Up?



◆ High Trust Survey Respondents
 ■ Low Trust Survey Respondents
 ▲ World Temperature (Previous Year)

Study 3:

Effects of Language

Consultants

- Frank Luntz (Republican)
- George Lakoff (Democrat)

Wikipedia

“Although Luntz later tried to distance himself from the Bush administration policy, it was his idea that administration communications reframe “global warming” as “climate change,” since “climate change” was thought to be less alarmist.”

Question Wording Experiment

- If nothing is done to reduce global warming in the future, how serious of a problem do you think it will be?
- If nothing is done to reduce climate change in the future, how serious of a problem do you think it will be?
- If nothing is done to reduce global climate change in the future, how serious

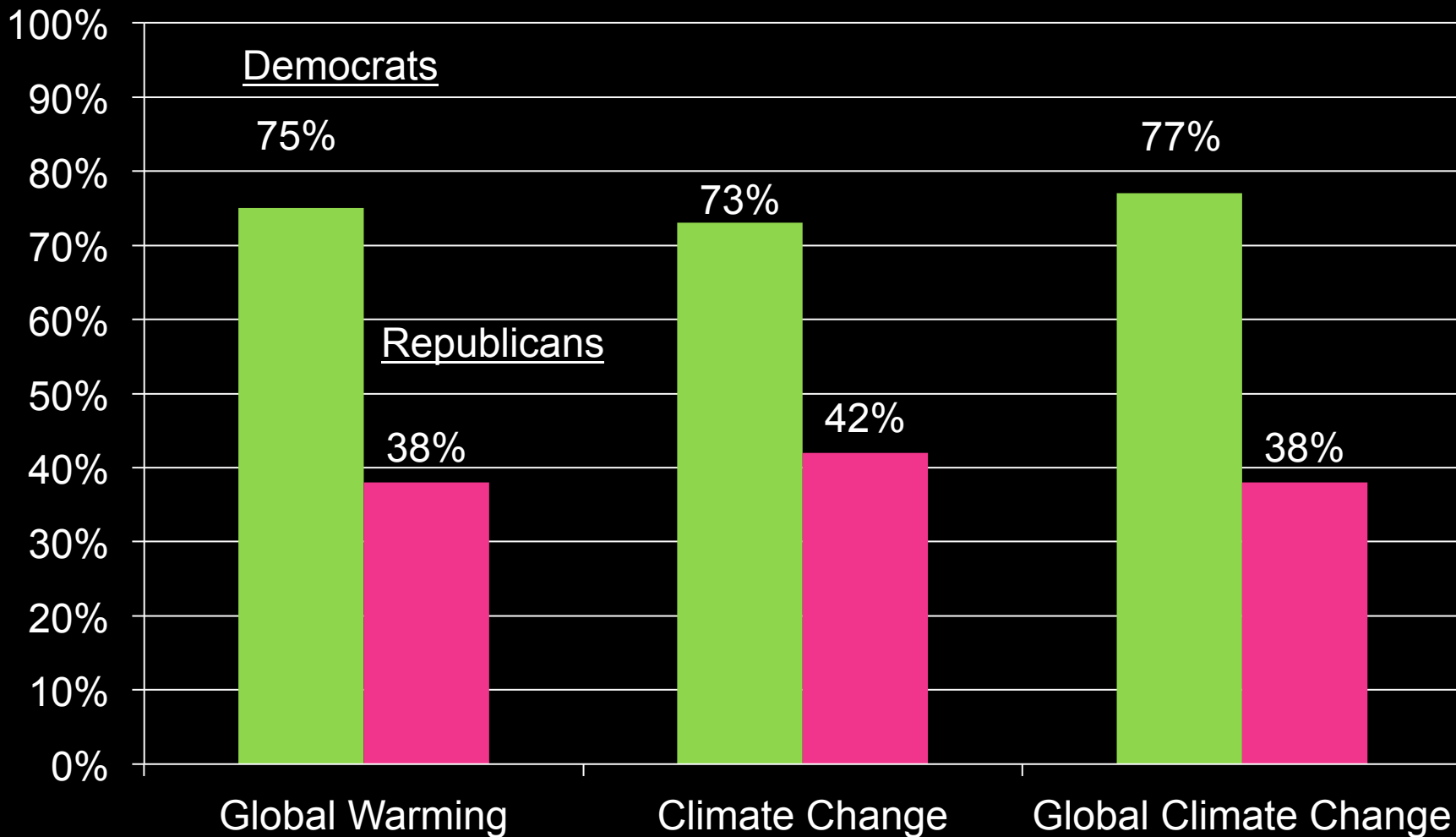
Hypotheses

- Republicans may be motivated to interpret “Climate Change” as referring to ordinary weather changes and therefore minimize seriousness.

- Among Republicans:

Global warming > climate change

Extremely or Very Serious



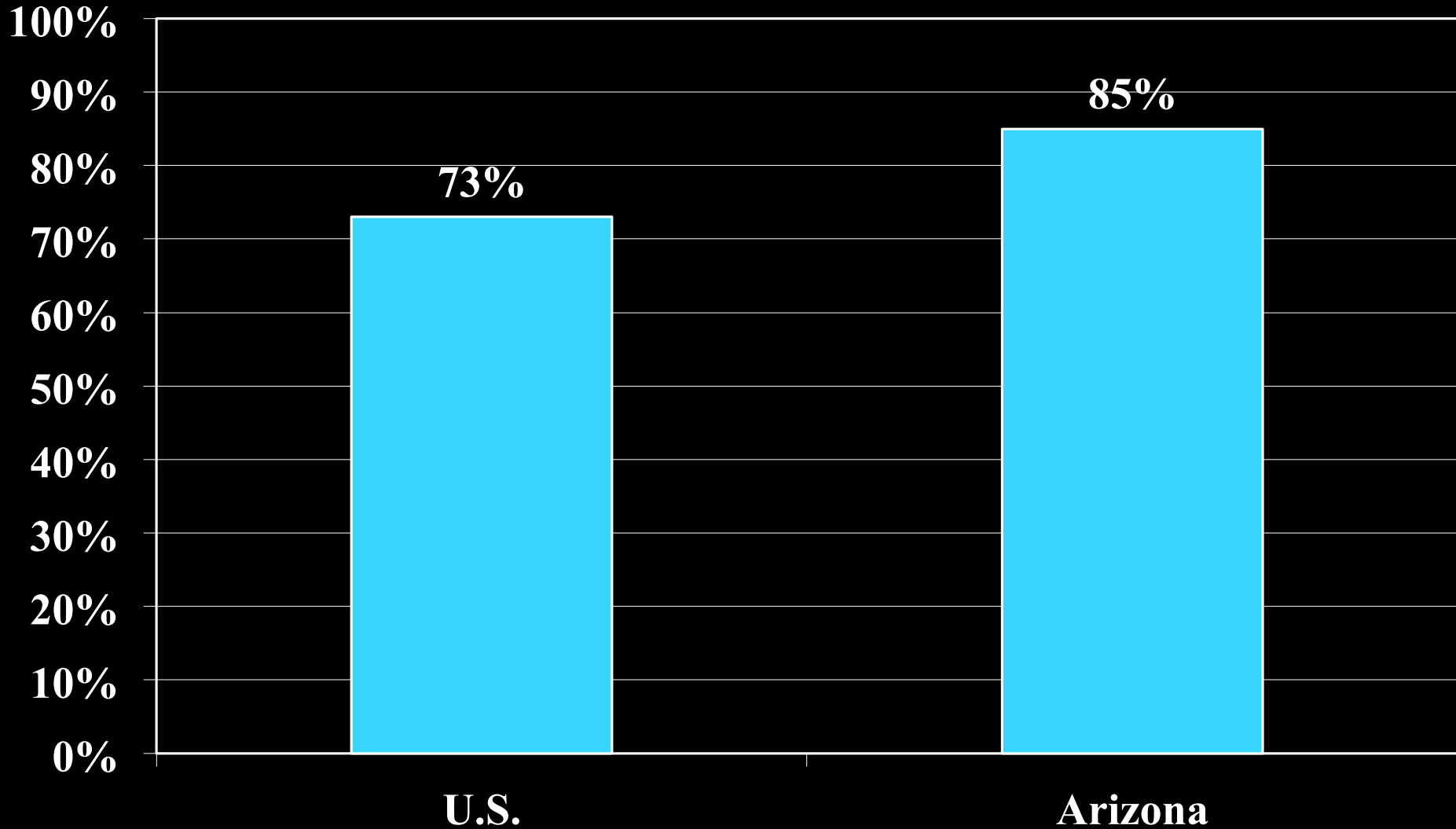
n.s.

For Those Who Want to Promote a Green Agenda

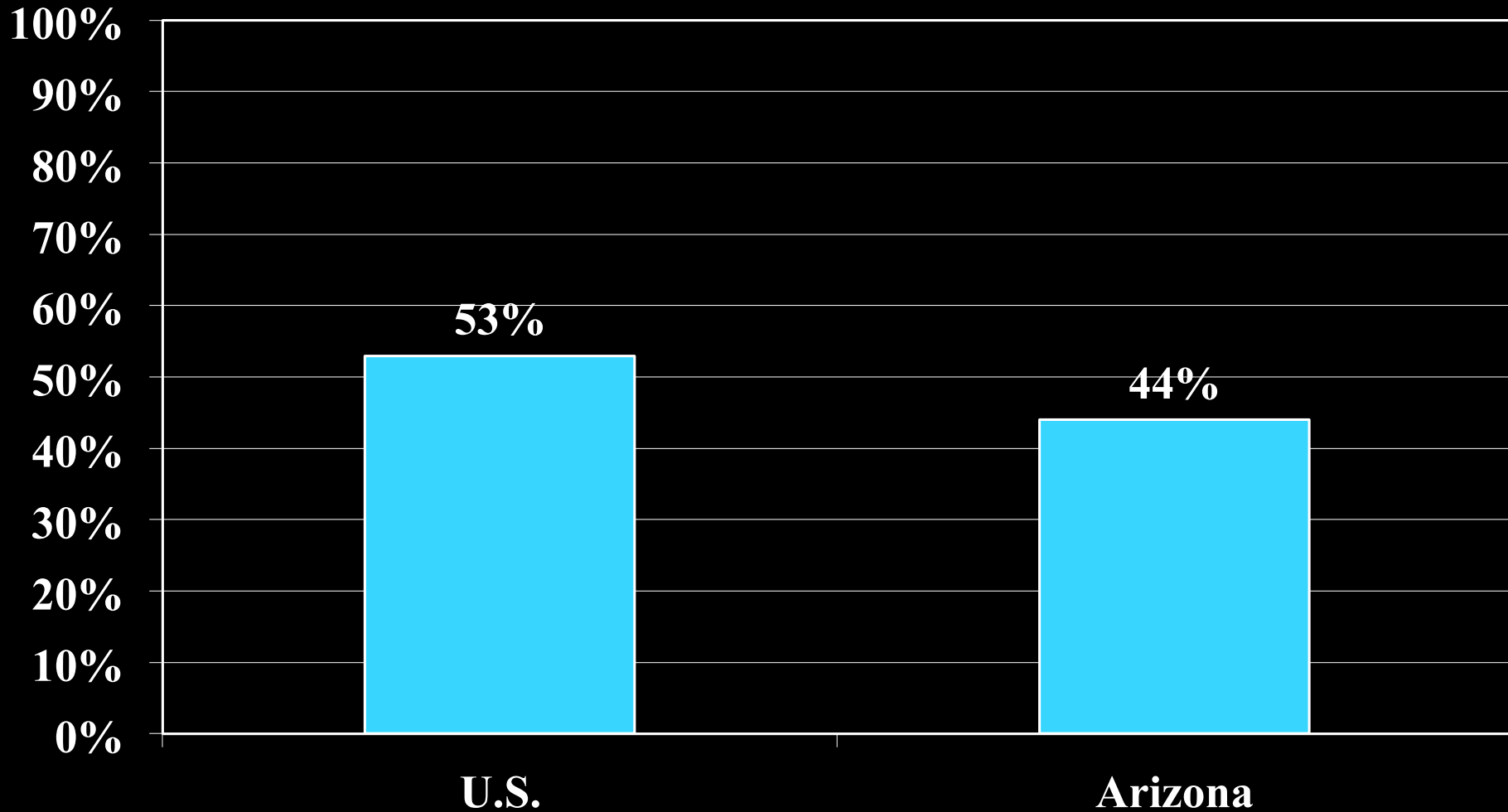
- Maybe more national greenness isn't needed in order to promote climate change legislation.
- Instead: Help legislators understand the public's will better?

Comparing Arizona to the Nation

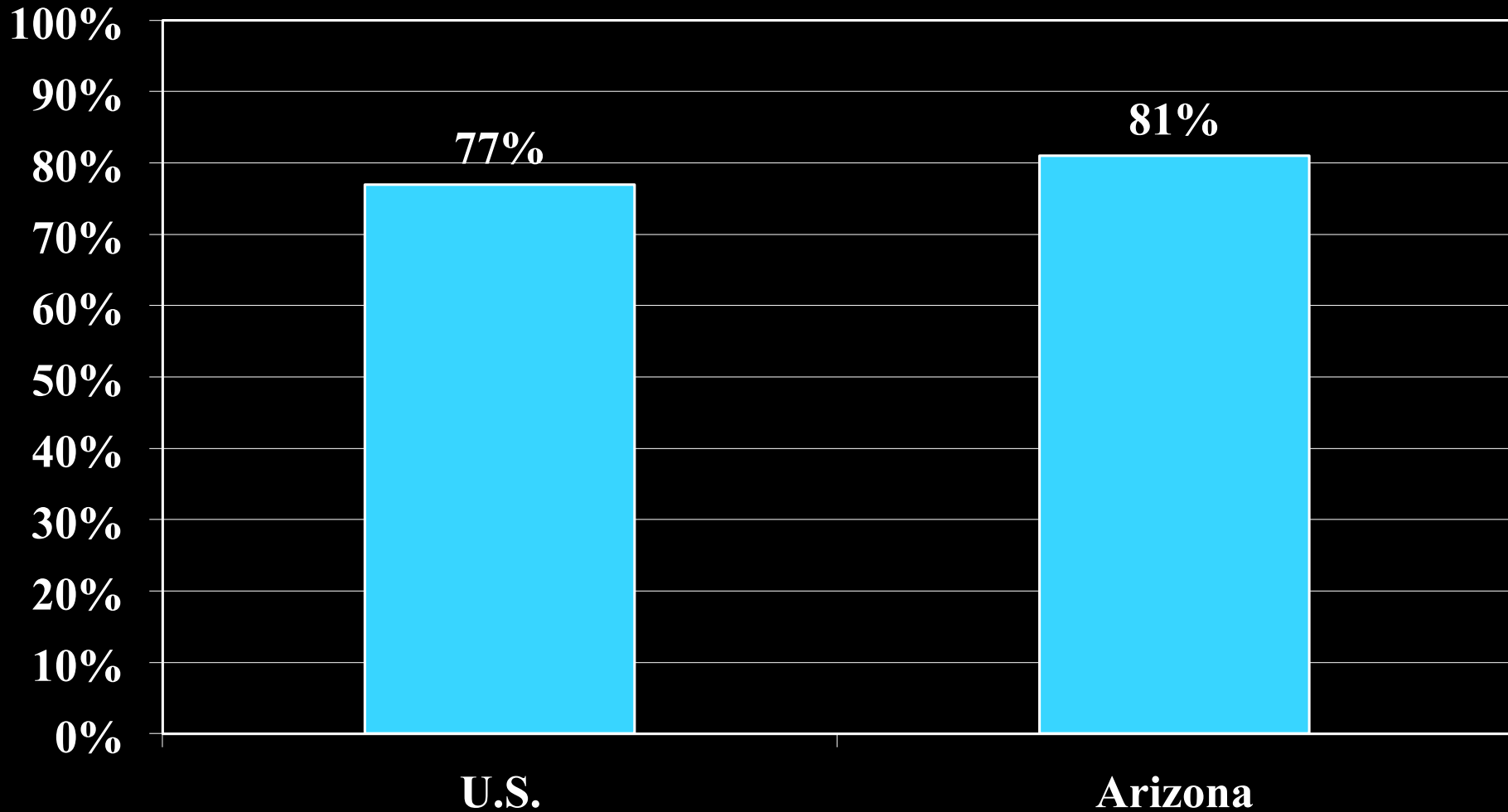
Has GW Been Happening?



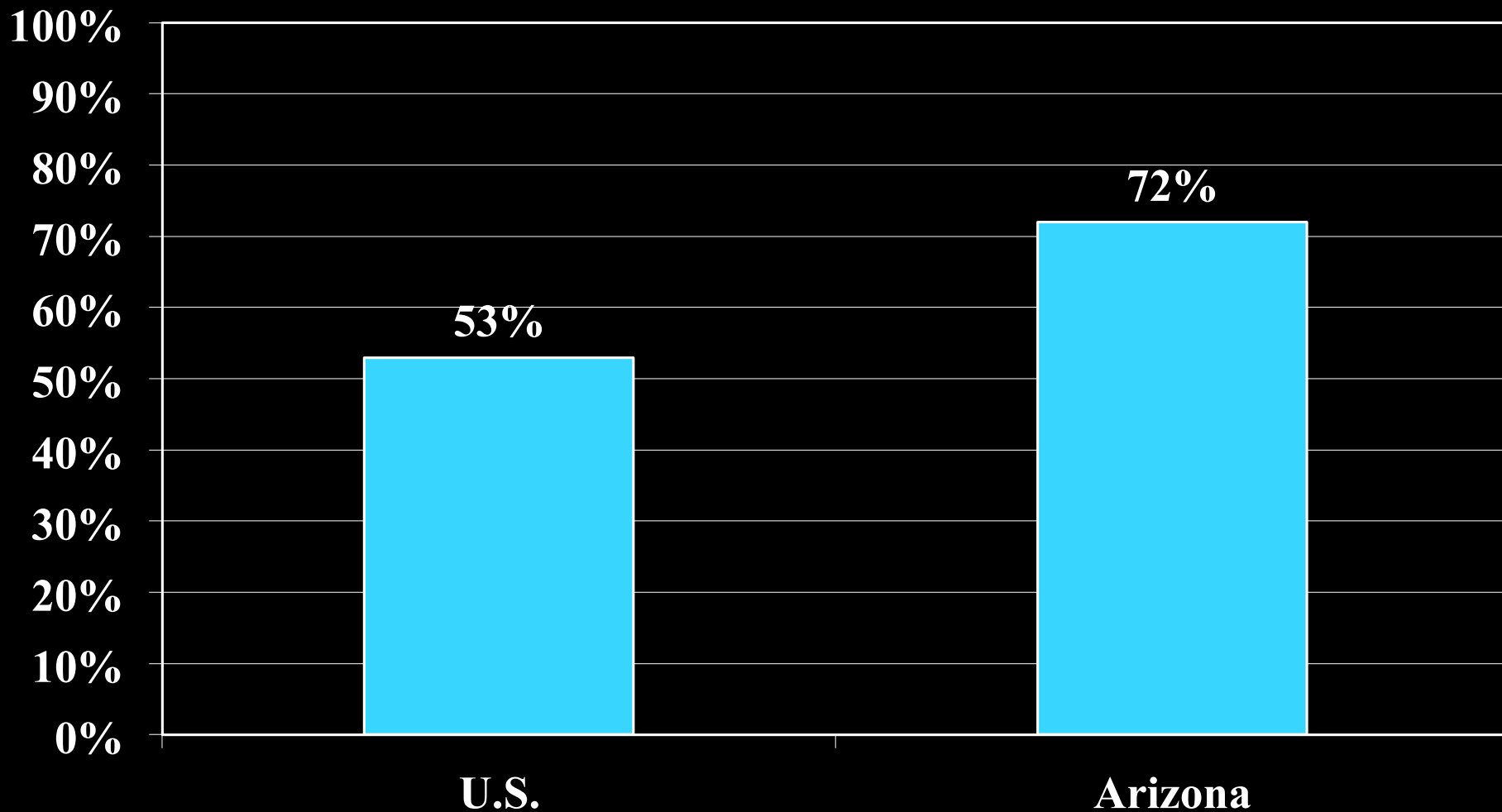
Extremely/Very Sure That GW Has Been Happening



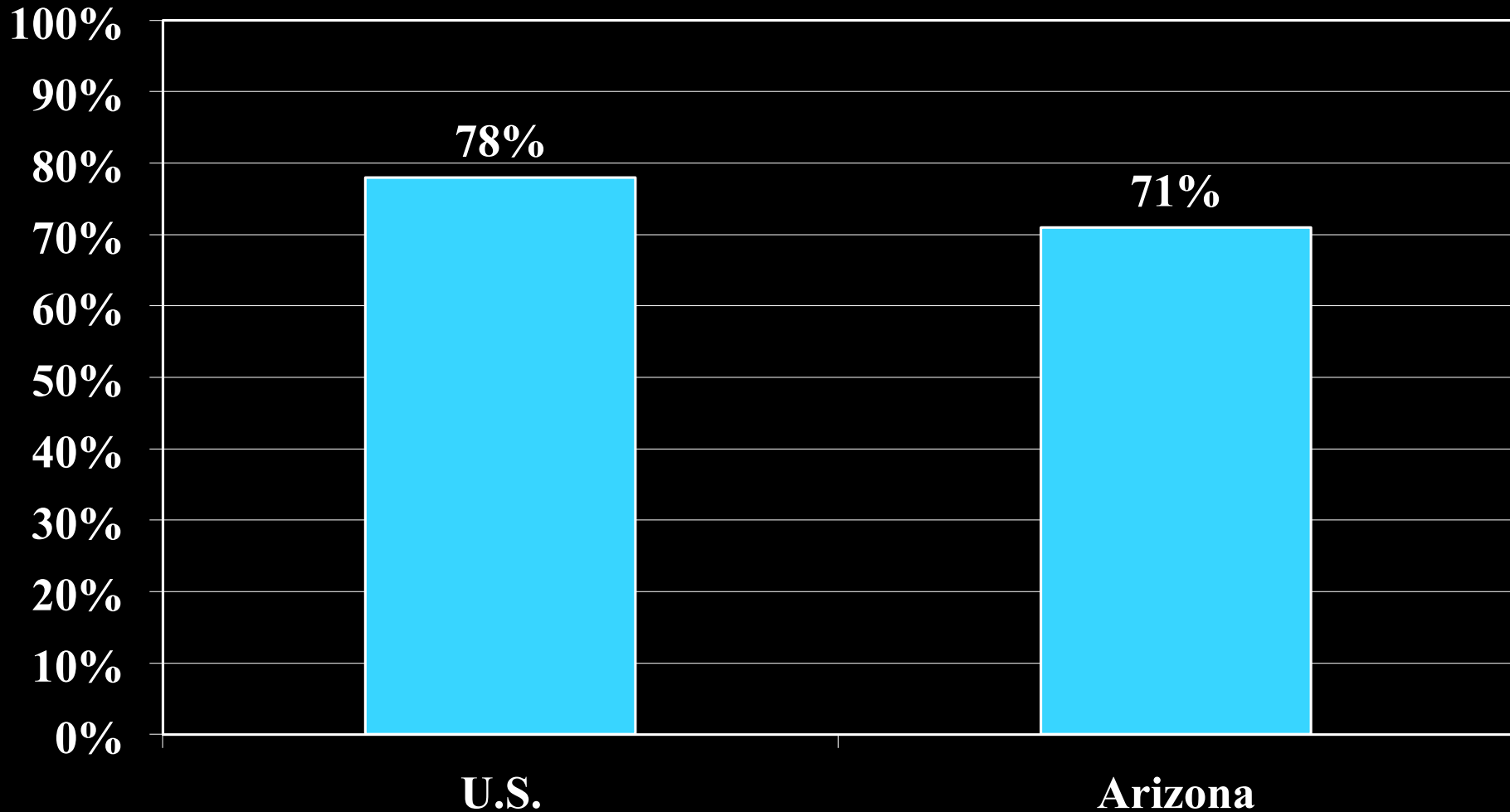
GW Is Due to Human Activity



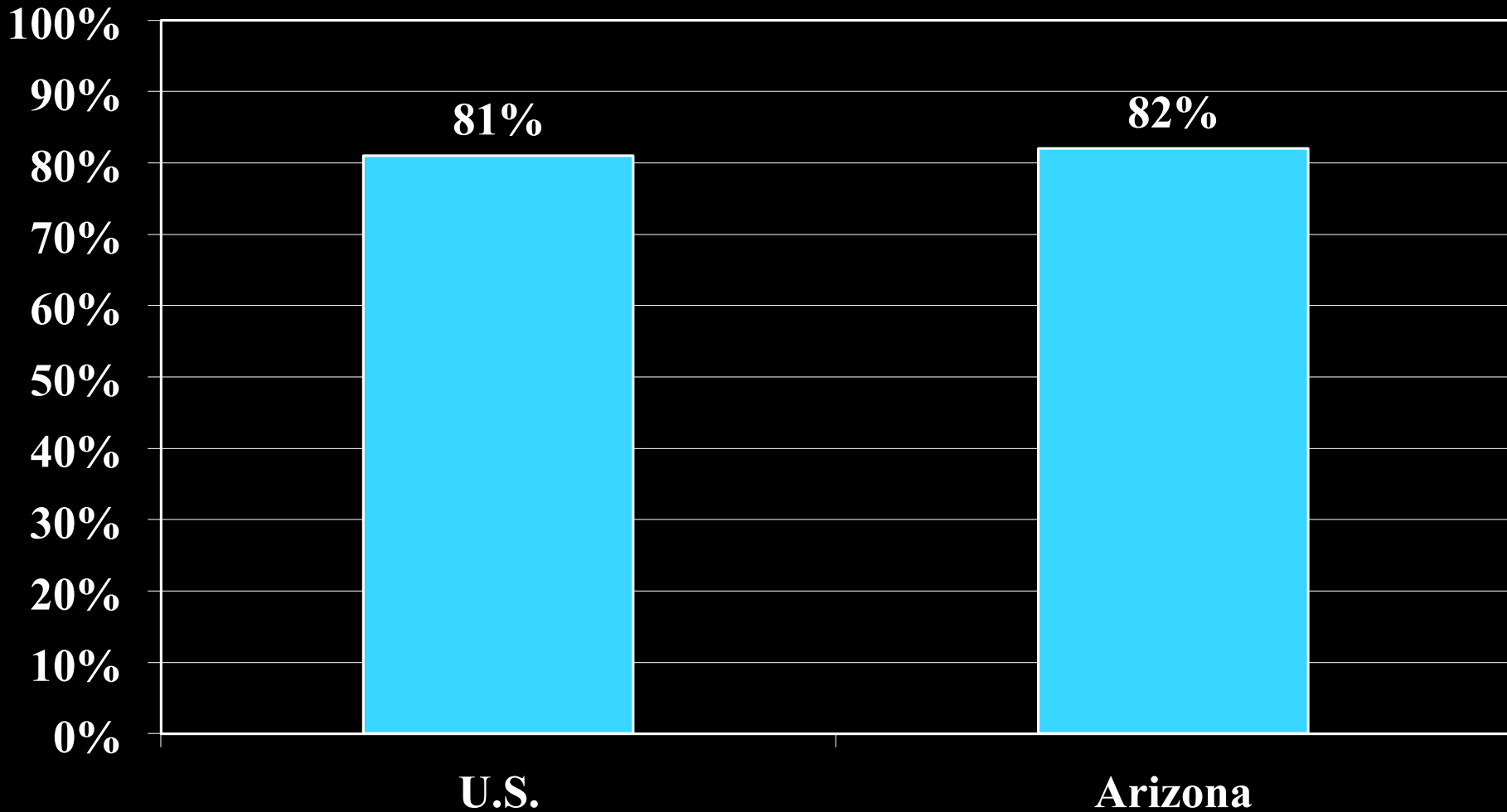
5 Degree Increase Would Be Bad



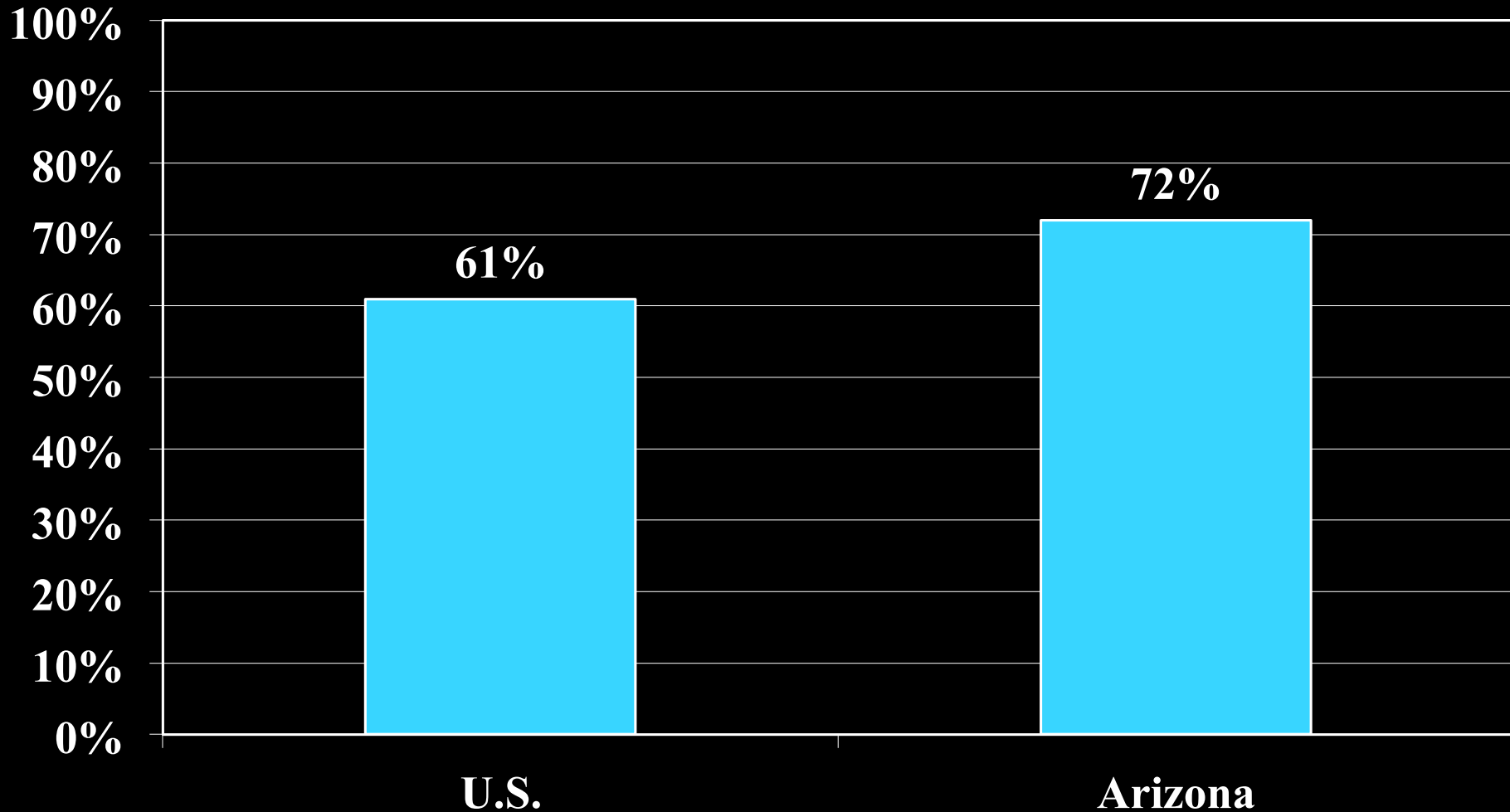
GW Will be a Very/Somewhat Serious Problem for the U.S.



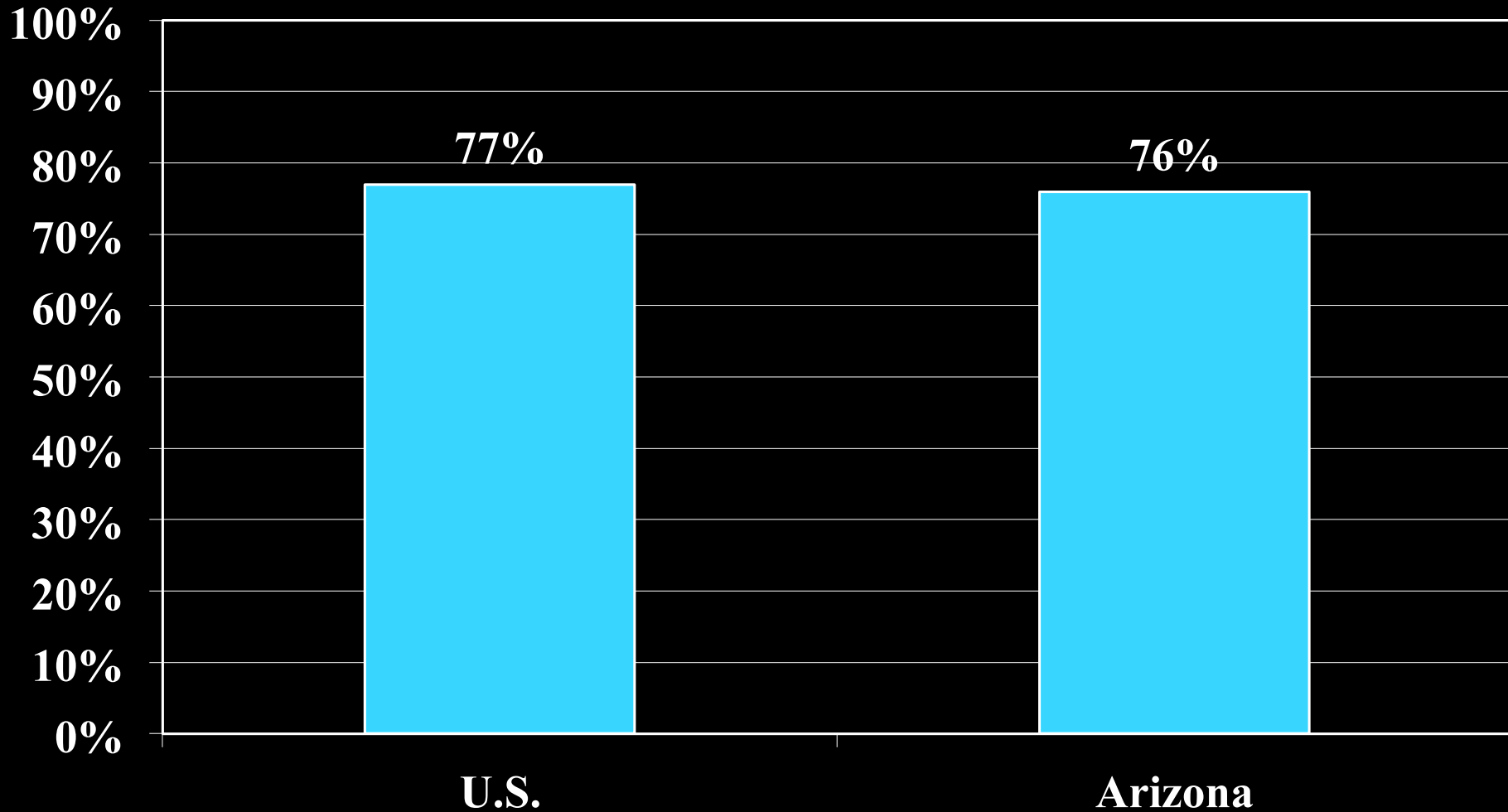
GW Will be a Very/Somewhat Serious Problem for the World



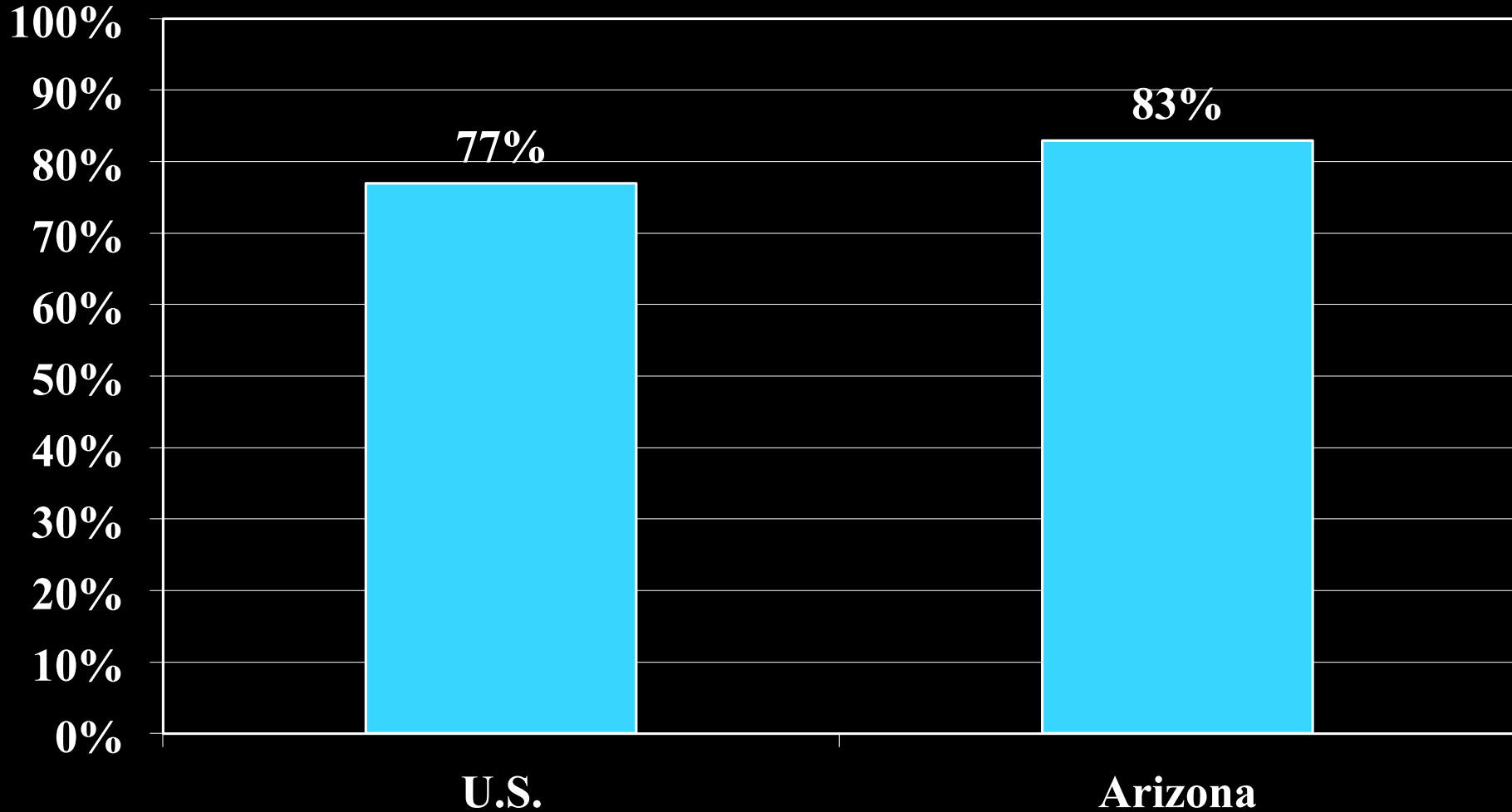
Federal Government Should Do More to Deal with GW



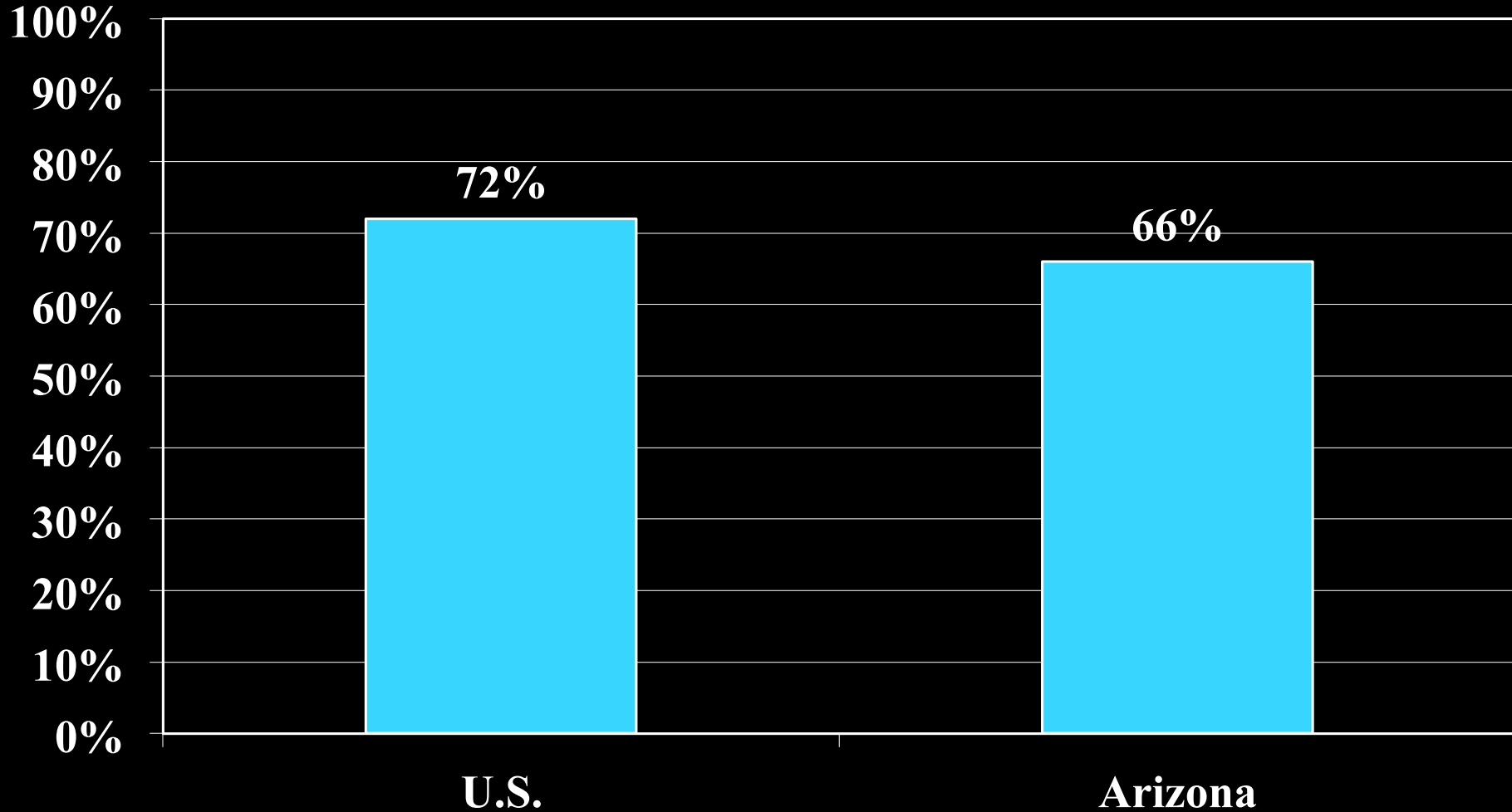
Federal Government Should Limit Business Emissions of Greenhouse Gasses



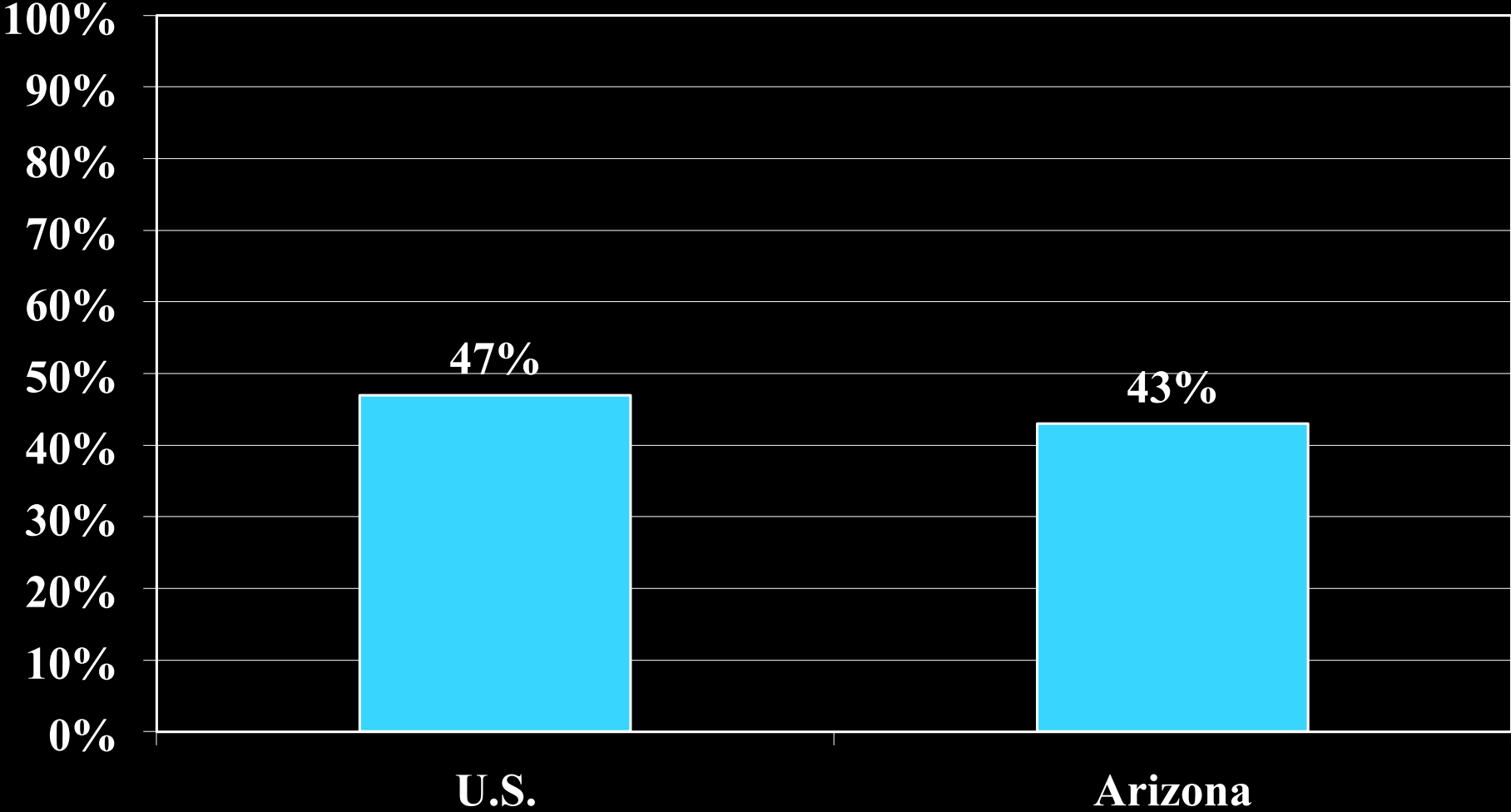
Favor Federal Tax Breaks to Produce “Green” Energy



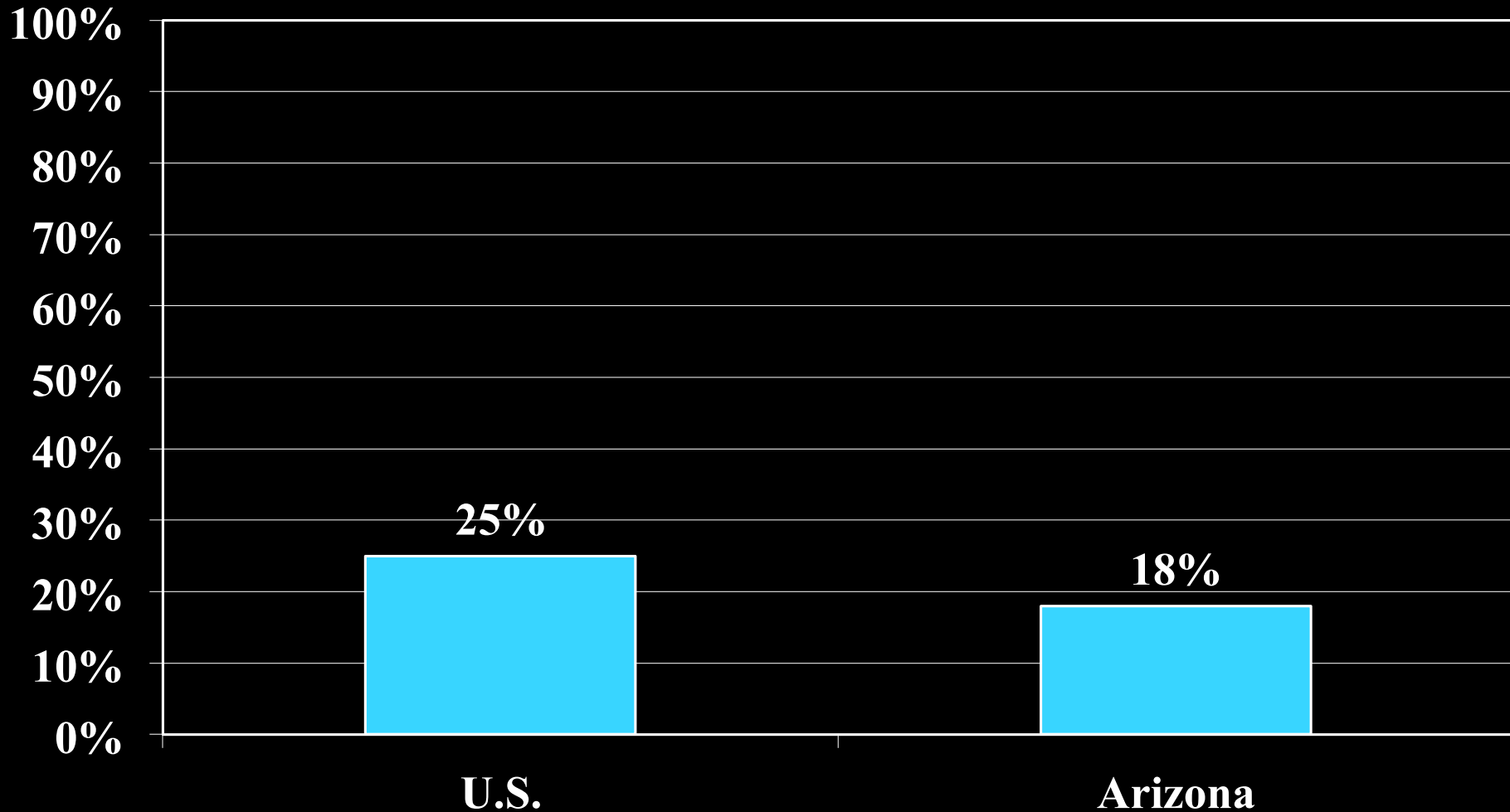
Favor Cap and Trade System



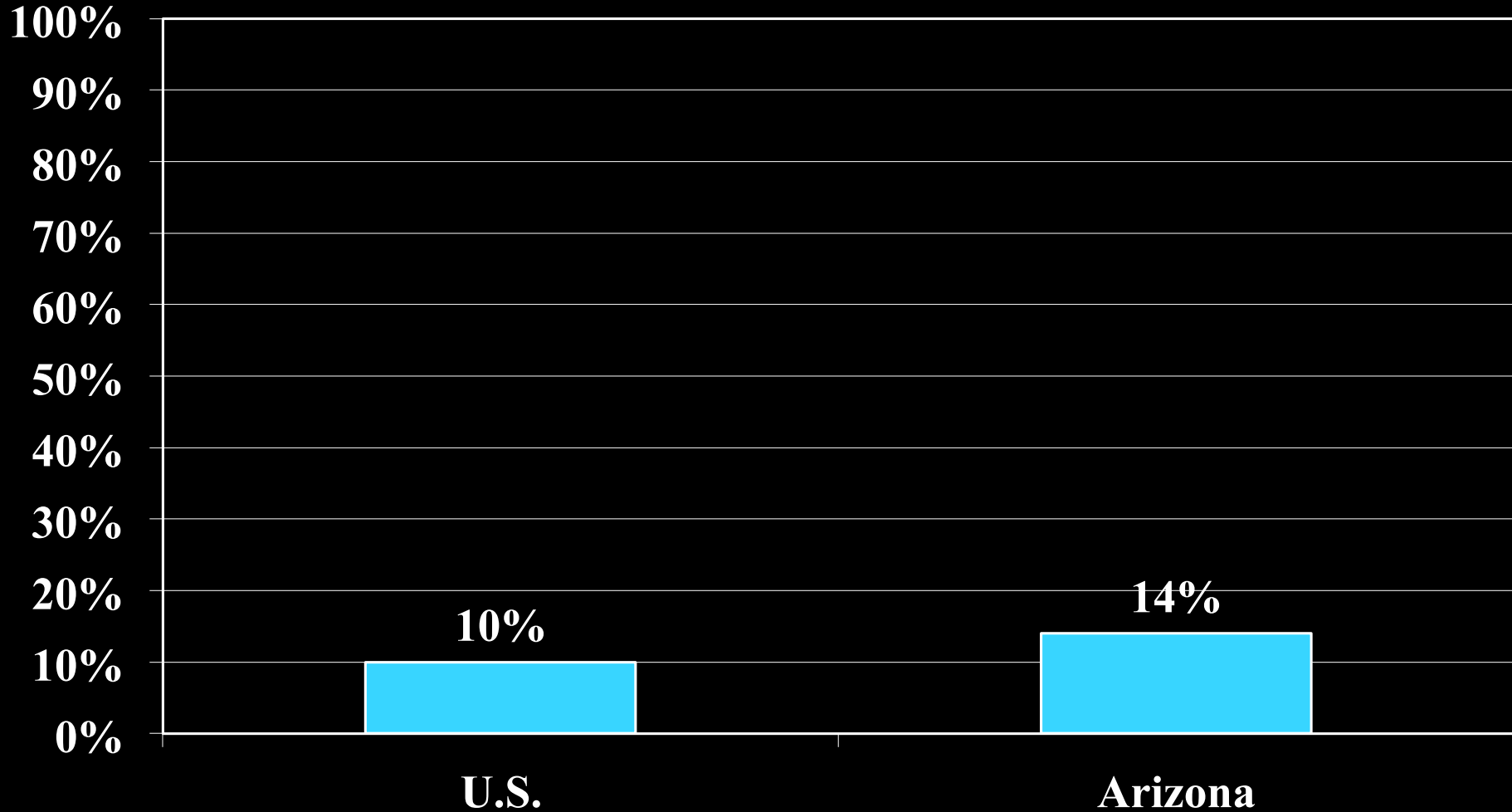
Favor Federal Tax Breaks to Build Nuclear Power Plants



Favor Increasing Electricity Taxes to Reduce Consumption



GW Issue Public Membership



Conclusions