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The Climate of Opinion: State Views on Climate Change and Policy Options

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The 2008 presidential race may be the first in which the candidates' positions on climate change have some influence on electoral outcome. Barack Obama and John McCain have already carved out policy proposals, reflecting the growing saliency of climate change issues among voters on the left and right. While the 110th Congress will likely adjourn with little done on the environment, legislators – trying to position themselves and their committees for lead roles in the next Congress – will ultimately have to respond to the growing number of Americans concerned about global warming. However, the next U.S. president and Congress, as in previous years, will likely struggle to formulate a response.



© Reuters/Andres Forza – Splinters of ice peel off from one of the sides of the Perito Moreno glacier.

Ironically, at a time when federal institutions are giving expanded attention to the issue, state governments have already taken a lead role in most areas of American climate policy development. State policy responses include mandating increases in energy from renewable sources, reducing carbon emissions from vehicles, and developing cap-and-trade policies to reduce greenhouse gas emissions from utilities and major manufacturers. Therefore, any future federal policy has the opportunity to learn from real state experience, including public receptivity to policy.

A good deal of research has attempted to discern the public's views on climate change, which was reviewed in an earlier *Issues in Governance Studies* paper (see: www.brookings.edu/papers/2008/07_global_warming_rabe_borick.aspx). But much of the existing analysis has focused on national samples and averages, and does not take into account state or regional variation. Nor has it weighed

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The Climate of Opinion: State Views on Climate Change and Policy Options



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federalism concerns, namely support for federal as opposed to state-based policy strategies.

Based upon a telephone survey conducted in late 2007, this paper examines public attitudes towards climate change, with particular emphasis on policy options, in Michigan and Pennsylvania – two states deemed major battlegrounds for McCain and Obama.

Key Findings:

- § **Michigan and Pennsylvania respondents acknowledge that global temperatures are indeed increasing and that global warming is a serious problem.** Seventy-nine percent of Michigan respondents concur that there is “solid evidence” that average global temperatures have been increasing, matched by 74 percent of Pennsylvania respondents. Nearly one half of Michigan and Pennsylvania respondents see global warming as a “very serious” problem and approximately three-quarters view it as either a “very serious” or “somewhat serious” problem.
- § **Michigan and Pennsylvania respondents support both federal and state-based policy strategies.** Pennsylvania and Michigan respondents place a “great deal of responsibility” for “taking actions to reduce global warming” with both the federal (56% PA and 48% MI) and state (38% PA and 33% MI). Most respondents see both levels of government holding some degree of responsibility.
- § **Michigan and Pennsylvania respondents support regulatory approaches to climate change.** Two of the most popular policy options, as measured by our survey responses, are government mandates to increase vehicular fuel efficiency and increase the level of electricity provided by renewable energy sources.
- § **Public support declines markedly as one moves toward market-based systems such as cap-and-trade and energy taxes.** Only 17 percent of Pennsylvanian and 12 percent of Michigan respondents expressed strong support for policy that would “allow businesses to buy and sell permits to release greenhouse gases as a means of reducing emissions.”
- § **Public support declines drastically when policy proposals suggest direct imposition of costs on citizens, whether through some form of taxation or a surcharge on energy purchases.** The margin of opposition to increased gasoline taxes was approximately three-to-one in both states and only slightly lower for a proposed increase in taxes on all fossil fuels. Majorities in both states also opposed a proposal to levy a “surcharge on electricity bills and use the money from the charge to support renewable energy development.”

In addition to looking to states for possible policy solutions, Washington must also confront several questions, including how to design and implement policies with states that have very different levels of capacity and patterns of emissions growth. It must also contend with a blizzard of demands for special treatment from key interests, ranging from established vehicle manufacturers to entrepreneurial proponents of new technologies designed to save energy. All this will likely unfold amid concern over spikes in energy prices, including gasoline, which could be further influenced by new climate initiatives. As a result, there is no guarantee of federal action at any point in the near future, leaving the possibility of continuing state domination of this policy area for some time to come.

Michigan and Pennsylvania

At first glance, Michigan and Pennsylvania might seem virtual mirrors of each other. Both states have tipped the same way in the last seven presidential elections (four consecutive Democratic wins on the heels of three straight Republican victories during the 1980s), although many of these contests have been quite close. Both have large manufacturing bases that have suffered from considerable decline, especially in the current decade. They also tend to consume substantial amounts of energy per capita and rely heavily on coal as a primary electricity source, all highly relevant to concerns about greenhouse gases.

The two states also have remarkably similar profiles in their pattern of greenhouse gas emissions. Whereas American emissions increased 16 percent between 1990 and 2005, both Michigan and Pennsylvania emissions increased by only four percent during this period. Much of the difference in these averages is reflected in emission declines of more than 25 percent from the industrial sectors in the two states. These declines pattern the experience of some contracting Eastern European economies after the end of the Cold War and are hardly models for transitioning toward a carbon-constrained society. One then might expect that a sampling of Michigan and Pennsylvania residents would produce similar findings, including opposition toward any policy initiative that might further threaten core industries such as vehicle manufacturing in Michigan or coal mining in Pennsylvania.

At the same time, these two states have taken markedly different approaches to energy and climate policy in the last decade. Michigan restructured its electricity system in the late 1990s and used that process to weaken or eliminate many existing energy efficiency programs. It ranks among the least active states in the nation in terms of promoting energy efficiency, developing renewable energy sources, or taking a pro-active approach to climate change. Indeed, Michigan was among the last states to resist taking federal funding to study the issue and its legislature has thus far failed to reach any consensus in response to new renewable energy proposals.

The public considers climate change to be a genuine issue and a rather serious problem, indicating perhaps a willingness to support some policy options.

By contrast, Pennsylvania has made energy diversification and climate mitigation prominent policy issues in recent years, reflected in a number of policy initiatives that are just beginning to move into implementation. For example, the Commonwealth enacted a renewable portfolio standard in 2004, mandating an increase in the level of electricity that must come from renewable sources from 1.5 percent in 2007 to 18 percent in 2020. Governor Edward Rendell has pushed the state legislature for expanded funding for numerous climate-related initiatives in the last year, arguing that Pennsylvania can emerge as a regional and national leader in the development of climate-friendly technologies. All of this activity has received considerable attention from Pennsylvania media outlets. Consequently, one might anticipate Pennsylvania residents to be more familiar with and supportive of energy and climate policy alternatives, to the extent that state policies reflect public sentiment.

A Serious Issue

Both Michigan and Pennsylvania respondents tend to share remarkably similar views on whether global temperatures are increasing and whether or not climate change constitutes a serious problem, as demonstrated in Table 1. Seventy-nine percent of Michigan respondents concur that there is “solid evidence” that average global temperatures have been increasing, matched by 74 percent of Pennsylvania respondents. Sixteen percent of respondents in both states disagreed that such evidence exists, with most of the remaining respondents uncertain. Among those who did perceive such evidence of warming, nearly two-thirds attributed these increases to either “human activity” or a combination of such activity and “natural patterns.” The remainder either emphasized natural patterns or were uncertain.

Table 1. “From what you’ve read and heard, is there solid evidence that the average temperature on Earth has been getting warmer over the past four decades?”

	Yes	No	Not Sure	Refused
PA	74%	16%	8%	1%
MI	79%	16%	5%	<1%

Source: Compiled by authors

We also found that respondents in the two states tended to have very similar views on the severity of the problem posed by global warming. As Table 2 indicates, nearly one half of both Michigan and Pennsylvania respondents see global warming as a “very serious” problem and approximately three-quarters view it as either “very serious” or “somewhat serious.” In contrast, very small percentages saw global warming as either “not too serious” or “not a problem.”

Collectively, these findings give some indication that the public considers climate change to be a genuine issue and a rather serious problem, indicating perhaps a willingness to support some policy options.

Table 2. “In your view is global warming a very serious problem, somewhat serious, not too serious, or not a problem?”

	Very Serious	Somewhat Serious	Not Too Serious	Not a Problem	Not Sure	Refused
PA	47%	30%	12%	8%	2%	<1%
MI	46%	29%	12%	12%	<1%	0%

Source: Compiled by authors

A Multi-Level Governmental Responsibility

Much policy analysis presumes that climate change policy is the responsibility of national governments, most likely working through some international collaboration. However, the last decade of experience in the United States and other federal systems of government has challenged that presumption, given the unexpected degree of state and sub-national engagement in jurisdictions such as Pennsylvania. This survey was conducted at the very point at which legislatures in Lansing and Harrisburg, as well as the 110th Congress, were giving considerable attention to a series of climate-related initiatives. As a result, these actions provided a context to ask citizens their views of the appropriate level or levels of government responsibility for responding to climate change.

Pennsylvania respondents were somewhat more likely than their Michigan counterparts to place a “great deal of responsibility” for “taking actions to reduce global warming” with both the federal (56% to 48%) and state (38% to 33%) governments, as shown in Table 3. But their responses are essentially identical when adding together those who supported either a “great deal” or “some” responsibility. In all instances, only small minorities said either government had “no responsibility” for taking actions. Fifteen percent of respondents in both states took this position concerning state government whereas 11 percent of Pennsylvania and 13 percent of Michigan respondents took this view in relation to the federal government.

Table 3. “For each level of government that I mention please tell me if it has a great deal of responsibility, some responsibility or no responsibility for taking actions to reduce global warming.”

		Federal Government				
		Great Deal of Responsibility	Some Responsibility	No Responsibility	Not Sure	Refused
PA		56%	30%	11%	3%	1%
MI		48%	36%	13%	2%	<1%

		State Governments				
PA		38%	44%	15%	2%	1%
MI		33%	49%	15%	3%	<1%

Source: Compiled by authors

Clear Policy Preferences—and Dislikes

The 110th Congress and state legislative sessions across the nation offer a laboratory to test the feasibility of virtually every conceivable method to reduce greenhouse gas emissions through legislation. These run the gamut from those that use regulatory tools to impose uniform behavior (such as mandates to reach a certain level of energy from renewable sources) to those that are more flexible and utilize market-based approaches (such as cap-and-trade systems or energy taxes). A diverse range of economists and policy analysts have weighed in on this issue, overwhelmingly endorsing the latter body of policies. Such analysis tends to conclude that market-based strategies can achieve emissions reductions in a more cost-effective manner and provide enormous flexibility in determining compliance. In contrast, regulatory approaches are derided as highly-inefficient, using “command-and-control” mechanisms that are likely to heighten the costs associated with emission reductions.

This survey, however, finds that popular response to policy options is in essence the reverse of scholarly analysis. We sampled the views of Michigan and Pennsylvania residents on a wide range of policy options, all of which have been embraced in one or more states and received some focus in the 110th Congress. We consistently find the greatest level of public support for those approaches that clearly fall into the regulatory realm whereas support declines markedly as one moves toward market-based systems such as cap-and-trade and energy taxes.

Two of the most popular policy options, as measured by our survey responses, are government mandates to increase vehicular fuel efficiency and increase the level of electricity provided by renewable energy sources. Both involve direct governmental mandates and are generally derided by policy analysts as inefficient. Moreover, one might expect considerable resistance to such policies, particularly vehicular fuel efficiency in Michigan as this has long

Overwhelming majorities of respondents in both states support requiring manufacturers “to increase the fuel efficiency of their vehicles.”

been a highly-sensitive issue given the dominant presence of mainstay American vehicle firms such as General Motors and Ford Motor Company. In turn, the substantial role of coal in the Pennsylvania economy, both in mining and use as a primary electricity source, might incline its residents to oppose any mandatory shift toward other electricity sources.

But overwhelming majorities of respondents in both states support requiring manufacturers “to increase the fuel efficiency of their vehicles,” as reflected in Table 4. This question was posed shortly before Congress enacted the 2007 Energy Independence and Security Act, which did increase Corporate Average Fuel Efficiency standards for the first time in decades. In Pennsylvania, three out of four respondents offered “strong support” for this proposal, followed by 63 percent of their counterparts in Michigan. In contrast, only six percent of Pennsylvania and 13 percent of Michigan respondents said that they were either “somewhat” or “strongly” opposed to such a policy.

Table 4. “The government should require auto makers to increase the fuel efficiency of their vehicles”

	Strongly Support	Somewhat Support	Somewhat Oppose	Strongly Oppose	Not Sure	Refused
PA	75%	18%	2%	4%	<1%	1%
MI	63%	23%	6%	7%	<1%	<1%

Source: Compiled by authors

Table 5 shows that government mandates to expand the role of renewable electricity also proved very popular in both states. Ironically, the overall level of support was somewhat higher in Michigan, which does not have such a “portfolio standard” in place, as opposed to Pennsylvania, which enacted one four years ago. As with the vehicle mandates, the level of opposition was relatively low, with 15 percent “somewhat” or “strongly” opposed in Pennsylvania and 13 percent so opposed in Michigan.

Table 5. “The government should require a set portion of all electricity to come from renewable energy sources such as wind and solar power.”

	Strongly Support	Somewhat Support	Somewhat Oppose	Strongly Oppose	Not Sure	Refused
PA	49%	29%	9%	6%	4%	2%
MI	46%	39%	7%	6%	1%	1%

Source: Compiled by Author

We also found comparable levels of support for other policy proposals, such as governmental support for ethanol. This question was asked prior to the recent flurry of controversy over the environmental and economic impacts of ethanol,

A cap-and-trade approach currently lacks the base of public support held by other kinds of policies with more of a regulatory flavor.

but further reflects public support for a type of policy that is generally lacking in favor amongst economists and policy analysts. Collectively, these findings suggest public support that cuts across most demographic categories for using regulatory tools to mandate cleaner technologies and energy sources.

In contrast, public support begins to decline upon turning to the very tools most commonly endorsed in the policy analysis community. The use of a cap-and-trade approach for reducing greenhouse gas emissions has been widely discussed in the media, building on prior American experience in using this tool to reduce sulfur dioxide emissions. Indeed, 10 Northeastern states are about to launch a regional program of this nature in January 2009 and much of the climate policy discussion in the 110th Congress has focused on a national variation of this approach, most notably the Climate Security Act sponsored by Senators Joseph Lieberman (I-CT) and John Warner (R-VA).

Michigan and Pennsylvania respondents, however, are decidedly mixed in their response to a policy that would “allow businesses to buy and sell permits to release greenhouse gases as a means of reducing emissions,” as demonstrated by Table 6. Only 17 percent of Pennsylvanian and 12 percent of Michigan respondents expressed strong support and there was a near-equal divide among respondents who reflected some degree of opposition and support. The high level of those who responded “not sure,” particularly in Pennsylvania, suggests that part of the issue here may simply be unfamiliarity with an approach that appeals to policy wonks but is not easy for the general citizenry to grasp. But it suggests that a cap-and-trade approach currently lacks the base of public support held by other kinds of policies with more of a regulatory flavor.

Table 6. “The government should allow businesses to buy and sell permits to release greenhouse gases as a means of reducing emissions.”

	Strongly Support	Somewhat Support	Somewhat Oppose	Strongly Oppose	Not Sure	Refused
PA	17%	24%	12%	22%	23%	2%
MI	12%	31%	20%	25%	10%	2%

Source: Compiled by authors

At the same time, we found particularly high variance among respondents on this issue by various demographic categories, as illustrated in Table 7. Using the Michigan sample, support for a cap-and-trade approach was greater among non-union members than union members, Democrats rather than Independents or Republicans, and those ages 30 and older than 29 or younger. Similar findings emerged from the Pennsylvania survey. Interestingly, we found that the patterns of public support for a cap-and-trade approach were very similar to those for expanded use of nuclear power, which has also been proposed as a climate change strategy since it does not generate carbon dioxide emissions.

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Table 7. “The government should allow businesses to buy and sell permits to release greenhouse gases as a means of reducing emissions.” (Michigan Sample)

	Strongly Support	Somewhat Support	Somewhat Oppose	Strongly Oppose	Not Sure/Refused
Union	6%	31%	27%	22%	14%
Non-Union	14%	34%	18%	26%	8%
Democrat	18%	34%	15%	24%	8%
Republican	10%	27%	22%	28%	13%
Independent	8%	32%	26%	21%	14%
18-29	12%	23%	30%	31%	4%
30-49	13%	36%	15%	26%	11%
50 and Up	12%	31%	21%	21%	16%

Source: Compiled by authors

Support declines even further when policy proposals suggest direct imposition of costs on citizens, whether through some form of taxation or a surcharge on energy purchases, as indicated in Tables 8 through 10. Of course, all likely climate policies impose some form of costs, whether direct ones as in the form of a tax or indirect ones as in more expensive electricity or vehicles. But despite the tremendous base of support from economists and policy analysts for this method, Michigan and Pennsylvania respondents overwhelmingly opposed such policies. The margin of opposition to increased gasoline taxes was approximately three-to-one in both states and only slightly lower for a proposed increase in taxes on all fossil fuels. Majorities in both states also opposed a proposal to levy a “surcharge on electricity bills and use the money from the charge to support renewable energy development,” although opinion was more closely divided in both states on this option. These questions were asked before the recent spike in gasoline and other energy prices and so opposition to taxation may have only increased in the interim.

Table 8. “The government should increase taxes on gasoline in order to reduce consumption.”

	Strongly Support	Somewhat Support	Somewhat Oppose	Strongly Oppose	Not Sure	Refused
PA	8%	16%	14%	57%	4%	1%
MI	7%	16%	18%	58%	<1%	<1%

Source: Compiled by authors

Table 9. “The government should increase taxes on all fossil fuels in order to reduce consumption.”

	Strongly Support	Somewhat Support	Somewhat Oppose	Strongly Oppose	Not Sure	Refused
PA	9%	20%	15%	48%	7%	1%
MI	7%	23%	20%	46%	3%	1%

Source: Compiled by authors

Table 10. “The government should place a surcharge on electricity bills and use the money from the charge to support renewable energy development.”

	Strongly Support	Somewhat Support	Somewhat Oppose	Strongly Oppose	Not Sure	Refused
PA	12%	27%	16%	41%	4%	1%
MI	12%	28%	22%	34%	2%	1%

Source: Compiled by authors

Looking Ahead

This analysis confirms that there is strong recognition in two large and politically influential states that global warming is occurring and constitutes a serious problem for society. It also suggests broad support for active engagement in formulating policy responses by both federal and state levels, despite the enormous variation in what Michigan and Pennsylvania have done thus far. But that support for alternative policy options varies enormously. Those options that generally have received the warmest embrace by economists and policy analysts garner the least public support. In turn, those options generally deemed least desirable by policy experts maintain the broadest base of support. Somewhere in between, the cap-and-trade approach that has received so much attention in the media and among policy makers receives a very divided response and may not be well understood.

This analysis will serve as the basis for a much-expanded survey that will include intensive examination of a different subset of states to be conducted in the months immediately preceding the 2008 election in anticipation of a December 2008 National Conference on Climate Governance at the Miller Center of Public Affairs at the University of Virginia.

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APPENDIX ONE: METHODOLOGY

Michigan Methodology: The data for Michigan examined in this report were collected in a telephone survey of residents of the state of Michigan between October 10 and November 26, 2007. The surveys are based on stratified random samples of adults age 18 and older living in Michigan. Interviewing and sampling was conducted by the Institute for Public Policy & Social Research's Office for Survey Research at Michigan State University as part of their Fall 2007 State of the State Survey (SOSS). A detailed description of the SOSS methodology can be found at www.ippsr.msu.edu/SOSS/SOSS.HTM. The final number of completed surveys was 1,001 with a resulting margin of error of +/- 3% at the 95% confidence interval. However, the margin of errors for sub groups (i.e. women, Republicans, Catholics) is larger due to smaller sample size. Percentages throughout the survey have been rounded upward at the .5 mark, thus many totals in the results will not equal 100%. The survey questionnaire was designed by the authors of this report and we are grateful to the Center for Local, State, and Urban Policy at the University of Michigan for financial support.

Pennsylvania Methodology: The data for Pennsylvania examined in this report were collected in a telephone survey of residents of the state of Pennsylvania between October 17 and December 4, 2007. The surveys are based on a random sample of adults age 18 and older living in Pennsylvania. Interviewing and sampling was conducted by the Muhlenberg College Institute of Public Opinion. The final number of completed surveys was 581 with a resulting margin of error of +/- 4% at the 95% confidence interval. However, the margin of errors for sub groups (i.e. women, Republicans, Catholics) is larger due to smaller sample size. Percentages throughout the survey have been rounded upward at the .5 mark, thus many totals in the results will not equal 100%. The survey questionnaire was designed by the authors of this report, in some instances linked directly with prior national survey questions to allow for comparison across various audiences. We are grateful to the Muhlenberg College Institute of Public Opinion for financial support.

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Based upon a telephone survey conducted in late 2007, this paper examines public attitudes towards climate change, with particular emphasis on policy options, in Michigan and Pennsylvania—two states deemed major battlegrounds for McCain and Obama.

Key Findings:

- § **Michigan and Pennsylvania respondents acknowledge that global temperatures are indeed increasing and that global warming is a serious problem.** Seventy-nine percent of Michigan respondents concur that there is “solid evidence” that average global temperatures have been increasing, matched by 74 percent of Pennsylvania respondents. Nearly one half of Michigan and Pennsylvania respondents see global warming as a “very serious” problem and approximately three-quarters view it as either a “very serious” or “somewhat serious” problem.
- § **Michigan and Pennsylvania respondents support both federal and state-based policy strategies.** Pennsylvania and Michigan respondents place a “great deal of responsibility” for “taking actions to reduce global warming” with both the federal (56% PA and 48% MI) and state (38% PA and 33% MI). Most respondents see both levels of government holding some degree of responsibility.
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Table 3. “For each level of government that I mention please tell me if it has a great deal of responsibility, some responsibility or no responsibility for taking actions to reduce global warming.”

		Federal Government				
		Great Deal of Responsibility	Some Responsibility	No Responsibility	Not Sure	Refused
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Source: Compiled by authors

Clear Policy Preferences—and Dislikes

The 110th Congress and state legislative sessions across the nation offer a laboratory to test the feasibility of virtually every conceivable method to reduce greenhouse gas emissions through legislation. These run the gamut from those that use regulatory tools to impose uniform behavior (such as mandates to reach a certain level of energy from renewable sources) to those that are more flexible and utilize market-based approaches (such as cap-and-trade systems or energy taxes). A diverse range of economists and policy analysts have weighed in on this issue, overwhelmingly endorsing the latter body of policies. Such analysis tends to conclude that market-based strategies can achieve emissions reductions in a more cost-effective manner and provide enormous flexibility in determining compliance. In contrast, regulatory approaches are derided as highly-inefficient, using “command-and-control” mechanisms that are likely to heighten the costs associated with emission reductions.

This survey, however, finds that popular response to policy options is in essence the reverse of scholarly analysis. We sampled the views of Michigan and Pennsylvania residents on a wide range of policy options, all of which have been embraced in one or more states and received some focus in the 110th Congress. We consistently find the greatest level of public support for those approaches that clearly fall into the regulatory realm whereas support declines markedly as one moves toward market-based systems such as cap-and-trade and energy taxes.

Two of the most popular policy options, as measured by our survey responses, are government mandates to increase vehicular fuel efficiency and increase the level of electricity provided by renewable energy sources. Both involve direct governmental mandates and are generally derided by policy analysts as inefficient. Moreover, one might expect considerable resistance to such policies, particularly vehicular fuel efficiency in Michigan as this has long been a highly-sensitive issue given the dominant presence of mainstay American

Overwhelming majorities of respondents in both states support requiring manufacturers “to increase the fuel efficiency of their vehicles.”

vehicle firms such as General Motors and Ford Motor Company. In turn, the substantial role of coal in the Pennsylvania economy, both in mining and use as a primary electricity source, might incline its residents to oppose any mandatory shift toward other electricity sources.

But overwhelming majorities of respondents in both states support requiring manufacturers “to increase the fuel efficiency of their vehicles,” as reflected in Table 4. This question was posed shortly before Congress enacted the 2007 Energy Independence and Security Act, which did increase Corporate Average Fuel Efficiency standards for the first time in decades. In Pennsylvania, three out of four respondents offered “strong support” for this proposal, followed by 63 percent of their counterparts in Michigan. In contrast, only six percent of Pennsylvania and 13 percent of Michigan respondents said that they were either “somewhat” or “strongly” opposed to such a policy.

Table 4. “The government should require auto makers to increase the fuel efficiency of their vehicles”

	Strongly Support	Somewhat Support	Somewhat Oppose	Strongly Oppose	Not Sure	Refused
PA	75%	18%	2%	4%	<1%	1%
MI	63%	23%	6%	7%	<1%	<1%

Source: Compiled by authors

Table 5 shows that government mandates to expand the role of renewable electricity also proved very popular in both states. Ironically, the overall level of support was somewhat higher in Michigan, which does not have such a “portfolio standard” in place, as opposed to Pennsylvania, which enacted one four years ago. As with the vehicle mandates, the level of opposition was relatively low, with 15 percent “somewhat” or “strongly” opposed in Pennsylvania and 13 percent so opposed in Michigan.

Table 5. “The government should require a set portion of all electricity to come from renewable energy sources such as wind and solar power.”

	Strongly Support	Somewhat Support	Somewhat Oppose	Strongly Oppose	Not Sure	Refused
PA	49%	29%	9%	6%	4%	2%
MI	46%	39%	7%	6%	1%	1%

Source: Compiled by Author

We also found comparable levels of support for other policy proposals, such as governmental support for ethanol. This question was asked prior to the recent flurry of controversy over the environmental and economic impacts of ethanol, but further reflects public support for a type of policy that is generally lacking in favor amongst economists and policy analysts. Collectively, these findings

suggest public support that cuts across most demographic categories for using regulatory tools to mandate cleaner technologies and energy sources.

In contrast, public support begins to decline upon turning to the very tools most commonly endorsed in the policy analysis community. The use of a cap-and-trade approach for reducing greenhouse gas emissions has been widely discussed in the media, building on prior American experience in using this tool to reduce sulfur dioxide emissions. Indeed, 10 Northeastern states are about to launch a regional program of this nature in January 2009 and much of the climate policy discussion in the 110th Congress has focused on a national variation of this approach, most notably the Climate Security Act sponsored by Senators Joseph Lieberman (I-CT) and John Warner (R-VA).

Michigan and Pennsylvania respondents, however, are decidedly mixed in their response to a policy that would “allow businesses to buy and sell permits to release greenhouse gases as a means of reducing emissions,” as demonstrated by Table 6. Only 17 percent of Pennsylvanian and 12 percent of Michigan respondents expressed strong support and there was a near-equal divide among respondents who reflected some degree of opposition and support. The high level of those who responded “not sure,” particularly in Pennsylvania, suggests that part of the issue here may simply be unfamiliarity with an approach that appeals to policy wonks but is not easy for the general citizenry to grasp. But it suggests that a cap-and-trade approach currently lacks the base of public support held by other kinds of policies with more of a regulatory flavor.

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Table 6. “The government should allow businesses to buy and sell permits to release greenhouse gases as a means of reducing emissions.”

	Strongly Support	Somewhat Support	Somewhat Oppose	Strongly Oppose	Not Sure	Refused
PA	17%	24%	12%	22%	23%	2%
MI	12%	31%	20%	25%	10%	2%

Source: Compiled by authors

At the same time, we found particularly high variance among respondents on this issue by various demographic categories, as illustrated in Table 7. Using the Michigan sample, support for a cap-and-trade approach was greater among non-union members than union members, Democrats rather than Independents or Republicans, and those ages 30 and older than 29 or younger. Similar findings emerged from the Pennsylvania survey. Interestingly, we found that the patterns of public support for a cap-and-trade approach were very similar to those for expanded use of nuclear power, which has also been proposed as a climate change strategy since it does not generate carbon dioxide emissions.

Table 7. “The government should allow businesses to buy and sell permits to release greenhouse gases as a means of reducing emissions.”

The Climate of Opinion: State Views on Climate Change and Policy Options



(Michigan Sample)

Support for a cap-and-trade approach was greater among non-union members than union members, Democrats rather than Independents or Republicans, and those ages 30 and older than 29 or younger.

	Strongly Support	Somewhat Support	Somewhat Oppose	Strongly Oppose	Not Sure/Refused
Union	6%	31%	27%	22%	14%
Non-Union	14%	34%	18%	26%	8%
Democrat	18%	34%	15%	24%	8%
Republican	10%	27%	22%	28%	13%
Independent	8%	32%	26%	21%	14%
18-29	12%	23%	30%	31%	4%
30-49	13%	36%	15%	26%	11%
50 and Up	12%	31%	21%	21%	16%

Source: Compiled by authors

Support declines even further when policy proposals suggest direct imposition of costs on citizens, whether through some form of taxation or a surcharge on energy purchases, as indicated in Tables 8 through 10. Of course, all likely climate policies impose some form of costs, whether direct ones as in the form of a tax or indirect ones as in more expensive electricity or vehicles. But despite the tremendous base of support from economists and policy analysts for this method, Michigan and Pennsylvania respondents overwhelmingly opposed such policies. The margin of opposition to increased gasoline taxes was approximately three-to-one in both states and only slightly lower for a proposed increase in taxes on all fossil fuels. Majorities in both states also opposed a proposal to levy a “surcharge on electricity bills and use the money from the charge to support renewable energy development,” although opinion was more closely divided in both states on this option. These questions were asked before the recent spike in gasoline and other energy prices and so opposition to taxation may have only increased in the interim.

Table 8. “The government should increase taxes on gasoline in order to reduce consumption.”

	Strongly Support	Somewhat Support	Somewhat Oppose	Strongly Oppose	Not Sure	Refused
PA	8%	16%	14%	57%	4%	1%
MI	7%	16%	18%	58%	<1%	<1%

Source: Compiled by authors

Table 9. “The government should increase taxes on all fossil fuels in order to reduce consumption.”

	Strongly Support	Somewhat Support	Somewhat Oppose	Strongly Oppose	Not Sure	Refused
PA	9%	20%	15%	48%	7%	1%
MI	7%	23%	20%	46%	3%	1%

Source: Compiled by authors

Table 10. “The government should place a surcharge on electricity bills and use the money from the charge to support renewable energy development.”

	Strongly Support	Somewhat Support	Somewhat Oppose	Strongly Oppose	Not Sure	Refused
PA	12%	27%	16%	41%	4%	1%
MI	12%	28%	22%	34%	2%	1%

Source: Compiled by authors

Looking Ahead

This analysis confirms that there is strong recognition in two large and politically influential states that global warming is occurring and constitutes a serious problem for society. It also suggests broad support for active engagement in formulating policy responses by both federal and state levels, despite the enormous variation in what Michigan and Pennsylvania have done thus far. But that support for alternative policy options varies enormously. Those options that generally have received the warmest embrace by economists and policy analysts garner the least public support. In turn, those options generally deemed least desirable by policy experts maintain the broadest base of support. Somewhere in between, the cap-and-trade approach that has received so much attention in the media and among policy makers receives a very divided response and may not be well understood.

This analysis will serve as the basis for a much-expanded survey that will include intensive examination of a different subset of states to be conducted in the months immediately preceding the 2008 election in anticipation of a December 2008 National Conference on Climate Governance at the Miller Center of Public Affairs at the University of Virginia.

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APPENDIX ONE: METHODOLOGY

Michigan Methodology: The data for Michigan examined in this report were collected in a telephone survey of residents of the state of Michigan between October 10 and November 26, 2007. The surveys are based on stratified random samples of adults age 18 and older living in Michigan. Interviewing and sampling was conducted by the Institute for Public Policy & Social Research's Office for Survey Research at Michigan State University as part of their Fall 2007 State of the State Survey (SOSS). A detailed description of the SOSS methodology can be found at www.ippsr.msu.edu/SOSS/SOSS.HTM. The final number of completed surveys was 1,001 with a resulting margin of error of +/- 3% at the 95% confidence interval. However, the margin of errors for sub groups (i.e. women, Republicans, Catholics) is larger due to smaller sample size. Percentages throughout the survey have been rounded upward at the .5 mark, thus many totals in the results will not equal 100%. The survey questionnaire was designed by the authors of this report and we are grateful to the Center for Local, State, and Urban Policy at the University of Michigan for financial support.

Pennsylvania Methodology: The data for Pennsylvania examined in this report were collected in a telephone survey of residents of the state of Pennsylvania between October 17 and December 4, 2007. The surveys are based on a random sample of adults age 18 and older living in Pennsylvania. Interviewing and sampling was conducted by the Muhlenberg College Institute of Public Opinion. The final number of completed surveys was 581 with a resulting margin of error of +/-4% at the 95% confidence interval. However, the margin of errors for sub groups (i.e. women, Republicans, Catholics) is larger due to smaller sample size. Percentages throughout the survey have been rounded upward at the .5 mark, thus many totals in the results will not equal 100%. The survey questionnaire was designed by the authors of this report, in some instances linked directly with prior national survey questions to allow for comparison across various audiences. We are grateful to the Muhlenberg College Institute of Public Opinion for financial support.

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