

# **Cap-and-Trade Support Linked to Revenue Use**

A report from the National Surveys on Energy and Environment

#### Introduction

The Obama Administration's creation of the Clean Power Plan to reduce greenhouse gas emissions from the electric power sector has renewed interest in possible state or regional adoption of cap-and-trade programs to meet mandatory reduction targets. The latest version of the National Surveys on Energy and Environment (NSEE) sought to understand Americans' awareness of existing cap-andtrade programs in their state, and to gauge their receptiveness to this policy option. The survey finds that a large percentage (71%) of Americans do not know whether their state had adopted a cap-and-trade program, and more than a third (38%) of Americans haven't formed an opinion about whether or not their state should adopt such an approach to reducing greenhouse gas emissions. When provided with more details about various options on how revenues generated through allowance auctions from such a program might be used, more Americans express an opinion, and some options clearly rise to the top. In particular, support is highest amongst both Republicans and Democrats for a cap-and-trade program in which revenues are used to expand energy efficiency programs.

# **Key Findings**

- 1. Very few Americans (29%) know whether their state has adopted a capand-trade program.
- Over a third (38%) of Americans volunteered that they were "not sure" about whether or not their state should have a cap-and-trade program, indicating that a large number of Americans have not yet formed an opinion on such policies.
- 3. Public support for a state cap-and-trade program is strongly correlated with belief in global warming. There is a weaker connection with political party affiliation, though Democrats are consistently more likely to support cap-and-trade policies than are Republicans.
- 4. Residents in states that currently have cap-and-trade are no more likely than other Americans to support cap-and-trade.
- 5. When provided with five different variations on how revenues from a cap-and-trade program might be used, three options garner higher public support than the others: using revenues to expand energy efficiency programs, to expand the use of renewable energy, or to reduce other taxes. In contrast, more Americans would oppose cap-and-trade in their state if revenues were used to support highway and bridge improvements or if all revenue were placed into a state trust fund.
- 6. Using cap-and-trade revenues to expand energy efficiency programs is the only option that garners more support (44%) than opposition (39%) among Republicans.

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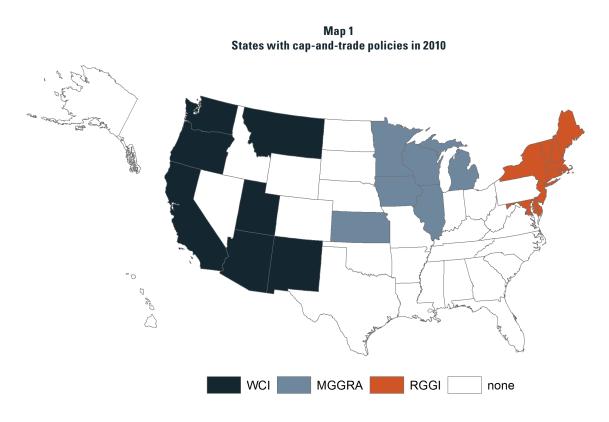
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# The Cap-and-Trade Landscape

Cap-and-trade has been a prominent focal point in US congressional and international deliberations over policy options to reduce greenhouse gas emissions during the past two decades. Also known as a form of emissions trading, cap-and-trade offers a market-based approach to reducing emissions through creation of a national or regional cap on total emissions that declines over time, but which affords considerable compliance flexibility. Indeed, emission allowances granted by governmental entities can be traded through established markets, with the potential of delivering cost-effective emission reductions. The United States pioneered the application of this tool to conventional air contaminants through adoption of a cap-and-trade program for sulfur dioxide emissions through the 1990 Clean Air Act Amendment, and championed it internationally for carbon emissions in the 1990s and 2000s. This policy approach has been widely heralded by ideologically diverse economists, although it has not transitioned smoothly into adoption by political institutions as a means of combating global warming.



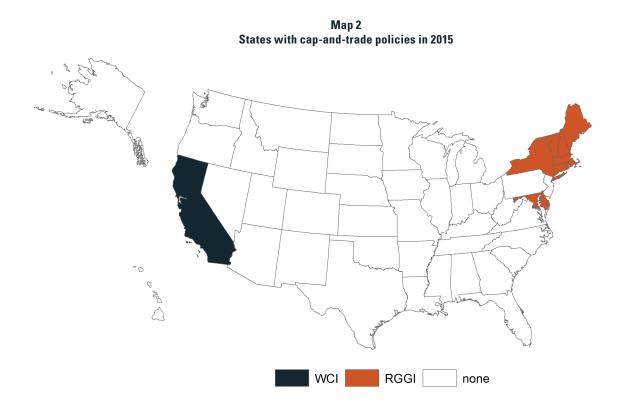
Over the past two decades, carbon cap-and-trade proposals have been repeatedly introduced in Congress, although to date only state governments have adopted this policy approach. In 2002, New Hampshire became the first state to adopt cap-and-trade for greenhouse gas emissions via legislation, after Massachusetts pioneered administrative adoption in the previous year.<sup>3</sup> This early state experimentation diffused widely in the 2000s, reaching a peak of 23 states that had made a commitment by 2008. These adopting states were spread across the continent, although divided into regional clusters in the Northeast (Regional Greenhouse Gas Initiative or RGGI), the Midwest (Midwestern Greenhouse Gas Reduction Accord or MGGRA), and the West (Western Climate Initiative or WCI); see *Map 1*. At the beginning of 2010, these 23 state programs appeared likely either to diffuse to other states or to be folded into federal legislation. In fact, the passage of the American Clean Energy and Security Act (ACESA) by the House of Representatives in 2009 borrowed heavily from early-state experience, but would have served to freeze all existing state programs for at least five years while the new federal program was implemented.<sup>4</sup>

This point, however, proved to be the political high water mark for cap-and-trade in the United States. The Senate failed to match ACESA with a bill and no subsequent Congress has given cap-and-trade serious consideration. Rather than further diffusion, 13 states have retracted their earlier commitments, leaving nine of the 10 original RGGI states and California as the only states sustaining earlier commitments and moving cap-and-trade into implementation (see *Map 2*).



Once a darling of climate policy deliberations, cap-and-trade has seen a shift in its political fortunes during the current decade. At times referred to as "cap-and-tax," opponents have contended that cap-and-trade is really a form of taxation that could produce significant spikes in energy prices and substantially expand the role of government in the energy sector. Some have also pointed to operational problems encountered in other early attempts to adopt cap-and-trade for greenhouse gas emissions, such as the European Union's Emissions Trading Scheme.

Nonetheless, recent developments have raised the issue of whether cap-and-trade might be ready for a second act in the United States. The 10 remaining state programs have proven quite durable politically and administratively, including California's expansion from the electricity sector into transportation earlier this year. These jurisdictions have utilized the mechanisms of auctioning allowances rather than distributing them free of charge, thereby producing new revenue for governmental allocation. In the RGGI states, revenues from auction allowances have generally been applied to state energy efficiency programs and have helped build political support.



Meanwhile, California has scattered its revenues across a diverse set of programs that often lack a clear link to climate change and have fueled battles among potential funding recipients. In turn, the Obama Administration has identified cap-and-trade as one prominent tool (or "building block") for potential state compliance with its forthcoming Clean Power Plan. Under this mechanism, each state will receive an emissions reduction budget through 2030 from the federal government but be allowed to negotiate emission reduction plans. Cap-and-trade is one of many options and among the few with market-based elements. Thus far, officials in states such as Illinois, Pennsylvania, and Virginia have expressed interest in revisiting cap-and-trade as a path for achieving Clean Power Plan compliance.

Previous waves of the NSEE have examined public support for and opposition to cap-and-trade policies, although these have generally focused on the federal level and have not addressed policy revenue use options from allowance auctions. The Spring 2015 survey examined public awareness of whether or not cap-and-trade has been adopted within the borders of a respondent's state and also their response to the idea that their state might adopt cap-and-trade. In turn, it reviewed a series of possible revenue uses, drawing from actual experience with cap-and-trade or other market-based policies linked to energy use and development to determine whether various fund allocation scenarios influence support or opposition levels. Because of the idea of t

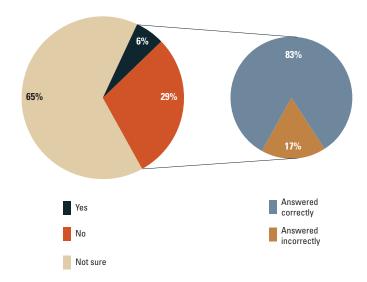


# Few Americans Know Their State's Cap-and-Trade Status

Despite the fact that cap-and-trade has been a prominent political issue and more than half of Americans lived in a state with such a policy a half-decade ago, very few Americans know whether their state has adopted a cap-and-trade program. An overwhelming 65% of respondents volunteered that they "didn't know" or were "not sure" if their state has such a program (see *Figure 1*). However, among those who answered the question, most (83%) answered correctly (see *Figure 1* inset).

# Figure 1 Respondents' knowledge of their state's cap-and-trade policy

Question text: "Some states and a number of other nations have adopted a policy that requires electric utilities to sell or trade allowances tied to their emissions of greenhouse gases. These allowances can be distributed through an auction process that may increase the cost of energy for consumers and also produce funds for government. This policy is commonly known as cap-and-trade and is intended to reduce greenhouse gas emissions. To the best of your knowledge has your state adopted such a program?"



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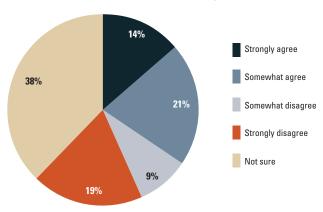
# Many Americans Have Not Formed an Opinion on Cap-and-Trade

In addition to not knowing if their state has a cap-and-trade policy in place, a large percentage of Americans haven't formed an opinion about cap-and-trade at all. When asked whether they agree or disagree that their state should have a cap-and-trade program with no details on how the revenues from such a program would be used, a plurality (38%) weren't sure how they felt about a cap-and-trade program (see *Figure 2a*). This high level of uncertainty holds true across most demographic characteristics—race, age, income, religion—as well as region of the country (see *Appendix 1*). Self-reported conservatives are more likely to have formed an opinion about cap-and-trade than self-reported liberals (see *Figure 2b*), as are those with higher levels of education (see *Figure 2c*).

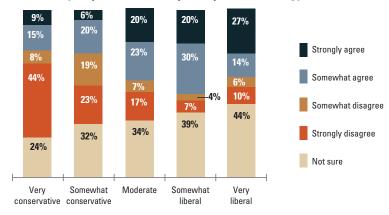
Figure 2
Citizen support for cap-and-trade policy with no details about program

Question text: "Do you strongly agree, somewhat agree, somewhat disagree or strongly disagree that your state should have a cap-and-trade program?"

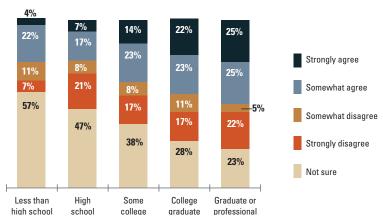
2a. Summary of all responses



#### 2b. By respondent's self-reported political ideology



#### 2c. By respondent's level of education





# When Use of Revenues Is Included, Some Options Rise to the Top

Following this general question about support for cap-and-trade, the NSEE asked the same respondents about their support for five different variations on how revenues from such a program might be used. When provided with these more specific plans, many of those who were originally unsure about the general plan now expressed an opinion. This reduced the "not sure" responses for subsequent questions to 24-26% of all respondents.

While none of the five cap-and-trade options received majority support—predominantly because of the large number of "not sure" responses—three options clearly rose above the others in terms of public support (see *Figure 3*). A plurality of Americans are supportive of their state adopting a cap-and-trade program, even if it were to increase energy costs, but only if all revenues were used to expand energy efficiency programs (47% support - 28% oppose = 19% net support), to expand the use of renewable energy (13% net support), or to reduce other taxes (7% net support). There is net opposition (11%) to using cap-and-trade revenues to support highway and bridge improvements, while an outright majority of Americans (54%) say they would oppose a cap-and-trade policy in their state if all revenue were placed into a permanent fund from which the state could take interest to address long-term state needs.

The relative popularity of these program designs closely parallel the design of existing cap-and-trade programs, perhaps most notably the Regional Greenhouse Gas Initiative (RGGI) and its emphasis on energy efficiency programs in allocating cap-and-trade revenue. Some funding from RGGI has also been allocated to renewable energy programs, while British Columbia's carbon tax operates in a revenue-neutral manner by reducing other taxes. The less popular proposed revenue uses, in turn, are less commonly linked to real-world cap-and-trade programs or carbon taxes. Some states have experimented with increases in energy taxes linked to infrastructure improvements, whereas several states have created permanent trust funds with revenues from oil and gas production/severance taxes, including those which are produced via hydraulic fracturing techniques.<sup>9</sup>

Energy efficiency 30% 17% Renewable energy 22% 19% Reduce other taxes 22% Highway and bridge 31% 24% 13% improvements Permanent fund for 43% 17% future use Strongly Somewhat Somewhat Strongly oppose oppose support support

Figure 3
Support for cap-and-trade policy when use of revenue is specified

See Note 10 for question text "Not sure" responses not shown



### **Support for Cap-and-Trade Higher Among Some Groups**

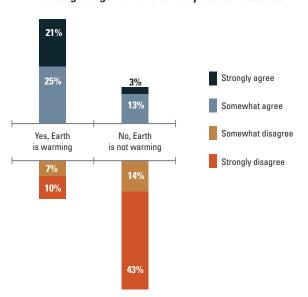
Public support for a state cap-and-trade program is strongly correlated with belief in global warming. Among those who believe the average temperature on Earth has been rising, 46% agree that their state should have a cap-and-trade program, while only 17% disagree (see *Figure 4a*). By contrast, only 16% of those who do not think Earth is getting warmer say they would agree to a cap-and-trade program in their state, and an outright majority (57%) disagree that their state should have such a policy. Attitudes towards cap-and-trade are particularly strong among this latter group, with 43% of those who do not believe the Earth is warming strongly disagreeing that their state should have a cap-and-trade program.

The trends are similar when considering partisan affiliation. While 45% of self-reported Democrats agree that their state should have a cap-and-trade program, the same is true for only 35% of Independents and just 27% of Republicans (see Figure 4b). When presented with more details about how cap-and-trade program revenues would be used, these differences persist. There is net support among Democrats for all options except placing revenues into a permanent fund (see *Figure 5*). Conversely, there is net opposition among Republicans for all options except using revenues to expand energy efficiency programs, suggesting that any possibility for bipartisan consensus on the issue of cap-and-trade might best be connected to future support for energy efficiency.

Figure 4
Support for a state cap-and-trade program, by respondent characteristics

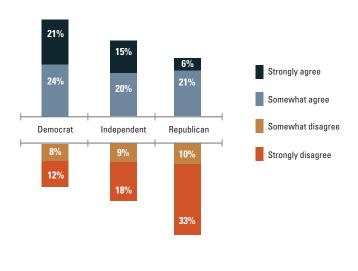
Question text: "Do you strongly agree, somewhat agree, somewhat disagree or strongly disagree that your state should have a cap-and-trade program?"

4a. Responses based on reaction to statement "There is solid evidence that the average temperature on Earth has been getting warmer over the past four decades."



"Not sure" responses not shown

#### 4b. Responses based on political party affiliation



"Not sure" responses not shown

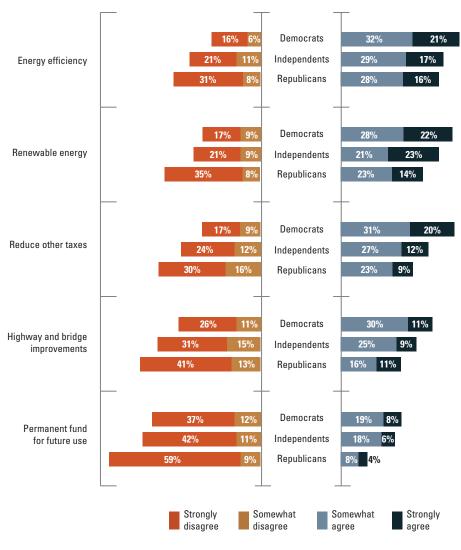


Figure 5
Support for cap-and-trade policy when use of revenue is specified, by political party affiliation

See Note 10 for question text "Not sure" responses not shown



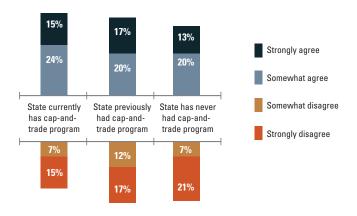
# State's Current Cap-and-Trade Status Has Little Bearing on Opinion

Though one might expect differences among Americans based on whether or not they live in a state with a cap-and-trade program, the NSEE found little evidence of this, at least on the aggregate. There is no significant difference in opinion between residents in states that currently have a cap-and-trade program compared to those in states which previously had a cap-and-trade program or those who live in a state that has never had a cap-and-trade program (see *Figure 6*).

The data from this wave of the NSEE suggest, however, that there may be significant differences in opinion among those who live in states with current cap-and-trade programs—specifically, between residents of California and residents of the states in the Northeast which are part of RGGI. Because of the relatively small sample sizes for both of these groups and subsequently large margins of error, the comparative poll numbers are largely speculative (see *Note 11*). However, additional research to determine if there are indeed statistically significant differences of opinion and knowledge about cap-and-trade between Californians and residents of the Northeast would be extremely useful as additional states consider adopting cap-and-trade programs. We hope to address this in future NSEE waves.

Figure 6
Support for a state cap-and-trade program, by state cap-and-trade program status

Question text: "Do you strongly agree, somewhat agree, somewhat disagree or strongly disagree that your state should have a cap-and-trade program?



"Not sure" responses not shown



#### **Conclusion**

Cap-and-trade has received intensive scrutiny by policy makers at the federal and state levels in recent decades and yet public knowledge of this option appears to be quite low. Indeed, few know whether or not their state has adopted such a program to date or seem to have formed an opinion about whether or not their state should adopt one in the future. Whether the public supports or opposes cap-and-trade will likely depend upon the specifics of the program. Policy designs that closely link revenues to energy efficiency or renewable energy programs are likely to gain the most support, while those that use revenues for non-energy related investments such as infrastructure improvements are likely to see the most opposition. Any state considering possible adoption of cap-and-trade as a compliance option under the Clean Power Plan may want to weigh these design options and how they might influence future public support or opposition.

#### **Methods**

The following report contains the results of a telephone survey of 751 adult (age 18 or older) residents of the United States between April 8 and April 30, 2015. Respondents were interviewed in English on both landlines (334) and cell phones (417) by the staff of the Muhlenberg College Institute of Public Opinion (MCIPO) in Allentown, Pennsylvania on the Institute's Computer Aided Telephone Interviewing (CATI) system. Of the 417 cell phone respondents, 293 had no landlines in their household. Both the landline and cell phone samples were provided by the Marketing Systems Group (MSG), Horsham, Pennsylvania. Both landlines and cell phones were chosen randomly from sampling frames of United States landline and cell numbers provided by MSG.

With a randomly selected sample of 751 respondents the margin of error for the survey is +/- 3.6% at a 95% level of confidence. Margins of error for questions with smaller sample sizes will be larger. In addition to sampling error, one should consider that question wording and other fielding issues can introduce error or bias into survey results. The sample data has been weighted by age, race, educational attainment, income, and gender to reflect 2013 population parameters for these factors provided by the United States Census Bureau. The calculation of sampling error takes into account design effects due to the weighting identified above. In order to reach a representative sample of adult Americans both landlines and cell phones are called up to 10 times. The response rate for this survey as calculated using the American Association of Public Opinion Research (AAPOR) RR3 formula is 11%. Due to rounding, the totals provided in tables may not equal 100. The full instrument will be available upon release of subsequent reports in summer 2015. The instrument was designed by Christopher Borick of Muhlenberg College, Barry Rabe of the University of Michigan, and Erick Lachapelle of the University of Montreal. For more detailed information on the methods employed please contact the MCIPO at 484-664-3444 or email Dr. Borick at cborick@muhlenberg.edu.

## **Funding and Financial Disclosure**

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#### **Notes**

- 1. See Raymond, L. (2003). *Private rights in public resources*. Washington, DC: Resources for the Future Press; Graetz, M. (2011). *The end of energy*. Cambridge, MA: MIT Press.
- 2. Rabe, B. G. (2015). The durability of carbon cap-and-trade policy. *Governance*. Retrieved from http://onlinelibrary.wiley.com/doi/10.1111/gove.12151/epdf
- 3. Rabe, B. G. (2004). *Statehouse and greenhouse: The emerging politics of American climate change policy.* Washington, DC: Brookings Institution Press.
- 4. Rabe, 2015.
- 5. Layzer, J. A. (2012). Open for business: Conservatives' opposition to environmental regulation. Cambridge, MA: MIT Press.
- 6. Ellerman, A. D., Convery, F. J., de Perthuis, C., Alberola, E., Buchner, B. K., Delbosc, A., Hight, C., Keppler, J., & Matthes, F. C. (2010). *Pricing carbon: The European Union emissions trading scheme*. Cambridge: Cambridge University Press.
- 7. See Lachapelle, E., Borick, C., & Rabe, B. G. (2014). *Public opinion on climate change and support for various policy instruments in Canada and the US: Findings from a comparative 2013 poll.* Ann Arbor, MI: The Center for Local, State, and Urban Policy at the Gerald R. Ford School of Public Policy, University of Michigan. Retrieved from http://closup.umich.edu/issues-in-energy-and-environmental-policy/11/public-opinion-on-climate-change-and-support-for-various-policy-instruments-in-canada-and-the-us/; Rabe, B. G., & Borick, C. (2014). *The decline of public support for state climate change policies: 2008-2013.* Ann Arbor, MI: The Center for Local, State, and Urban Policy at the Gerald R. Ford School of Public Policy, University of Michigan. Retrieved from http://closup.umich.edu/issues-in-energy-and-environmental-policy/7/the-decline-of-public-support-for-state-climate-change-policies-2008-2013/
- 8. Amdur, D., Rabe, B. G., & Borick, C. (2014). *Public views on a carbon tax depend on the proposed use of revenue*. Ann Arbor, MI: The Center for Local, State, and Urban Policy at the Gerald R. Ford School of Public Policy, University of Michigan. Retrieved from http://closup.umich.edu/issues-in-energy-and-environmental-policy/13/public-views-on-a-carbon-tax-depend-on-the-proposed-use-of-revenue/
- 9. Rabe, B. G., & Hampton, R. (in press). Taxing fracking: The politics of state severance taxes in the shale era. *Review of Policy Research*.
- 10. The full question text for cap-and-trade revenues-use options, presented in the order asked (not the order displayed in Figures 3 and 5) are:
  - In addition to the states that already have a cap-and-trade program, some other states are considering such a program to comply with federal requirements to reduce greenhouse gases from power plants. There are a number of different policy options in setting up a cap-and-trade program, though. For each option that I mention please tell me if you strongly support, somewhat support, somewhat oppose or strongly oppose your state adopting such a policy. First, would you support a cap-and-trade program in your state if it increased energy costs but used all revenue to reduce other taxes? [reduce other taxes]
  - What if a cap-and-trade program in your state increased energy costs but used all revenue to support the expanded use of renewable energy? Would you strongly support, somewhat support, somewhat oppose or strongly oppose your state adopting such a policy? [renewable energy]
  - What if a cap-and-trade program in your state increased energy costs but used all revenue to support expanded energy efficiency programs that help to reduce household electricity use? Would you strongly support, somewhat support, somewhat oppose or strongly oppose your state adopting such a policy? [energy efficiency]
  - What if a cap-and-trade program in your state increased energy costs but used all revenue to support highway and bridge improvements? [highway and bridge improvements]
  - And what if a cap-and-trade program in your state increased energy costs but placed all revenue into a permanent fund from which the state could take interest to address long-term state needs? [permanent fund for future use]

#### The Center for Local, State, and Urban Policy

- 11. The NSEE polled 82 Californians, a state that has maintained its cap-and-trade-program, and 90 residents that live in one of the nine Northeastern states that currently belong to RGGI. These small sample sizes result in a margin of error of ±10.8% and ±10.3%, respectively, limiting the generalizability of the survey findings within these states/regions. However, there appear to be some striking differences between the California and RGGI respondents that might warrant additional research. Specifically:
  - Respondents in California are more unsure than those in RGGI states if their state has a cap-and-trade program, and are also more likely to answer the question incorrectly.

Question text: "Some states and a number of other nations have adopted a policy that requires electric utilities to sell or trade allowances tied to their emissions of greenhouse gases. These allowances can be distributed through an auction process that may increase the cost of energy for consumers and also produce funds for government. This policy is commonly known as capand-trade and is intended to reduce greenhouse gas emissions. To the best of your knowledge has your state adopted such a program?"

	State currently has cap-and-trade program		State previously had cap-and-trade program	State has never had cap-and-trade program
	RGGI	CA		
Yes	21%	9%	2%	4%
No	16%	13%	29%	35%
Not sure	63%	78%	69%	61%

 Respondents in the RGGI states are more likely to agree that their state should have a cap-and-trade program than respondents in California (43% vs. 35%).

Question text: "Do you strongly agree, somewhat agree, somewhat disagree or strongly disagree that your state should have a cap-and-trade program?"

	State currently has cap-and-trade program		State previously had cap-and-trade program	State has never had cap-and-trade program	
	RGGI	CA			
Strongly agree	19%	11%	17%	13%	
Somewhat agree	24%	24%	20%	20%	
Somewhat disagree	6%	9%	12%	7%	
Strongly disagree	14%	16%	17%	21%	
Not sure	37%	40%	34%	40%	



On each of the more specific proposals that include use of cap-and-trade revenue, respondents in the RGGI states are more supportive than any other group of respondents.

Percentage of respondents that said they would "strongly support" or "somewhat support" a cap-and-trade program in their state if the revenues were used for each of the following. (See Note 10 for exact question text).

	State currently has cap-and-trade program		State previously had cap-and-trade program	State has never had cap-and-trade program	
	RGGI	CA			
Energy efficiency	50%	47%	48%	46%	
Renewable energy	51%	42%	44%	42%	
Reduce other taxes	50%	35%	40%	39%	
Highway and bridge improvements	45%	27%	38%	29%	
Permanent fund for future use	31%	17%	23%	21%	



# **Appendix 1**

Responses to "Do you strongly agree, somewhat agree, somewhat disagree or strongly disagree that your state should have a cap and trade program?" by selected demographic characteristics

#### By Race/Ethnicity

	White/ Caucasian	African- American	Hispanic	Asian
Strongly agree	15%	11%	10%	21%
Somewhat agree	18%	15%	33%	52%
Somewhat disagree	9%	14%	0%	0%
Strongly disagree	21%	21%	12%	9%
Not sure	37%	40%	45%	18%
N	448	96	111	33

Note: Additional races/ethnicities dropped because of small numbers of respondents

#### By Age

	18-34	35-49	50-64	65 and Over
Strongly agree	11%	19%	13%	14%
Somewhat agree	27%	20%	21%	16%
Somewhat disagree	9%	9%	10%	6%
Strongly disagree	9%	18%	23%	22%
Not sure	43%	35%	33%	42%
N	180	194	215	156

#### **By Annual Household Income**

	Less than \$20,000	\$20,000- 40,000	\$40,000- 60,000	\$60,000- 80,000	\$80,000- 100,000	Over \$100,000
Strongly agree	11%	17%	15%	17%	19%	22%
Somewhat agree	14%	28%	21%	19%	19%	28%
Somewhat disagree	8%	2%	14%	17%	13%	5%
Strongly disagree	18%	17%	23%	18%	17%	26%
Not sure	49%	36%	26%	29%	33%	19%
N	65	109	117	72	48	78

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# By Religion/Creed

	Protestant	Catholic	Other religion	Atheist
Strongly agree	16%	10%	14%	29%
Somewhat agree	16%	27%	30%	7%
Somewhat disagree	8%	6%	9%	11%
Strongly disagree	24%	16%	13%	18%
Not sure	36%	41%	34%	36%
N	289	204	154	28

# By Region of the Country

	Northeast	South	Midwest	West
Strongly agree	18%	13%	14%	14%
Somewhat agree	25%	17%	21%	24%
Somewhat disagree	4%	8%	11%	9%
Strongly disagree	13%	24%	20%	14%
Not sure	40%	38%	34%	39%
N	146	275	167	161



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