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American Opinions on Carbon Taxes and Cap-and-Trade: 10 Years of Carbon Pricing in the NSEE

Introduction

Economists have long embraced the idea of placing a price on the use of fossil fuels as the most cost-effective way to reduce greenhouse gas emissions and mitigate the threat of climate change. This is reflected in a staggering body of work by economists across the ideological spectrum in the United States and abroad, and in far-reaching support from such bodies as the United Nations and the World Bank. Carbon pricing can take two distinct forms, both unified by their adding a direct price to the continued use of fossil fuels. Under a carbon tax, the estimated cost of climate damage related to use of oil, coal, or natural gas can be added to the price at or near the point of consumption. This could build on early experimentation with carbon taxes among several Nordic nations in the 1990s. Under cap-and-trade, government sets a cap on overall emissions that declines over time, while allowing flexibility in how complying parties meet those requirements. By auctioning emission allowances, the marketplace decides the price necessary to acquire an allowance to emit carbon into the atmosphere. This could build on early experimentation with carbon cap-and-trade in nine Northeastern states under the Regional Greenhouse Gas Initiative (RGGI) during the past decade. In both instances, governments collect revenue from such a price and then decide how to allocate it.

Despite the long-standing base of support among economists, both carbon taxes and cap-and-trade have struggled in past decades to win and sustain political support. Bills for some form of carbon price have been introduced into Congress and many state legislatures for decades. But no carbon tax has yet to be adopted in either Washington, D.C. or in any state capital. In recent years, major adoption efforts in the state of Washington have fallen short in both a 2016 ballot proposition and in a 2018 push during the legislative session by Democratic Governor Jay Inslee. Cap-and-trade has fared somewhat better, and indeed, 23 states had adopted some form of this policy for carbon emissions between 2002 and 2010. But more than half of these states reversed direction after 2010, and currently only the RGGI states and California have retained their commitment over time to cap-and-trade. At the same time, New Jersey and Virginia have taken steps since their most recent elections to formally join RGGI, and other states such as Oregon have continued to explore some form of cap-and-trade.

In its first 10 years, the National Surveys on Energy and Environment (NSEE) has looked extensively at public support for carbon pricing, both in the abstract and when providing additional details about policy design and costs. In this chapter, we present time-series data on American support for such policies, showing how attitudes have shifted—or not—over the last decade. We also detail how sensitive support or opposition is to more specific policy design elements: the actual price-point, how government revenues generated from the policy would be expended, and which level of government enacts the policy. We also report on survey experiments that have aimed to understand the impact that framing of these policies—for example, as partisan efforts, or as “taxes” versus “fees”—have on support. Because these details often do matter to the public, we present the data on carbon taxes and cap-and-trade in two separate sections, but provide head-to-head comparisons where the data exist.

NSEE @10

Since 2008, the University of Michigan and Muhlenberg College have conducted the National Surveys on Energy and Environment (NSEE), a biannual national opinion survey on energy and climate policy. To celebrate the tenth anniversary of the survey, throughout 2018 NSEE will be releasing a series of reports highlighting the breadth of topics we have covered over the past decade. These reports present time-series data on how American attitudes about energy policy and climate change have changed from 2008 to 2017, as well as comparisons to Canadian opinion, collected through a parallel survey conducted by researchers at the University of Montreal. You can find previous reports in this series at: www.closup.umich.edu/nsee

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Support for Carbon Tax Grows Over Last Decade, but Majority Support Remains Elusive

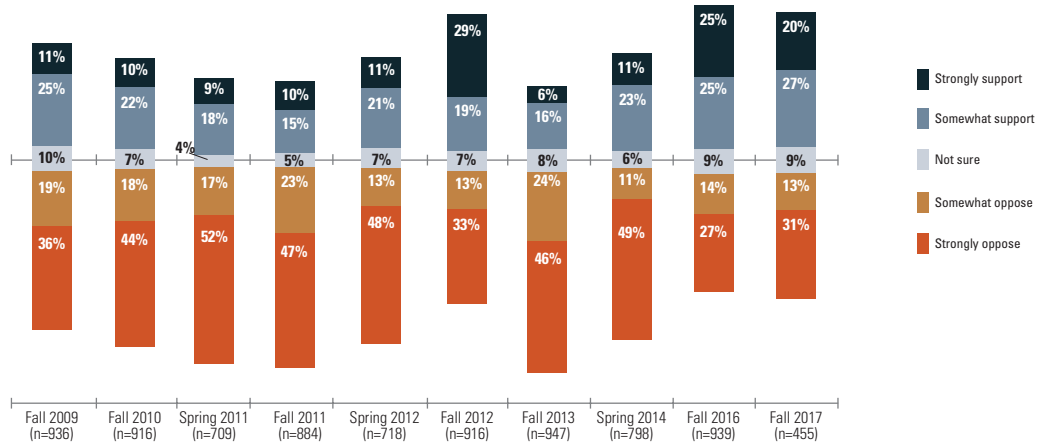
Perhaps one of the reasons that enacting a carbon tax in the US has been elusive is that for much of the last decade, there have been nearly twice as many Americans who say they oppose such a move as those who profess to support a carbon tax. In Fall 2011, for example, the NSEE found 70% of Americans said they opposed a carbon tax compared to just 25% who said they supported it (see *Figure 1*). Furthermore, those in opposition feel much more strongly about the issue than those in support. In each of the past surveys in which this issue has been examined, there have been more who strongly oppose than those who somewhat oppose, and this strong opposition has been as high as 52% in Spring 2011. By contrast, supporters have more commonly said they somewhat support a carbon tax rather than strongly support one, and strong support peaked at just 29% in Fall 2012.

In the two most recent fieldings of this question (Fall 2016 and Fall 2017), there are signs that these decade-long trends have started to shift. In Fall 2016, for the first time in the NSEE's history, half (50%) of Americans said that they supported a carbon tax. This fell slightly to 47% in Fall 2017, though this is within the survey's 3% margin of error, but support still exceeds opposition. While the increase in support marks a significant shift in public attitudes, there is no evidence of a groundswell of support for a carbon tax among Americans in general.

Even when looking at specific segments of the population, we see that over time, supporters have rarely outnumbered opponents. *Figure 2a*, for example, shows net support for a carbon tax based on political party—that is, the percentage of each group that supported the policy minus the percentage that opposed the policy. In the decade of asking Americans about pricing carbon, Democrats have been most supportive of a carbon tax, but even they posted net support on less than half of the fieldings. The 40% net support posted by Democrats in Fall 2016 was the result of 66% of Democrats saying they supported a carbon tax compared to just 26% who opposed one. Those who identify as Independents have posted net support only once—on the Fall 2016 fielding. Meanwhile, on each of the surveys Republicans opposed to a carbon tax have outnumbered Republicans in favor of such a tax by as many as 78 percentage points in Fall 2011 to as few as 33 percentage points in Fall 2016. Thus, while there are partisan differences with regard to a carbon tax, they have more often been a matter of degree of opposition rather than completely opposing views.

The NSEE finds something slightly different when looking at net support for a carbon tax based on attitudes about climate change. Notably, those who attribute climate change primarily to human activity have—on all but one occasion—posted net support for a carbon tax (see *Figure 2b*). That is, these adherents of anthropogenic climate change have been consistently more likely to support than oppose a carbon tax, distinguishing themselves even from those who say they believe the earth is warming but due to other factors. Americans who attribute climate change to both human activity and natural patterns, for example, have been less consistent—sometimes posting net support and other times, net opposition, toward a carbon tax. Those who attribute climate change primarily to natural patterns have yet to post positive net support for a carbon tax, though in Fall 2016, equal numbers of this group were in support and opposition to the tax. And among those who say there is no evidence that the earth is warming, net opposition had hovered around 80%, though the Fall 2016 survey found only 40% net opposition to a carbon tax among this group. Only time will tell if this rise persists; because the percentage of Americans who are skeptical about climate change has shrunk over the last decade,¹ this datapoint is based on a relatively small number of responses and so carries with it a sizeable margin of error.

Figure 1. Support/opposition to a carbon tax^a



Source: Fall 2009-Fall 2017 NSEE waves.

Survey data tables for all NSEE waves are available at <http://closup.umich.edu/national-surveys-on-energy-and-environment>.

Note: In Spring 2014, half of respondents were given extended information about a carbon tax. The data in this figure—and in subsequent figures—combine both groups. For exact text, and frequencies for each subsample, see the Spring 2014 survey data tables available at <http://closup.umich.edu/national-surveys-on-energy-and-environment>.

Note: In Fall 2017, respondents were given the option to choose “neither support nor oppose.” In this figure, those responses (5%) are combined with those who volunteered that they were “not sure” (4%). Furthermore, this question was part of an experiment, and so only those in the control “non-treatment” group are included. As a result, the percentages may not match the data tables on the NSEE website.

^a Over time, the NSEE has asked three different versions of this question—one talking about taxing carbon based fuels such as coal, oil, gasoline, and natural gas; another about taxing carbon based fuels, omitting gasoline from the previous list, and a third about taxing fossil fuels without providing a list. To provide a more complete picture, we have shown all three together.

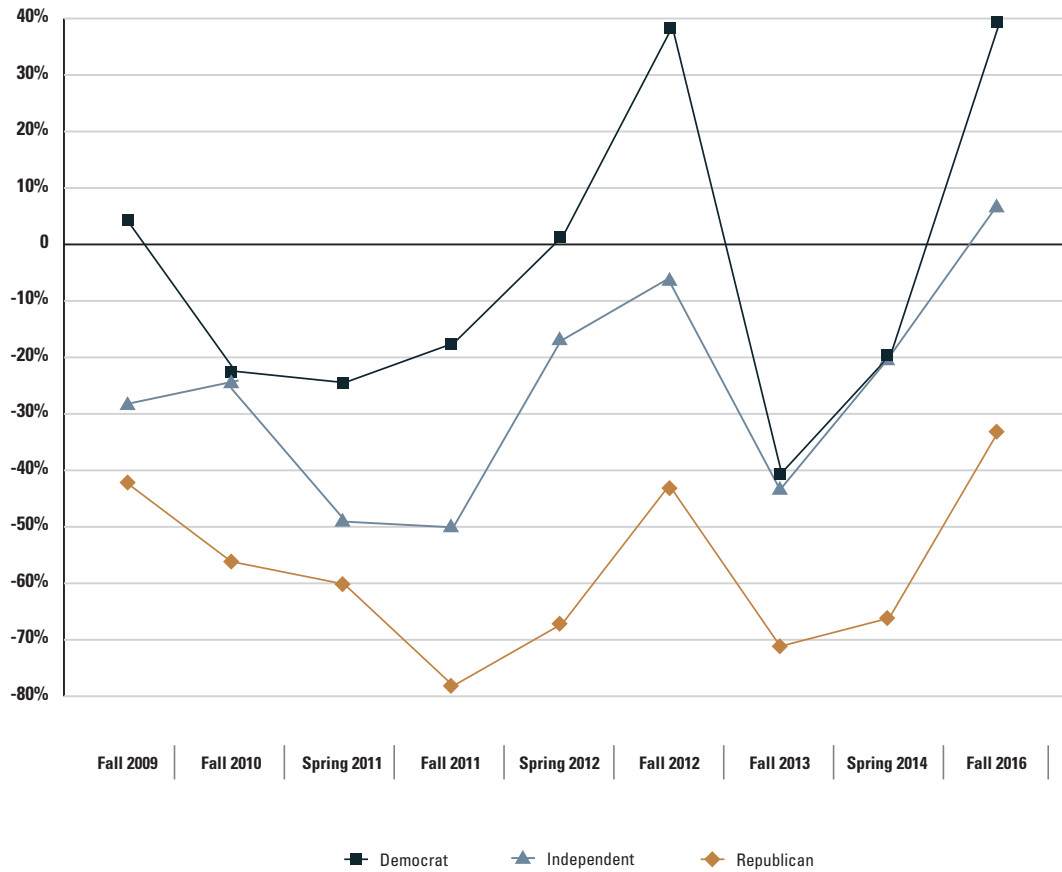
Question text (Fall 2009, Fall 2010, Fall 2011, Fall 2013): “Another way to lower greenhouse gas emissions would be to increase taxes on carbon based fuels such as coal, oil, gasoline and natural gas. Would you strongly support, somewhat support, somewhat oppose or strongly oppose this type of system?”

Question text (Spring 2014, Fall 2016): “Consider a policy to reduce greenhouse gases by taxing carbon based fuels such as coal, oil, and natural gas. Would you strongly support, somewhat support, somewhat oppose, or strongly oppose this type of system?”

Question text (Spring 2011, Spring 2012, Fall 2012): “In order to reduce the emission of greenhouse gases a number of methods have been considered. For each of the methods of reducing greenhouse gas emission that I mention please indicate if you strongly support, somewhat support, somewhat oppose, or strongly oppose that option. A policy to reduce greenhouse gases by increasing taxes on all fossil fuels.”

Question text (Fall 2017): “I’m going to read off some proposed policies that would help reduce greenhouse gas emissions. For each idea that I mention please tell me if you strongly support, somewhat support, neither support nor oppose, somewhat oppose, or strongly oppose the proposed ways to reduce greenhouse gas emissions. The federal government increasing taxes on carbon based fuels such as coal, oil, and natural gas.

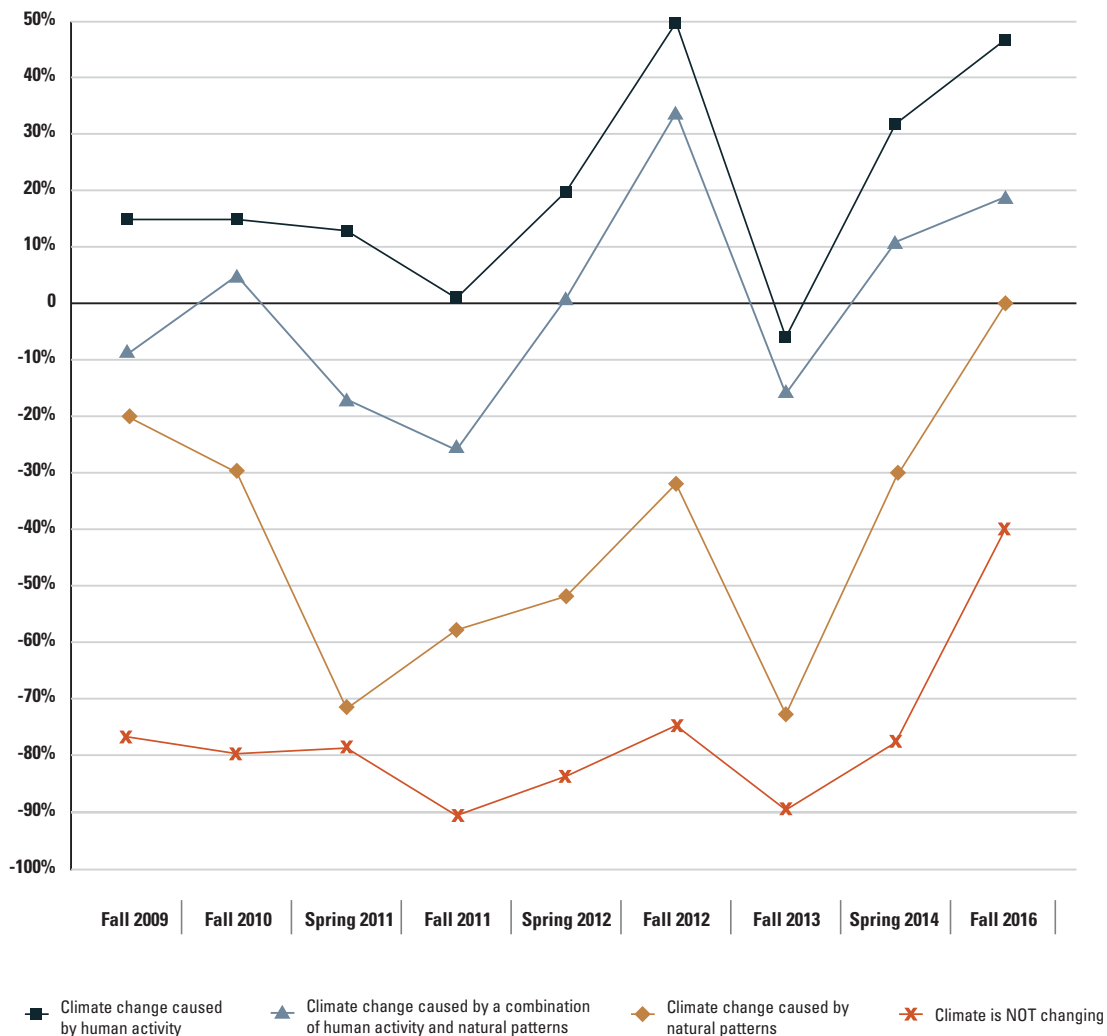
Figure 2a. Net support for a carbon tax, by political party^a



Note: See *Note 2* on page 30 for the sample size for each of the groups shown in the figure.

Note: Data from the Fall 2017 survey is not included in *Figures 2a* and *2b* because the question was asked only of half of all survey respondents (n=455). Further parsing this data by political party of stance toward climate change introduces margins of error that are too large to be reliable.

Figure 2b. Net support for a carbon tax, by stance toward climate change^{a,b&c}



Source: Fall 2009-Fall 2016 NSEE waves

Note: See *Note 3* on page 30 for the sample size for each of the groups shown in the figure.

Note: Stance toward climate change is a combination of belief in climate change^b and cause of climate change.^c

Note: Data from the Fall 2017 survey is not included in *Figures 2a* and *2b* because the question was asked only of half of all survey respondents (n=455). Further parsing this data by political party of stance toward climate change introduces margins of error that are too large to be reliable.

^b Question text (belief in climate change): “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?”

^c Question text (cause of climate change): “Is the earth getting warmer because of human activity such as burning fossil fuels, or mostly because of natural patterns in the earth’s environment?” While asked as a two-option close-ended question (i.e., human activity or natural patterns), interviewers record when respondents volunteer that that climate change is a “combination of human activity and natural patterns.”

Putting a Price on a Carbon Tax Doesn't Always Reduce Support

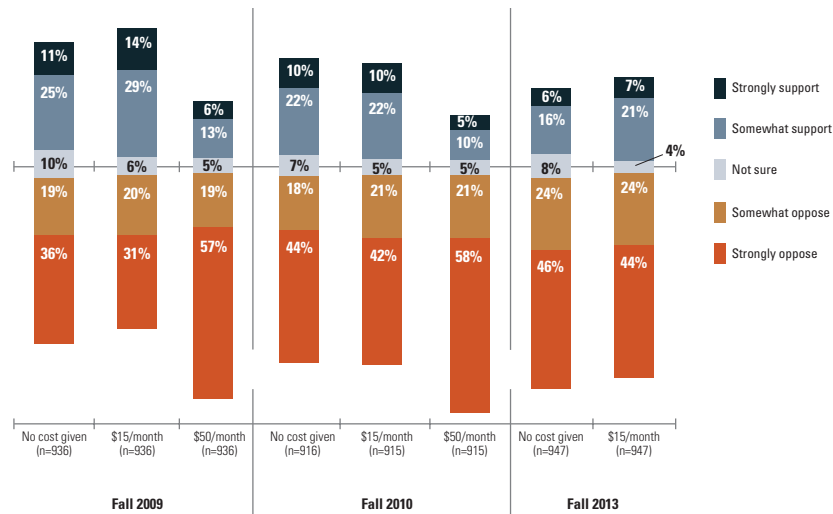
In survey research, it is common to find that support for a policy drops once a price tag is attached to the policy. Indeed, the NSEE has often found that even for widely popular climate policy objectives such as increasing the use of renewable energy sources, less than half of Americans are willing to pay more on their energy bills in order to achieve that objective.⁴

To test the price sensitivity of support for a carbon tax, the NSEE has embedded a number of experiments in past surveys. In all cases, respondents were first asked a baseline question about their support for a carbon tax with no specific price tag attached. Then, these same respondents were asked whether they would support a tax if it increased their energy costs by a set amount. We most commonly tested an increase of \$15 per month, a figure consistent with the Congressional Budget Office's projected average household costs of the Waxman-Markey bill, a 2009 cap-and-trade proposal that gained majority support in the US House of Representatives before failing in the Senate the following year.⁵ In the Fall 2010 wave, we also asked all respondents about their support for a carbon tax if it increased energy costs by \$50 per month.⁶

In contrast to the expectation that adding any price would decrease support, in fact, we saw the opposite on both the Fall 2009 and Fall 2013 surveys. In both of these cases, more respondents said they would support a carbon tax with a price set at \$15 per month than said they would support a carbon tax without a price given; support increased 7 percentage points in 2009 and 6 percentage points in 2013 (see *Figure 3*). On the Fall 2010 survey, support for the baseline (no cost identified) carbon tax was nearly identical to that in the \$15 per month iteration, but when asked if they would support a carbon tax that increased energy costs by \$50 per month, support dropped 17 percentage points, from 32% to 15%. Because these questions were asked sequentially among the same individuals, it suggests that some Americans initially assume that a carbon tax would cost more than \$15 per month. Once they are told that the tax would increase their bills by only \$15, they are willing to support the tax. But when a price tag of \$50 is placed on the carbon tax, few supporters remain.

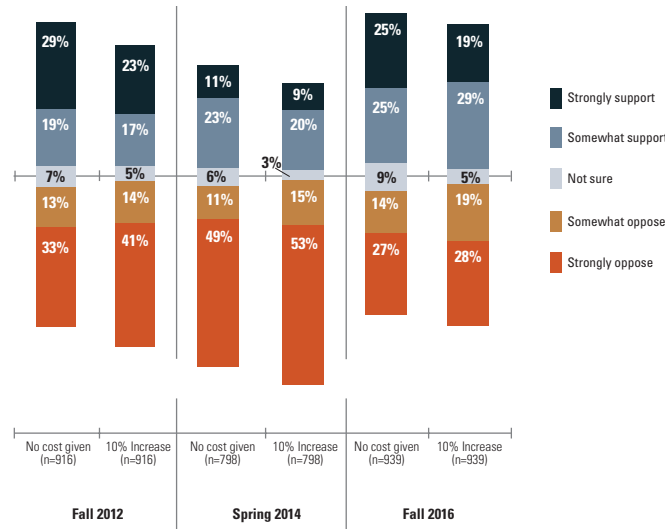
The NSEE has also fielded questions aimed at gauging how support for a carbon tax changes when the cost is given as a percentage increase—namely, 10% per month. In the Fall 2012 and Spring 2014 fieldings, support dropped by 8 and 5 percentage points, respectively (see *Figure 4*). On the most recent iteration of the experiment in Fall 2016, though, there was no discernable impact of assigning a 10% cost premium; 50% of respondents supported a carbon tax with no cost attached, while 48% said they would support a carbon tax that would increase the cost of energy by 10%. This may indicate that Americans are growing less price-sensitive toward a carbon tax as their urgency to address climate change grows.

Figure 3. Support/opposition to a carbon tax, with and without a dollar value mentioned^{a,d}



Source: Fall 2009, Fall 2010, and Fall 2013 NSEE waves

Figure 4. Support/opposition to a carbon tax, with and without a percentage increase mentioned^{a,e}



Source: Fall 2012, Spring 2014, and Fall 2016 NSEE waves

^d Question text (\$15/month): “What if the carbon fuels taxes significantly lowered greenhouse gases but increased your energy costs by 15 dollars a month? Would you strongly support, somewhat support, somewhat oppose, or strongly oppose this type of system?”

Question text (\$50/month): “What if the carbon fuels taxes significantly lowered greenhouse gases but increased your energy costs by 50 dollars a month in added expenses? Would you strongly support, somewhat support, somewhat oppose or strongly oppose this type of system?”

^e Question text (10%): “What if the carbon fuels tax significantly lowered greenhouse gases but increased your energy costs by 10 percent a month? Would you strongly support, somewhat support, somewhat oppose, or strongly oppose such a system?”

Carbon Tax Revenue Use Designation Important to Policy Support

Carbon taxes can potentially offset political opposition to their costs through their benefits. These may include climate mitigation but also may include benefits linked to the decisions as to how tax revenue will be allocated. Indeed, this has been a major debate in carbon tax proposals in the United States and internationally, and existing carbon taxes in operation around the world allocate funds to a wide range of programs. The NSEE has asked on multiple occasions about how Americans would like to see the revenues generated from a carbon tax to be used. As the sidebar notes, previous NSEE reports have compared the options that were presented within the context of a single survey with detailed breakdowns by political party. *Figure 5* presents the results from all four surveys on which multiple revenue-use options were provided to respondents.

From the base case where no revenue use is specified, on each of these surveys, overall support for a carbon tax increases when respondents are told that the revenues would be used to support renewable energy research and development (R&D) or would be returned to Americans in the form of an income tax rebate. However, because support for the baseline carbon tax has been higher in recent waves, specifying revenue use does not have quite as large of an impact in shifting opinion as it did in earlier waves. For example, while the renewable energy R&D option produced a 38-point jump in support on the Fall 2013 survey (from 22% to 60%), results from the Fall 2016 survey found a comparatively smaller 16-point jump (from 50% to 66%).

Report Highlight

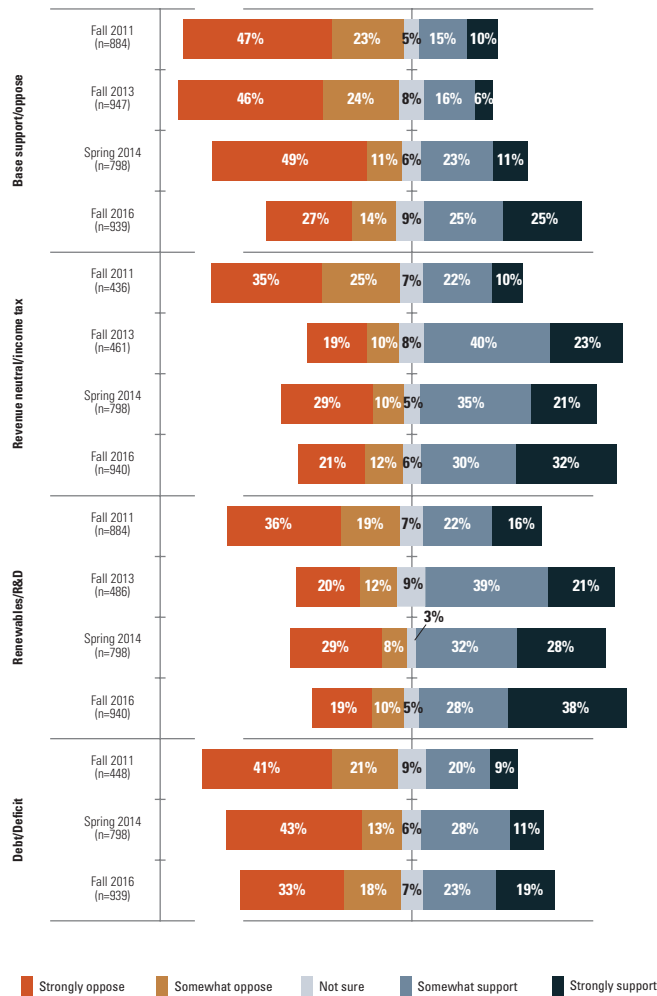
Two separate NSEE reports have taken an in-depth look at opinions related to carbon tax revenue use from the Spring 2014 and Fall 2016 surveys. “Public Views on a Carbon Tax Depend on the Proposed Use of Revenue,” released in July 2014, considers how political affiliation shapes views on three alternate uses of revenue. “Moving the Needle on American Support for a Carbon Tax,” released in March 2017, updates this work and places it within the context of a number of contemporary carbon tax initiatives, from British Columbia’s enduring revenue-neutral carbon tax to Washington state’s failed November 2016 ballot proposal. These reports are available on the NSEE website: www.closup.umich.edu/nsee.

As discussed at length in previous reports, there are not partisan-based preferences for one option over another; the renewable energy R&D and revenue neutral options lead to increased support among respondents from all political parties. Given that Republicans, however, are generally less supportive of the baseline carbon tax, specifying revenue use has in most cases resulted in less Republican opposition to a carbon tax, but not majority Republican support. The exception to that is the Fall 2013 survey, when the renewable energy R&D option garnered the support of 55% of Republicans (see *Appendix A*).

A carbon tax which would be used to fund renewable energy R&D also stands out when respondents are asked how they would prefer carbon tax revenues be used. On each of the three waves in which this question was posed, the renewable energy R&D option received the plurality of votes (see *Figure 6*). On a follow-up question on the Spring 2011 survey, 45% of those who said that they would prefer carbon tax revenues be used to fund renewable energy research suggested that they would be more likely to support a carbon tax with such a design. That would have increased the baseline support from 21% for that wave to 37%.

Specifying revenue use, however, does not always lead to increased support. The NSEE has found mixed effects for a carbon tax that directs the revenues to reducing the government’s debt. In Fall 2011 and Spring 2014, this option slightly increased support, 4 and 5 percentage points, respectively, well below the other revenue-use options in those waves. In Fall 2016, however, support for a carbon tax where the revenue would be used to reduce the debt received 8 percentage points less support than an option where revenue use was not specified.

Figure 5. Support/opposition to a carbon tax, with revenue use specified^{a,f}



Source: Fall 2011, Fall 2013, Spring 2014, and Fall 2016 NSEE waves

Note: Exact question text varied between waves. Exact question text for each wave can be found in the survey data tables available at <http://closup.umich.edu/national-surveys-on-energy-and-environment>.

Note: In Spring 2014, half of respondents were given extended information about a carbon tax, and each revenue use option. The figure combines both groups. For exact text, and frequencies for each subsample, see the Spring 2014 survey data tables available at <http://closup.umich.edu/national-surveys-on-energy-and-environment>.

^f Question text (Renewables/R&D): “What if revenues from the tax were used to fund research and development for renewable energy programs? Would you strongly support, somewhat support, somewhat oppose, or strongly oppose such a system?” [for alternate question text, search the NSEE question database for carbontax_rev4renewbls and carbontax_rev4research_v2]

Question text (Revenue neutral/Income tax): “What if the carbon fuels tax were “revenue neutral,” meaning that every dollar collected by the government would be returned to the public as an income tax rebate? Would you strongly support, somewhat support, somewhat oppose, or strongly oppose such a system?” [for alternate question text, search the NSEE question database for carbontax_revneutral_v2]

Question text (Debt/Deficit): “What if revenues from the tax were used to reduce the federal deficit? Would you strongly support, somewhat support, somewhat oppose, or strongly oppose such a system?” [for alternate question text, search the NSEE question database for carbontax_rev4debt_v1]

Canada Corner: American and Canadian Support for Trudeau's Carbon Price

Since 2011, the Canadian Surveys on Energy and the Environment (CSEE) have served as a sister survey to the NSEE, fielding a number of identical questions in Canada. These surveys provide a unique comparative perspective on public attitudes toward climate change and energy issues in the United States and Canada, and comparing responses across surveys has commonly found striking differences in public attitudes across these neighboring federations.

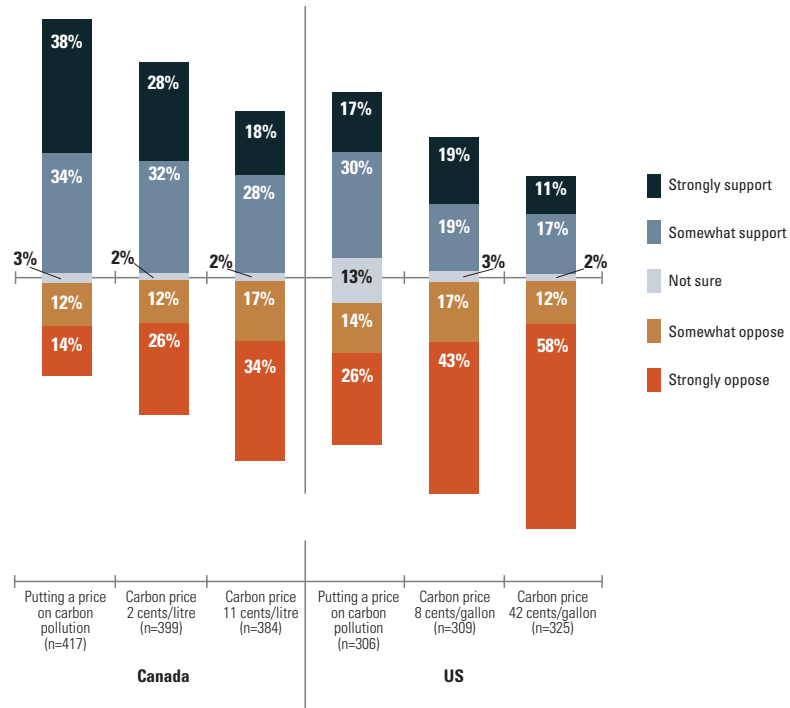
One area where Canadian and American policy and opinion diverges significantly is in the area of carbon pricing. While interest around a national carbon price in the United States has faded substantially since the collapse of Waxman-Markey in 2009, the Canadian government under Prime Minister Justin Trudeau has since developed a national carbon price framework as a key pillar in its plan to meet its Paris Agreement commitments. Recognizing the fact that several of the largest Canadian provinces (Ontario, Quebec, British Columbia, and Alberta) already have carbon-pricing mechanisms in place, the federal government has opted for a national carbon price benchmark which provides individual jurisdictions the flexibility of deciding how to meet the federal standard. For jurisdictions that opt for an explicit price-based system (i.e., a carbon tax), the benchmark requires a minimum price of CDN \$10/tonne CO₂eq by 2018, rising to CDN \$50/tonne of CO₂eq by 2022.

As might be expected, the Canadian federal carbon pricing plan has met some controversy, including from some citizens concerned about impacts on the cost of living, and from a few recalcitrant provinces. In this context, the Fall 2016 CSEE and NSEE fielded an identical experiment to examine the Canadian and American public's attitudes toward this policy. Respondents were randomly assigned to one of three question wordings, which respectively provided no price cue, a cue that the policy would increase the price of gasoline by the corresponding amount that is equivalent to the federal carbon price benchmark of \$10 per tonne (starting in 2018), and a cue that the policy would increase the price of gasoline to \$50 per tonne (starting in 2022).

A majority of Canadians (72%) expressed strong (38%) or moderate (34%) support for "putting a price on carbon pollution," at least in the abstract. When the question specified the impact on the price of gasoline, Canadian support predictably dropped to 60% (at 2 cents per litre) and 46% (at 11 cents per litre). While this indicates that citizens' continued reliance on gasoline and their "pocketbook" considerations have a substantial impact on their level of support for carbon pricing, it is noteworthy that support for the policy remained relatively high even when a cost of 11 cents per litre was specified.

In contrast, the same survey experiment administered in the United States found considerably less baseline support for carbon pricing, with only 47% of Americans reporting they would support "putting a price on carbon pollution," including only 17% strongly supporting such a move. When a cost of 8 cents per gallon was specified (equivalent to a \$10 per tonne carbon price), just 38% of American were supportive. This drops to just 28% at a cost of 42 cents per gallon (equivalent to a \$50 per tonne carbon price). However, while support for a carbon price is substantially higher in Canada, the survey reveals American opinions are somewhat less influenced by the price effect, with support in the United States dropping 19 percentage points across the no- and high-cost question wording, relative to a 26 point decrease in support observed in Canada between the no-cost and high-cost experimental treatments.

Support/opposition in Canada and the US to a carbon tax



Question text: "There have been a number of ideas proposed for how governments can reduce the emissions of greenhouse gases. For each of the following policy options I read please indicate if you strongly support, somewhat support, somewhat oppose, or strongly oppose that option."

(Version A) "Putting a price on carbon pollution."

(Version B) "Putting a price on carbon pollution that would increase the price of gasoline by [2 cents per litre/8 cents per gallon]."

(Version C) "Putting a price on carbon pollution that would increase the price of gasoline by [11 cents per litre/42 cents per gallon]."

Source: United States: Fall 2016 NSEE; Canada: 2016 CSEE

Figure 6. Preferred use of revenue from a carbon tax^g

	Spring 2011	Fall 2011	Fall 2012
Renewable energy research	43%	42%	36%
Reduce federal deficit	11%	7%	16%
Returned to citizens through payroll tax deductions	6%	7%	4%
Returned to citizens through tax rebates	4%	11%	8%
Sustain existing government programs	2%	5%	Not asked
Highway and bridge repair	Not asked	Not asked	6%
Repeal tax	31%	22%	21%
Not sure	3%	7%	10%
N	709	881	913

Source: Spring 2011, Fall 2011, and Fall 2012 NSEE waves

Note: In Spring 2011, respondents weren't given the option to repeal the tax, but instead this percentage reflects those who volunteered that the government should not tax carbon.

Note: In Fall 2011, respondents were either asked about their preferred use of revenue if the carbon tax were done by the federal government, or by the state government. The data in this table are a combination of responses to the two questions.

Detailed Information on Revenue Use Isn't Necessary

While the NSEE has found providing some sense of how revenue from a carbon tax would be used may shift attitudes compared to a baseline case with no detail given, extended information on the policy design does not appear to have any impact on policy support. The Spring 2014 survey included an experiment on carbon tax revenue use in which respondents were randomly assigned to either receive a simple explanation of the policy or a more extended, multi-sentence description. The survey found no statistical difference in support or opposition to the proposed carbon tax design between the two groups. The question wording and frequencies are available on the NSEE website: <http://closup.umich.edu/national-surveys-on-energy-and-environment/nsee-data-tables/nsee-2014-spring/#Q22>.

^g Question text (Spring 2011): "If the government collected increased money from the taxation of fossil fuels where do you prefer the money generated from these taxes be spent? Do you prefer that it be..."

Question text (Fall 2011): "If the [federal/state] government enacted a tax on carbon fuels where do you prefer the money generated from the tax be spent? Do you prefer that it be..."

Question text (Fall 2012): "Now, if the federal government enacted a tax on fossil fuels such as coal, oil, and natural gas, which of the following options do you most prefer?"

Carbon Tax Supporters Prefer Both a Federal and State Tax

Not all carbon tax policy design considerations are as important to Americans as the use of revenue and the level of the tax. The NSEE has found, for example, that Americans have less defined preferences on which level of government they would prefer to levy a carbon tax. While a plurality of Americans said neither the federal nor state government should increase taxes on fossil fuels, among the remainder, over half stated a preference that both levels of government increase the tax (see *Figure 7a*). Among those who preferred that only one level of government levy a carbon tax, slightly more said they would prefer the tax be at the federal rather than state level. This is entirely consistent with NSEE findings on preferences for climate action more broadly: Americans believe that all levels of government bear some responsibility for climate action, but place a higher burden on the federal versus state governments.⁷

These same basic trends are seen when breaking the data down by political affiliation. Across the board, more than half of those who said they would support an increase in taxes on fossil fuels preferred that both federal and state governments increase the tax (see *Figure 7b*). Democrats had the strongest preference for federal rather than state action both times the question was asked. Among Republicans and Independents who preferred a tax be levied by a single level of government, there were no statistically-significant preferences for federal versus state action.

Figure 7a. Preferred level of government to levy a tax on fossil fuels^h

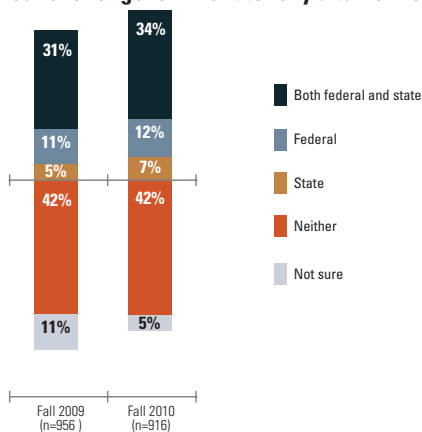
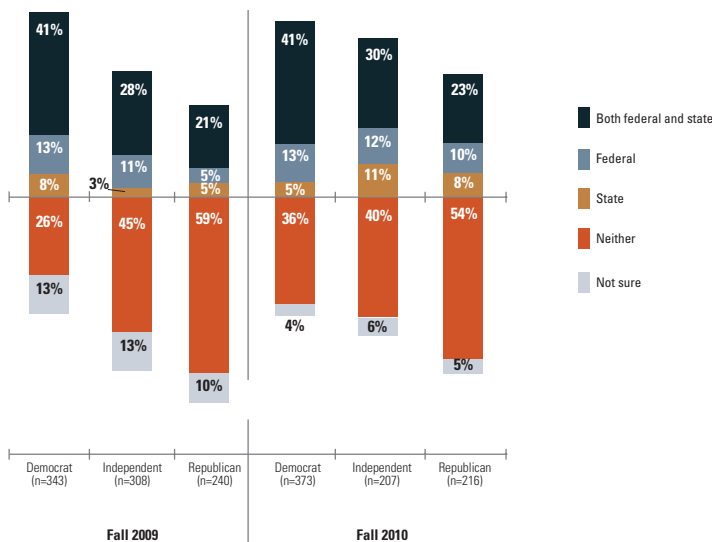


Figure 7b. Preferred level of government to levy a tax on fossil fuels, by political party^h



Source: Fall 2009 and Fall 2010 NSEE waves

^h Question text: "Next I'm going to provide you with a list of policies that can be used to limit the emission of greenhouse gases. For each option that I mention please tell if the policy should be adopted ONLY by the federal government, ONLY by your state government, by BOTH the federal and state governments, or should NOT be adopted by any government. Increasing taxes on all fossil fuels to reduce consumption and greenhouse gas emissions."

Republicans More Sensitive to Cuing than Democrats; Both Parties Swayed by Oppositional Frame

On such a highly polarized topic as climate action, it is perhaps unsurprising that opinions about climate policy can be influenced by knowing how the leaders of one's party feel about the policy. An experiment conducted within the Fall 2013 wave of the NSEE tested the relative support for a hypothetical climate policy proposed—and opposed—by various groups. It indicates that members of some political parties may be more sensitive to partisan cuing than others.

Among Democrats, support for a carbon tax was relatively stable across the five experimental groups, ranging by just 12 percentage points (see *Figure 8*). Support for a carbon tax among Democratic respondents was highest (41%) when told that “politicians” proposed the policy but Republicans opposed it. In comparison, support among Democratic respondents was (numerically, but not statistically) lowest (29%) in the experimental condition that framed carbon taxes as a policy proposed by Republicans but opposed by Democrats.

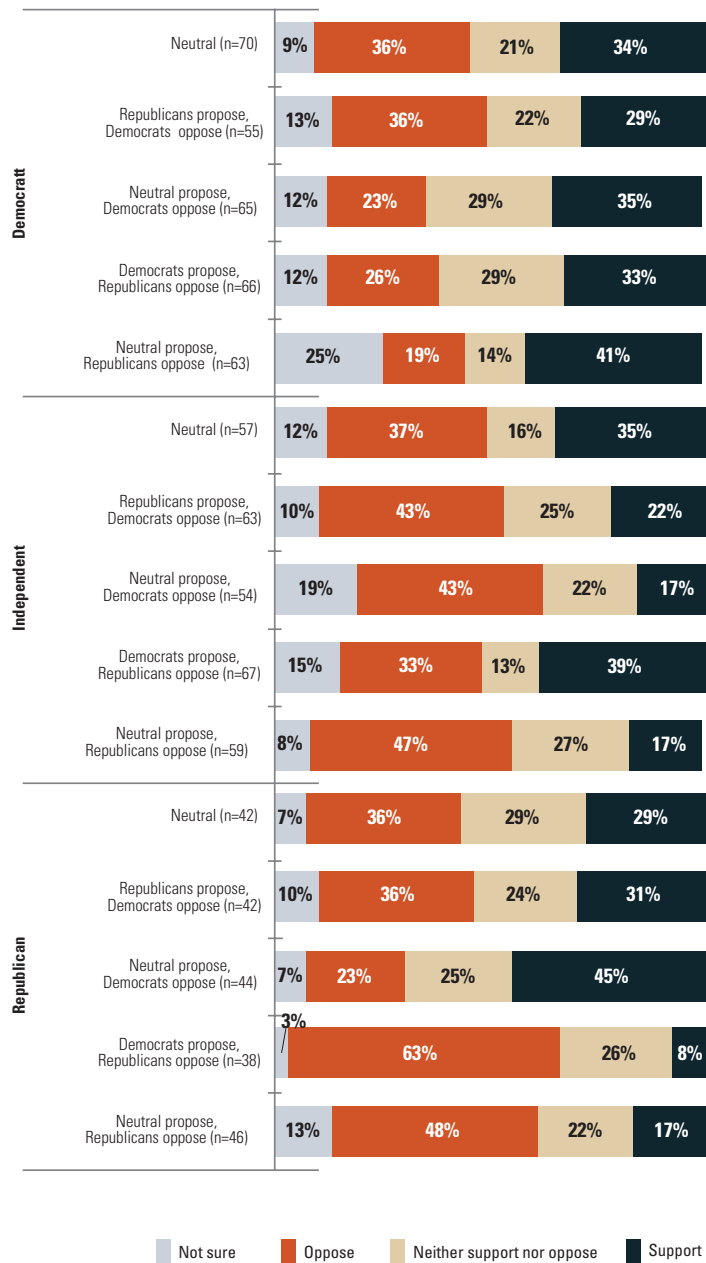
By contrast, Republican support for a carbon tax varied by 37 percentage points across the experimental groups. Republicans posted the lowest support (8%) when told the policy was proposed by Democrats and opposed by Republicans. Republican respondents were the most likely (45%) to support a carbon tax when told it was proposed by politicians and opposed by Democrats.

Furthermore, the results seem to indicate that Americans may be most heavily influenced by who stands in opposition to a policy rather than who favors it. Support by both Democrats and Republicans was greatest in the experimental condition in which a generically-described “politician” was said to have proposed the policy while the other party was in opposition. This further demonstrates the highly-polarized nature of the issue of carbon pricing and calls into question whether such a policy would ever be politically viable if support is highest when it is framed as a policy that the other party opposes. It does raise important questions about any future attempts to build a multi-partisan coalition to support a carbon tax in the United States, and may further explain why coalition building for such a tax has proven so challenging at both the federal and state level to date.

How Much do Words Matter?

Alongside issues of partisanship, questions of framing have continued to emerge in discussions of climate policy, particularly on issues of carbon pricing. Would shifts in the actual language used to describe or label a policy such as a carbon tax influence public support for it? A series of experiments, conducted on the Fall 2011 NSEE, aimed to understand whether attitudes about carbon pricing were linked to semantics: Was it just that people didn't like the word “tax,” or were they equally opposed to the overall concept behind the policy? Overall, the survey found wording generally did not alter support. For instance, 17% of respondents said they would favor a “tax” on gasoline; 20% said they would favor an “environmental levy.” Similarly, 35% favored a “cap-and-trade” system compared to 32% who favored a “limit-and-swap” system. An “environmental levy” on electric bills was slightly more favorable (26%) than a “surcharge” (15%). Full question text and frequencies are available on the NSEE webtables: <http://closup.umich.edu/national-surveys-on-energy-and-environment/nsee-data-tables/nsee-2011-fall/#Q36>.

Figure 8. Partisan cue experiment, by political partyⁱ



Source: Fall 2011 NSEE

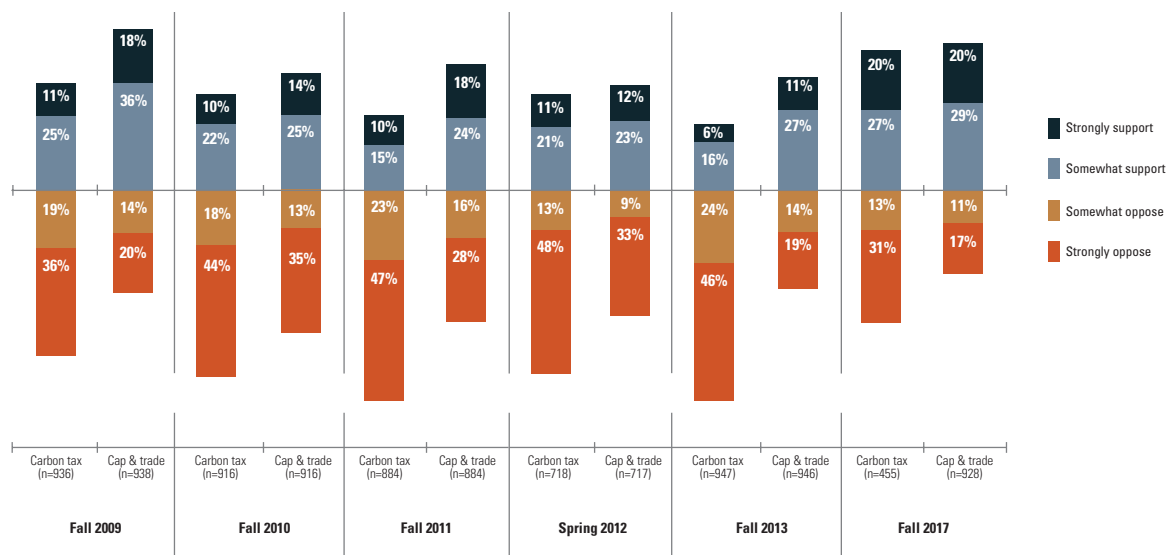
ⁱ Question text: "Some [politicians, Democrats, Republicans] have proposed policies that would increase the price of emitting carbon dioxide in the US. Other [politicians, Democrats, Republicans] do not support this policy, and have called this proposal a new tax. Do you support, oppose, or neither support or oppose efforts to increase the cost of carbon pollution?"

Americans Uncertain about Cap-and-Trade

While carbon taxes have yet to be adopted anywhere in the United States, there has been more successful (albeit mixed) experience with political adoption of carbon pricing in the form of cap-and-trade. One might expect this to be reflected in public opinion, with considerably more support for cap-and-trade than for carbon taxes.

The NSEE finds mixed evidence for such a hypothesis. On the one hand, on each of the waves in which both questions have been asked (i.e., among the very same respondents), cap-and-trade captured more support and less opposition than a carbon tax (see *Figure 9*). While the gap in support between cap-and-trade and carbon tax is just 2 percentage points on the most recent fielding in Fall 2017, it had been as high as 18 percentage points on the Fall 2009 NSEE. The gap in opposition has been considerably larger: in Fall 2013 more than twice as many respondents opposed a carbon tax as opposed cap-and-trade.

Figure 9. Support/opposition to a carbon tax and cap-and-trade, by survey wave^{a,j}



Source: Fall 2009-Fall 2017 NSEE waves

Notes: “Not sure” and “Neither support nor oppose” (Fall 2017 only) responses not shown. Additionally, the question text for Fall 2017 carbon tax specified the federal government bearing responsibility for the policy, and for cap-and-trade, state government was specified. Furthermore, in Fall 2017 this question was part of an experiment, and so only those in the control “non-treatment” group are included. As a result, the percentages may not match the data tables on the NSEE website.

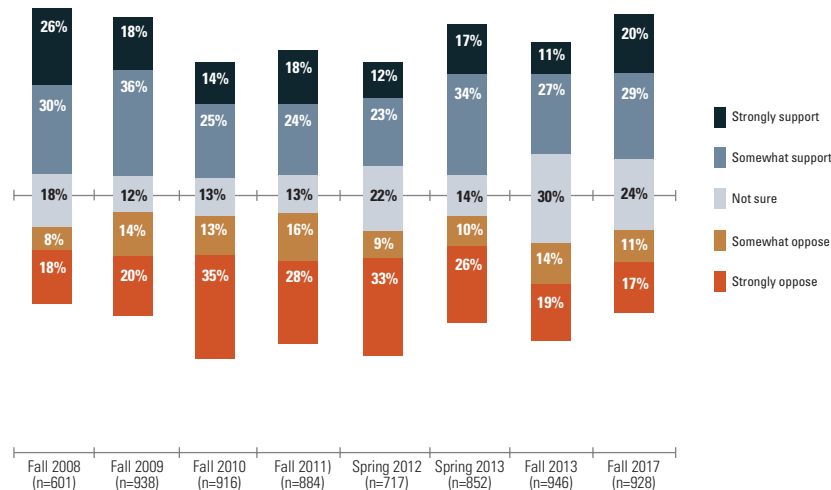
^j Question text: “There is a proposed system called cap-and-trade where the government would issue permits limiting the amount of greenhouse gases companies can put out. Companies that did not use all their permits could sell them to other companies. The idea is that many companies would find ways to put out less greenhouse gases because that would be cheaper than buying permits. Would you strongly support, somewhat support, somewhat oppose or strongly oppose this type of system?”

Question text (Spring 2012): “In order to reduce the emission of greenhouse gases a number of methods have been considered. For each of the methods of reducing greenhouse gas emission that I mention please indicate if you strongly support, somewhat support, somewhat oppose, or strongly oppose that option. Next, a policy to reduce greenhouse gases through a system where government caps the amount of greenhouse gases emitted by businesses through the provision of pollution credits and provides those businesses with the right to trade or sell those pollution credits.”

Question text (Fall 2017): “There have been a number of ideas proposed for how state governments can reduce the emissions of greenhouse gases. For each idea that I mention please tell me if you strongly support, somewhat support, somewhat oppose, or strongly oppose the proposed ways states can reduce greenhouse gas emissions. State governments should allow businesses to buy and sell permits to release greenhouse gases if it results in an overall decrease in emissions.”

This does not mean, however, that cap-and-trade has been particularly popular among NSEE respondents. To the contrary, as *Figure 10* demonstrates, the NSEE has found majority support only three of the eight times that a question on cap-and-trade has been asked, with the highest of these a modest 56% in Fall 2008. Instead, a significant percentage of Americans—sometimes as high as 30%—volunteered that they were unsure whether they supported cap-and-trade. By comparison, recall that in *Figure 1*, the highest levels of “not sure” responses when asked about a carbon tax was 9%. This suggests a wide body of Americans could potentially be persuaded to support cap-and-trade.

Figure 10. Support/opposition to cap-and-trade^k



Source: Fall 2008-Fall 2017 NSEE waves

Note: This figure includes a mix of questions about cap-and-trade in general and specifically about a state-level system. Fall 2009 & Fall 2013 respondents were asked both about cap-and-trade in general, and about a state-level system. Only the general data is included here. See *Note 8*.

^k Question text (Fall 2008, Spring 2013): “There have been a number of ideas proposed for how state governments can reduce the emissions of greenhouse gases. For each idea that I mention please tell me if you strongly support, somewhat support, somewhat oppose or strongly oppose the proposed ways states can reduce greenhouse gas emissions: State governments should allow businesses to buy and sell permits to release greenhouse gases if it results in an overall decrease in emissions.”

Americans Particularly Unsure About Support for Cap-and-Trade In Their Own State

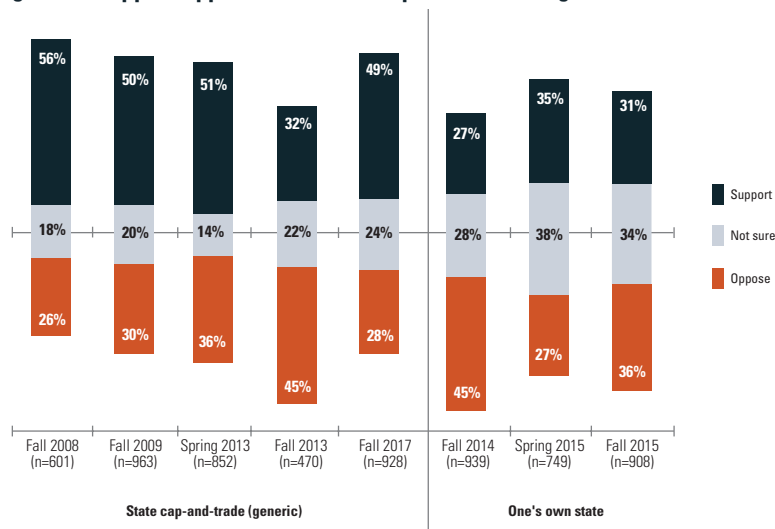
In addition to asking about support for cap-and-trade generally and support for state-level cap-and-trade more specifically, the NSEE has also asked respondents whether they would support or oppose a cap-and-trade program in their *own* state. This question was asked on three waves—Fall 2014, Spring 2015, and Fall 2015—as the EPA was rolling out information about its Clean Power Plan. This policy would have applied the Clean Air Act to carbon emissions in the electricity sector and required each state to reduce emissions in future decades. It was widely seen as endorsing cap-and-trade as the preferred strategy to achieve those goals. This put cap-and-trade back on the political map during this period, alongside some additional state adoption efforts.

An interesting pattern emerges upon comparing support for cap-and-trade in one’s own state on these three waves to responses on the five other waves which asked more generally about support for state cap-and-trade programs. Overall, there was less support for the policy when asked in the context of one’s own state (see *Figure 11*). While support for state cap-and-trade more generally ranged from 56% in Fall 2008 to 32% in Fall 2013, support for cap-and-trade in one’s own state was highest in Spring 2015 at just 35% and as low as 27% in Fall 2014.

There was not necessarily, however, significantly more opposition to the policy in the context of one’s own state compared to the more generic state-level framing. Opposition to cap-and-trade in one’s own state ranged from 27% in Spring 2015 to 45% in Fall 2014. The more generic state question had a nearly identical range of opposition, from 26% in Fall 2008 to 45% in Fall 2013.

Instead, what is notable were the very high levels of “not sure” responses to the state-specific question. On each of the three waves in which the question was fielded, at least a quarter of respondents volunteered that they were unsure whether they would support or oppose a cap-and-trade program in their state. In Spring 2015, as many as 38% noted that they were unsure. By contrast, on the more generic framing of the question, these volunteered “not sure” responses never exceeded 24%. This suggests that while Americans are generally less certain about how they feel about cap-and-trade compared to other climate policies, they are particularly unsure how they feel about the policy in their own state.

Figure 11. Support/opposition to state cap-and-trade, in general and in one’s own state^{k,l}



Source: Fall 2008-Fall 2017 NSEE waves

^k Question text (Fall 2014): “The new federal Clean Power Plan lets states pick from a series of options in deciding on how to reduce power plant emissions. For each of the following policy options I read please indicate if you support or oppose your state adopting that policy as a means of reducing emissions. Allowing businesses to buy and sell permits to release greenhouse gases to reduce greenhouse gases. This policy is commonly referred to as cap-and-trade.”

^l Question text (Spring 2015): “Do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree that your state should have a cap-and-trade program?”

Question text (Fall 2015): “Now I would like to ask you a few questions about government policy designed to reduce greenhouse gas emissions. The federal government has introduced a Clean Power Plan that is designed to reduce greenhouse gases from power plants. The plan lets states pick from a series of options in deciding on how to reduce power plant emissions. For each of the following policy options I read please indicate if you strongly support, somewhat support, somewhat oppose, or strongly oppose your state adopting that policy as a means of reducing emissions. Allowing businesses to buy and sell permits to release greenhouse gases to reduce greenhouse gases. This policy is commonly referred to as cap-and-trade.”

Less Uncertainty, but More Polarized Views among those Most Familiar with Cap-and-Trade

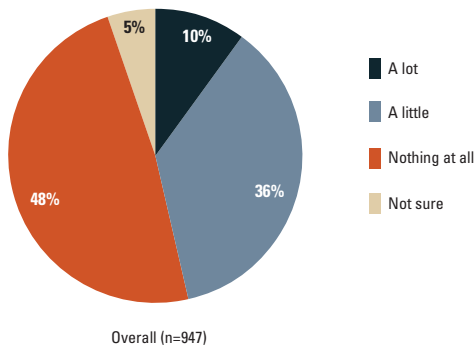
Why is it that the NSEE finds that so many Americans are unsure about whether they would support or oppose cap-and-trade? One possible explanation is that this policy is much more difficult for Americans to understand than carbon taxes; whereas people generally understand how taxes work and so can extrapolate how a carbon tax might be implemented, the average person may have no mental model of how an emission-trading system might work.

The NSEE does find some evidence for this. Even after having been given a three-sentence explanation of how cap-and-trade works, in 2013 nearly half (48%) of Americans said they had not heard anything about the system (see *Figure 12*). By contrast, just 10% said they had heard a lot about it, while roughly a third (36%) said they had heard a little about it. Notably, living in a state with a cap-and-trade policy does not necessarily increase one’s familiarity with cap-and-trade.⁹

Familiarity with cap-and-trade appears to have two effects on attitudes about the policy. First, those who report having heard more about cap-and-trade are significantly less likely to volunteer that they are unsure whether they would support or oppose the policy (see *Figure 13*). Among those who are most familiar with cap-and-trade, only 3% volunteered a “not sure” response, compared to 45% of those who reported knowing nothing at all about the policy. Familiarity thus contributes significantly to great certainty in responses.

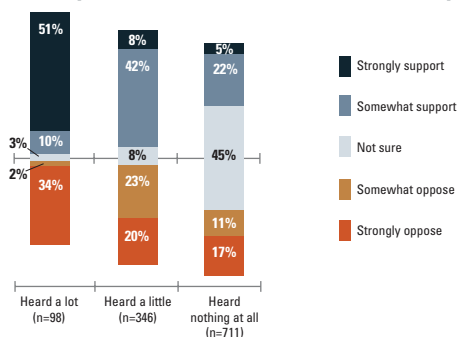
Those who are most familiar with cap-and-trade also appear to hold the strongest views both in support and opposition to the policy. Among those who reported having heard “a lot” about cap-and-trade, 85% either *strongly* supported the policy (51%) or *strongly* opposed the policy (34%). By contrast, among those who reporting having heard “a little” about cap-and-trade, only 28% had a strong opinion: 8% strongly supported it and 20% strongly opposed it.

Figure 12. How much Americans have heard about cap-and-trade^m



Source: Fall 2013 NSEE

Figure 13. Support/opposition to cap-and-trade, based on how much respondent has heard about policy^{i,m}



Source: Fall 2013 NSEE

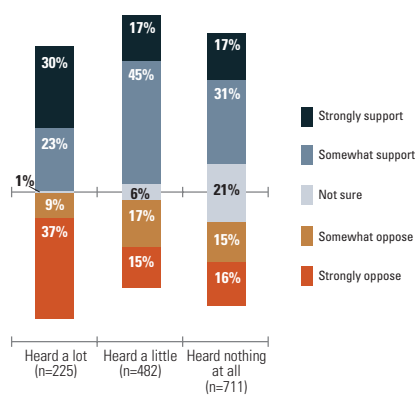
^m Question text: “There is a proposed system called cap-and-trade where the government would issue permits limiting the amount of greenhouse gases companies can put out. Companies that did not use all their permits could sell them to other companies. The idea is that many companies would find ways to put out less greenhouse gases because that would be cheaper than buying permits. Have you heard a lot about this system, a little, or not at all?”

Canada Corner: Canadians Only Vaguely Familiar with Cap-and-Trade

Despite the fact that four of the largest Canadian provinces have moved ahead with carbon pricing systems in recent years, polling data from the CSEE reveal that Canadians are at best vaguely familiar with these instruments, particularly in the form of cap-and-trade. In Fall 2013, for instance, only about 1 in 8 (13%) of respondents said they heard “a lot” about this policy following a detailed description of how carbon cap-and-trade works, while about half (50%) said they have heard “nothing at all.” While respondents who heard “a lot” about cap-and-trade (1%) were significantly less likely than those saying they heard “a little” (6%) or “nothing at all” (21%) to report being unsure, increased familiarity tended to polarize opinion, with attitudes amongst the most familiar polarized between those who strongly support (30%) and strongly oppose (37%) cap-and-trade as a means of reducing greenhouse gas emissions. This largely mirrors the same findings as on the NSEE (compare figure below to *Figure 13*).

Two years later, the Fall 2015 CSEE found that the proportion of Canadians indicating they had heard “a lot” about cap-and-trade increased to nearly 1 in 5 (19%), though a plurality (44%) continued to report having heard “nothing at all.” In this wave, respondents were subsequently asked whether or not, to the best of their knowledge, their province had adopted such a system. After coding correct and incorrect responses, the survey found the most common response (40%) was “not sure,” while others were evenly split (30% each) between correctly (incorrectly) indicating they live (do not live) in a province with cap-and-trade. Despite having in place a functioning cap-and-trade system since 2013, respondents living in the province of Quebec (22%) were no more likely than residents living in other provinces (18%) to have heard “a lot” about cap-and-trade, while Quebeckers (32%) were no more likely than those living in the rest of Canada (30%) to correctly answer the question on whether or not their province had adopted such a system. Overall, these results suggest that, at least in Canada, few pay attention to elite debates around carbon pricing, and that rather than lead to a convergence of support, greater familiarity around carbon pricing may actually lead to polarized policy preferences.

Support/opposition to cap-and-trade among Canadians, based on how much respondent has heard about policy



Question text: See footnotes j & m

Source: Fall 2015 CSEE

Opposition to Cap-and-Trade Grows Once Costs Applied

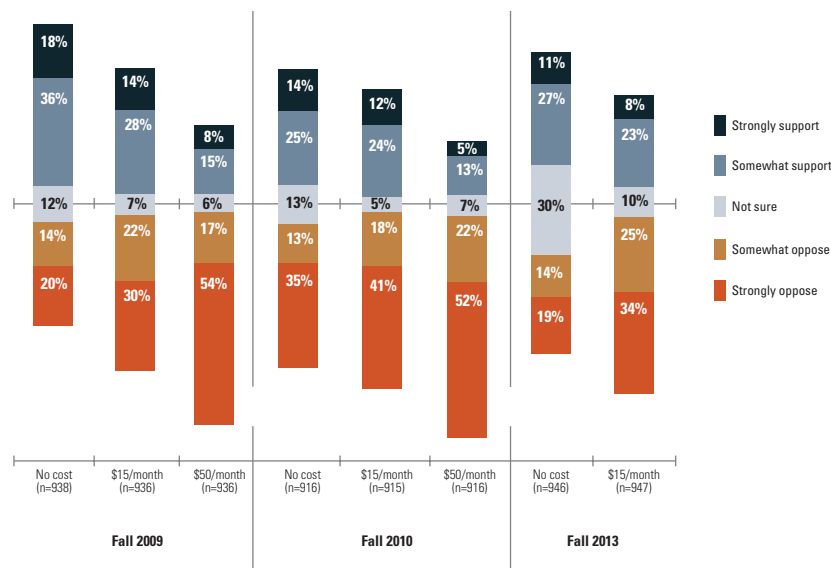
While a lack of familiarity with cap-and-trade certainly accounts for some of the high levels of “not sure” responses seen on the NSEE, evidence from the survey suggests another possible explanation: that uncertainty over cap-and-trade may be a function of Americans not being sure how much such a policy will cost them.

On three previous waves, respondents were first asked about their support for or opposition to cap-and-trade with no cost attached. Then the same respondents were immediately asked whether they would support or oppose the policy if it increased their electricity bill \$15 per month, roughly the same cost as the Congressional Budget Office’s projected average household cost of the 2009 Waxman-Markey bill.⁵ On two of these three fieldings, these same respondents were again asked about their support at a \$50 per month price-point.

On each of these three waves, the proportion of respondents volunteering that they were “not sure” about the baseline cap-and-trade policy was nearly cut in half once any price was put on the policy. On the Fall 2013 survey, it fell 20 percentage points, from 30% in the baseline case to 10% at the \$15 per month version (see *Figure 14*).

Across these waves, support also dropped from the no-cost version to the \$15 per month version (though only 3 percentage points in Fall 2010). Recall, however, that this was not the same outcome as when a similar battery of questions was asked about carbon taxes (discussed on page 6); for carbon taxes, the \$15 per month option saw increased support or no change compared to the base case, which we attribute to respondents initially assuming that a carbon tax would have a higher price-point than \$15. Thus, it follows that respondents have no such assumption about cap-and-trade.

Figure 14. Support/opposition to cap-and-trade, with and without a dollar value mentioned^a



Source: Fall 2009, Fall 2010, and Fall 2013 NSEE waves

^a Question text (\$15/month): “What if the cap-and-trade program significantly lowered greenhouse gases but raised your monthly electrical bill by 15 dollars a month? Would you strongly support, somewhat support, somewhat oppose, or strongly oppose this type of system?”

Question text (\$50/month): “What if the cap-and-trade program significantly lowered greenhouse gases but increased your energy costs by 50 dollars a month? Would you strongly support, somewhat support, somewhat oppose, or strongly oppose this type of system?”

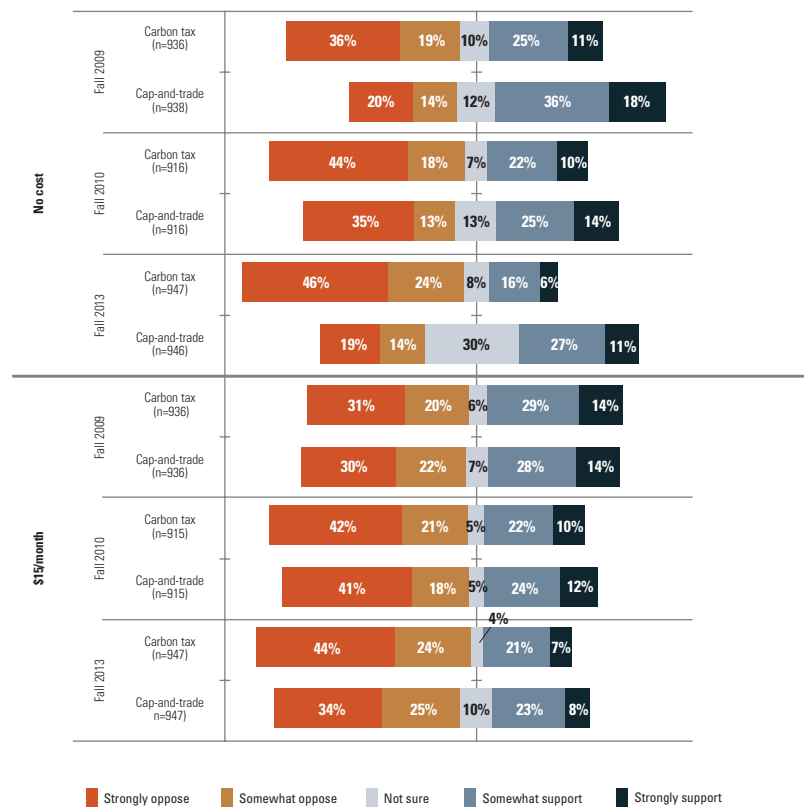
Cap-and-Trade with a Stated Cost Receives Similar Support as a Carbon Tax

Because these price-sensitivity questions for carbon taxes and cap-and-trade were conducted on the same survey waves, we can compare the results head-to-head. On the no-cost baseline question in each wave, there was considerably more support and less opposition to cap-and-trade than the carbon tax, as previously reported in *Figure 9*.

However, at the \$15 per month level, these differences between cap-and-trade and a carbon tax begin to disappear, as support for a carbon tax grows and support for cap-and-trade decreases (see *Figure 15*). The survey responses for a \$15 per month carbon tax and \$15 per month cap-and-trade program were nearly identical in Fall 2009, and not statistically different in Fall 2010. In Fall 2013, there was no statistical difference in support between cap-and-trade and a carbon tax, though there was higher opposition to a carbon tax and commensurately higher “not sure” responses for cap-and-trade. At the \$50 a month level, there was slightly higher support for cap-and-trade in Fall 2009 and slightly higher opposition to a carbon tax in Fall 2010 but no other meaningful differences.¹⁰

This suggests that American attitudes about carbon pricing are relatively policy-blind: that it isn't so much the toxicity of the word “tax” that makes a carbon tax unpopular, as the (correct) assumption that it will come with a price tag. By contrast, many appear to assume that cap-and-trade would have no such price tag, and so show stronger support—or are more likely to say they are unsure whether they would support—a policy in which no cost is stated. Once the same price is applied to both policies, most of the differences in support and opposition disappear.

Figure 15. Support/opposition to a carbon tax and cap-and-trade, with and without a dollar value mentioned^{d,n}

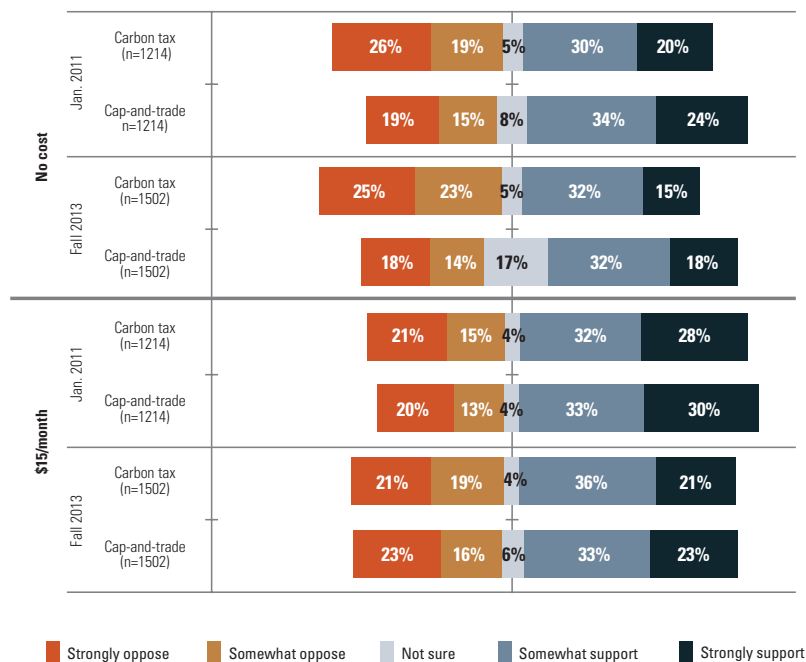


Source: Fall 2009, Fall 2010, and Fall 2013 NSEE waves

Canada Corner: Canadians More Amenable to Carbon Pricing

In Canada, the CSEE have generally found less support for carbon taxes than support for cap-and-trade, though differences in support across these two instruments appears to be less stark in Canada than in the United States. For instance, in January 2011, cap-and-trade's (58%) significant advantage in support over a carbon tax (50%) disappeared when a \$15 per month cost was attached to both policies, though notably, support for both policies increased over the no-cost baseline. In 2013, Canadian attitudes toward the two policies were broadly similar, irrespective of whether or not a cost was attached. Comparing the figure below to *Figure 15* demonstrates that Canadians are considerably more supportive of carbon pricing (including *taxes*) than Americans, especially once a price tag is attached.

Support/opposition to a carbon tax and cap-and-trade among Canadians, with and without a dollar value mentioned



Question text: See footnotes d & n
 Source: January 2011& Fall 2013 CSEE

Republicans Consistently Less Supportive of Cap-and-Trade

As with carbon taxes, there are partisan-based differences in support for cap-and-trade. On all NSEE waves, Democrats in support of the policy have outnumbered those opposed to it—though just barely in Fall 2010 (see *Figure 16a*). Independents posted net support in the first two waves, before dipping to net opposition from Fall 2010 through Spring 2012, but this has subsequently returned to net support. By contrast, Republicans who said they opposed the policy have outnumbered Republicans who supported the policy on all but two waves—the very first survey (Fall 2008, with 17% net support among Republicans) and the most recent fielding (Fall 2017, with 7% net support among Republicans).

There are fewer partisan-based differences in the proportion of respondents who volunteered that they were unsure whether they supported or opposed cap-and-trade (see *Figure 16b*). While these volunteered responses fluctuated from wave-to-wave, they were relatively consistent across party lines. Though Republicans often had numerically fewer “not sure” volunteered responses, the only wave where this was statistically significant was Spring 2012.

It is important to place these findings in the context of the animated American national debate over proposed cap-and-trade legislation between during 2009 and 2010. This followed rapid diffusion among nearly half of the states in the prior half-decade and led to extended discussion of adoption of a federal cap-and-trade system by Congress amid the Great Recession and many competing national agenda items. Cap-and-trade was confronted with an aggressive and well-publicized set of attacks during this period, frequently denigrated as a “cap-and-tax” system that would extend recession. This period reflected considerable negative shifts in the views of cap-and-trade, a pattern that would follow for several years before being reversed in more recent years.

Figure 16a. Net support for cap-and-trade, by political party^{i,k}

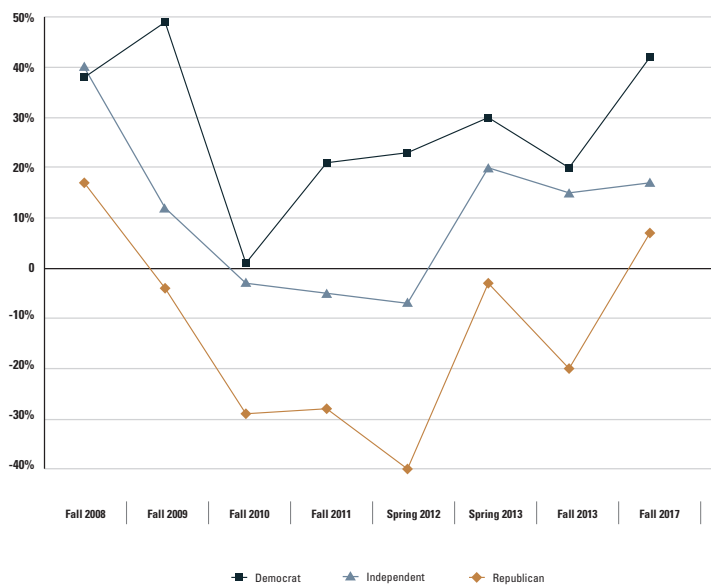
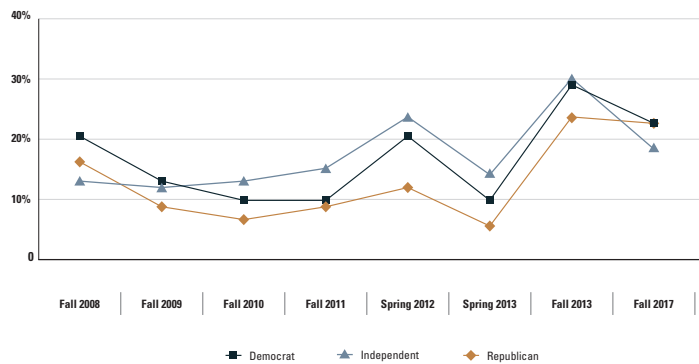


Figure 16b. Volunteered “not sure” responses on support/opposition to cap-and-trade, by political party^{i,k}



Source: Fall 2008-Fall 2017 NSEE waves

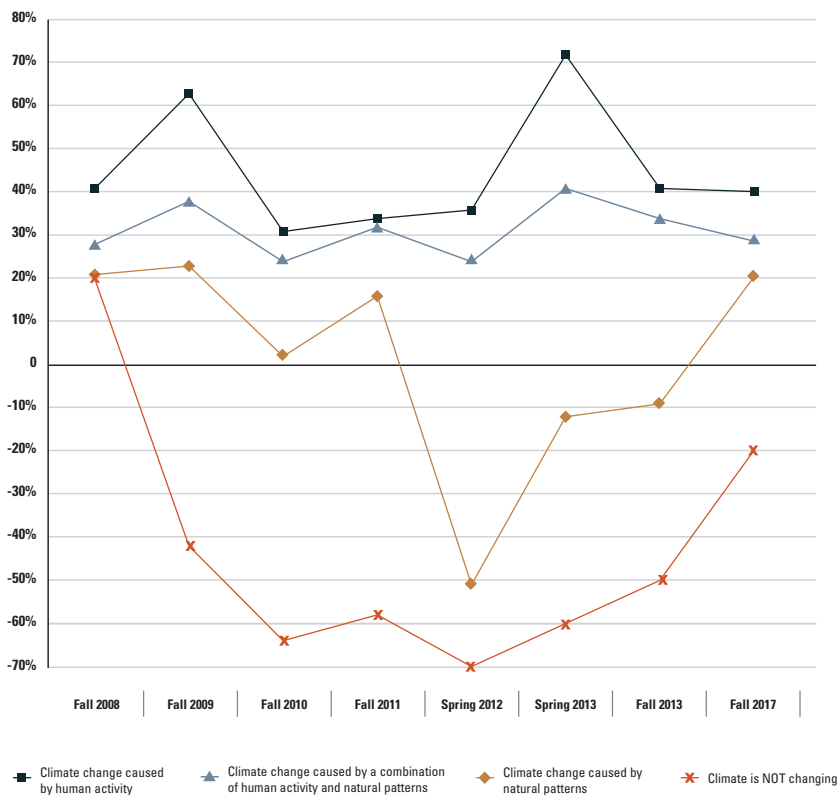
Note: See *Note 11* on page 31 for the sample size for each of the groups shown in *Figures 16a* and *16b*.

Net Support for Cap-and-Trade Highest among Those Who Ascribe Climate Change to Human Activity

Consistent with other attitudes toward climate action, the NSEE has found the greatest support for cap-and-trade among Americans who believe climate change is caused primarily by human activity. This group has posted at least 30% net support for the policy on all fieldings of the question (see *Figure 17*). Similarly, among those who say that climate change is happening and attribute it to a combination of human activity and natural patterns, there have been more supporters than opponents of cap-and-trade on each of the NSEE surveys.

By contrast, Americans who say that earth is warming, but who attribute that warming primarily to natural patterns, have been less consistent in their support for cap-and-trade. This group posted net support from the Fall 2008 through Fall 2011 surveys, and then again in Fall 2017. Between Spring 2012 and Fall 2013, however, more of those who ascribe to natural pattern-caused climate change said they opposed cap-and-trade rather than supported it. Similarly, among those who say there is no evidence that earth is warming, more have opposed rather than supported cap-and-trade on all waves except the very first (Fall 2008). As with partisanship, there have been no clear patterns to those who volunteered that they were unsure about cap-and-trade based on their stance toward climate change (see *Appendix B*).

Figure 17. Net support for cap-and-trade, by stance toward climate change^{i&k,b&c}



Source: Fall 2008-Fall 2017 NSEE waves

Note: See *Note 12* on page 31 for the sample size for each of the groups shown in the figure.

Americans Prefer that Cap-and-Trade Revenues Remain in Energy Sector

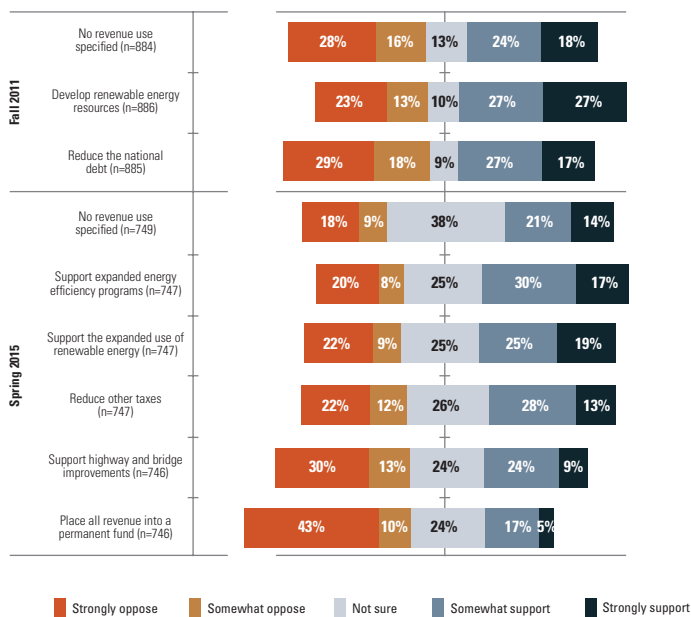
As was the case for carbon taxes, the NSEE has found that policy design, particularly in terms of revenue use, can significantly impact public support for cap-and-trade. On three separate surveys, respondents were most supportive of policy designs that used revenues generated from the sale or auctioning of permits to fund additional clean energy programs. This squares with decisions made in the states of the Regional Greenhouse Gas Initiative to concentrate their cap-and-trade auction revenues in this area.

On the Fall 2010 survey, 43% of respondents said their top preference would be for revenues to fund renewable energy research. Returning any revenues to citizens through a tax rebate was a distant second place, with 15% preferring that option.¹³ When the same question was put to a Canadian sample a few months later, the distribution was almost identical, with a majority (51%) of Canadians expressing a preference for using revenue to fund research into renewables, and the second most popular option being tax rebates for citizens, with 15% support.¹⁴

On the Fall 2011 survey, a policy design in which revenues were used to develop renewable energy resources increased support by 12 percentage points over the baseline question in which no details were given on revenue use (see *Figure 18*). Specifying that revenues would be used to reduce the national deficit also slightly increased support, but by only 2 percentage points over the baseline.

The Spring 2015 survey included a larger range of revenue use options, but found, once again, that those related to clean energy rose to the top. An option to use revenues to fund expanding energy efficiency programs increased support over the baseline by 12 percentage points, while expanding the use of renewable energy increased support by 9 points. By contrast, support decreased compared to the baseline for designs that would be used to fund highway and bridge improvements (2 percentage points) or be placed in a permanent fund to address long-term state needs (13 points).

Figure 18. Support/opposition to cap-and-trade with revenue use specified^o



Source: Fall 2011 and Spring 2015 NSEE waves

Report Highlight

In June 2015, NSEE released an extended report on cap-and-trade. It included partisan breakdowns on cap-and-trade revenue use, finding that expanding energy efficiency programs was the only option that garnered more support (44%) than opposition (39%) among Republicans. The report also found:

- Residents in states that had cap-and-trade programs in place were no more likely than other Americans to support cap-and-trade.
- Very few Americans (29%) knew whether or not their state had adopted a cap-and-trade program.

The full report is available on the NSEE website at: <http://closup.umich.edu/issues-in-energy-and-environmental-policy/23/>.

^o Question text (Fall 2011, Renewable energy): "What if revenue generated from the sales of permits to businesses was used to develop renewable energy resources? Would you strongly support, somewhat support, somewhat oppose, or strongly oppose this type of system?"

Question text (Fall 2011, Debt): "What if revenue generated from the sales of permits to businesses was used to reduce the national debt? Would you strongly support, somewhat support, somewhat oppose, or strongly oppose this type of system?"

Question text (Spring 2015): "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. What if a cap-and-trade program increased energy costs but used all revenue to ..."

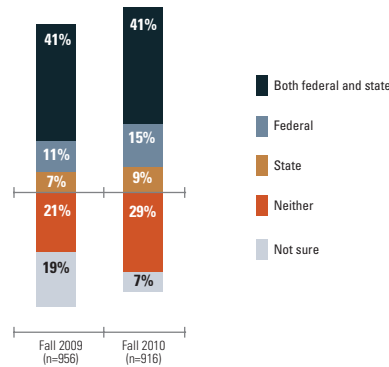
Americans Prefer a National Cap-and-Trade Program

An enduring question in the design of American climate and environmental programs remains the extent to which they should operate on a national basis or allow for state-by-state variation. Thus far, the American approach through actual policy adoption of cap-and-trade has involved individual state decisions, albeit with some coordination among neighbors on a regional scale in the Northeast with the Regional Greenhouse Gas Initiative. In contrast, the Emissions Trading Scheme of the European Union operates on a continental basis and Canada's proposed Pan-Canadian Framework for carbon pricing would set national standards but give individual provinces enormous latitude in program design and revenue allocation. This question is likely to resurface in future American deliberations over the future of carbon pricing.

As was seen previously with a carbon tax, when given the option, most Americans said they would prefer that a cap-and-trade system be adopted at both the state and federal levels of government. Among those who thought only one level of government should adopt such a policy, there was more support for a federal cap-and-trade program than for a state program (see *Figure 19*), as also was the case with a carbon tax.

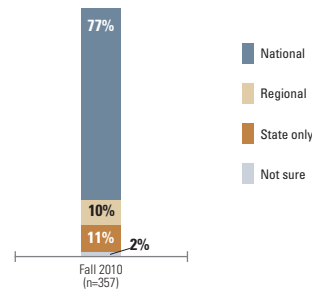
Though this finding is consistent with public preferences for a range of climate policies, it's unclear just how both a federal and state cap-and-trade program might co-exist. As a result, subsequent NSEE questions about policy preferences for cap-and-trade have forced respondents to choose a single level of government. On these, there is consistently more support for a nation-wide approach than a state-based one. The Fall 2010 NSEE found, for example, that 77% of those who said they support cap-and-trade preferred that it be administered at a national, rather than regional or state, level (see *Figure 20*). A Fall 2015 question similarly found majority (54%) support for a cap-and-trade system in which all states were involved (see *Figure 21*). The key difference between the 2010 and 2015 questions was that the latter was asked among all respondents, not just those in favor of cap-and-trade, which may explain the comparatively high level of "not sure" responses in 2015.

Figure 19. Preferred level of government to adopt a cap-and-trade program^p



Source: Fall 2009 and Fall 2010 NSEE waves

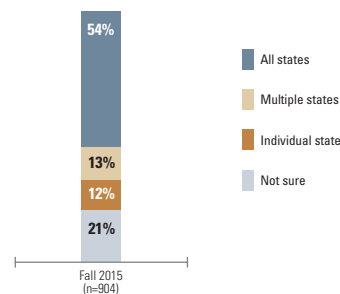
Figure 20. Preferred level of government to adopt a cap-and-trade program, Fall 2010^q



Source: Fall 2010 NSEE

Note: Asked only among those who first said they would support cap-and-trade.

Figure 21. Preferred level of government to adopt a cap-and-trade program, Fall 2015^r



Source: Fall 2015 NSEE

^p Question text: "Next I'm going to provide you with a list of policies that can be used to limit the emission of greenhouse gases. For each option that I mention please tell if the policy should be adopted ONLY by the federal government, ONLY by your state government, by BOTH the federal and state governments or should NOT be adopted by any government: Allow businesses to buy and sell permits to release greenhouse gases if it results in an overall decrease in emissions."

^q Question text: "If a cap-and-trade system was to be used to reduce greenhouse gas emissions, would you prefer that it be done at the national level, within a region of the country, or only within an individual state?"

^r Question text: "If a cap and trade system was to be used to reduce greenhouse gas emissions under the Clean Power Plan, would you prefer that it be done only within an individual state, by multiple states working together, or with ALL states working together?"

Conclusion

Despite the long-standing base of support among economists, both carbon taxes and cap-and-trade have struggled in past decades to win and sustain political support. These findings confirm a divided public response to the idea of carbon pricing in the United States, serving to explain why political support for either a carbon tax or cap-and-trade has been so difficult to sustain at the federal level and in most states. Neither policy has the broad base of public support that is usually thought necessary to assure a strong chance of adoption. Furthermore, while carbon taxes generally appear less supported than cap-and-trade, this is likely a function of Americans' comparative unfamiliarity with cap-and-trade. Once a common price tag is attached to both policies, these differences disappear, with a solid majority opposed to both.

The NSEE has found, however, that policy design can shape and possibly increase public support for carbon pricing. In particular, revenue use targeted toward clean energy investments or commensurate reduction of other taxes can significantly elevate support for both carbon taxes and cap-and-trade. Nonetheless, the American public remains quite divided on the issue of carbon pricing, with particularly notable and seemingly enduring partisan divides making any further consensus that crosses party lines elusive.

Methods

The NSEE is a biannual telephone survey of a random sample of adult (age 18 and over) residents of the United States. The sample size, balance of landline and cell phone numbers, and response rate varies from wave to wave. Methodological details about each of the survey waves are available on the CLOSUP website: www.closup.umich.edu/nsee.

The CSEE have (to date) been conducted concurrently with the Fall wave of the NSEE. Like the American surveys, the CSEE surveys use random digit dialing (RDD) of landline and cell phones to generate a probabilistic, nationally representative sample of adult (18 and over) residents of Canada. The sample size, balance of landline and cell phone completes, and response rates vary from wave to wave and have been compiled on the CLOSUP website: www.closup.umich.edu/nsee.

Funding, Financial Disclosure, and Research Transparency

Funding for the NSEE surveys to-date has been provided by general revenues of the University of Michigan Center for Local, State, and Urban Policy, and the Muhlenberg College Institute of Public Opinion. The authors did not accept any stipend or supplemental income in the completion of the survey or the reports from this survey. The NSEE is committed to transparency in all facets of our work, including timely release and posting of data from each survey wave, including providing online access to NSEE survey instruments, data tables, and downloadable datasets.

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Notes

1. Borick, C., Rabe, B. G., & Mills, S. (2017, June 12). Trump’s global warming views remain elusive, but not those of Americans [FIXGOV Blog post]. *Brookings Institution*. Retrieved from <https://www.brookings.edu/blog/fixgov/2017/06/12/trumps-global-warming-views-remain-elusive-but-not-those-of-americans/>

2. The sample size for each of the groups shown in *Figure 2a* is:

	Fall 2009	Fall 2010	Spring 2011	Fall 2011	Spring 2012	Fall 2012	Fall 2013	Spring 2014	Fall 2016
Democrat	342	372	248	284	230	312	319	291	310
Independent	308	207	184	259	189	281	301	215	294
Republican	239	215	188	181	172	191	213	181	213

3. The sample size for each of the groups shown in *Figure 2b* is:

	Fall 2009	Fall 2010	Spring 2011	Fall 2011	Spring 2012	Fall 2012	Fall 2013	Spring 2014	Fall 2016
Human activity	223	194	159	218	171	270	228	162	272
A combination	395	216	149	190	213	218	210	160	204
Natural patterns	75	95	75	114	67	113	121	96	147
Climate is NOT changing	188	243	223	227	174	193	236	264	157

4. Rabe, B. G. & Mills, S. B. (2017). State energy policy in the Trump era: Insights from public opinion. *Journal of Environmental Studies and Sciences*, 7(4), 535-539. doi.org/10.1007/s13412-017-0453-6
5. See U.S. Congressional Budget Office (CBO). (2009). *The estimated costs to households from the cap-and-trade provisions of H.R. 2454*. Washington, D.C.: CBO. Retrieved from <https://www.cbo.gov/sites/default/files/111th-congress-2009-2010/reports/06-19-capandtradecosts.pdf>
6. U.S. Energy Information Administration (EIA). (n.d.). *2016 average monthly bill- residential*. Washington, D.C.: EIA. Retrieved from https://www.eia.gov/electricity/sales_revenue_price/pdf/table5_a.pdf. Note that this doesn’t include heating or cooking fuels, or energy costs from transportation.
7. Mills, S. B., Fitzpatrick, N. B., Rabe, B. G., Borick, C., & Lachapelle, E. (2018). Should state and local governments address climate change? 10 years of climate federalism in the NSEE. *Issues in Energy and Environmental Policy*, 34. Ann Arbor, MI: 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/34/should-state-and-local-governments-address-climate-change-10-years-of-climate-federalism-in-the-nsee/>
8. While there were no statistically significant differences between responses to the general version of the question and the question about a state-level system on the Fall 2009 survey, the Fall 2013 survey showed statistically significant differences: fewer respondents volunteered they were “not sure” and more respondents strongly opposed the state-level version than the general version.

9. The table below breaks down familiarity with cap-and-trade, based on whether or not the state participated in a cap-and-trade program in 2013. Additionally, on a separate survey in Spring 2015, 65% of respondents volunteered that they were not sure if their state had adopted a cap-and-trade program.

	Overall (n=947)	States with cap & trade (n=272)	States without cap & trade (n=675)
A lot	10%	9%	11%
A little	36%	38%	36%
Nothing at all	48%	46%	49%
Not sure	5%	7%	4%

10. See Questions 43 & 46 on Fall 2009 NSEE data tables at <http://closup.umich.edu/national-surveys-on-energy-and-environment/nsee-data-tables/nsee-2009-fall/>, and Questions 47 & 50 on Fall 2010 NSEE data tables at <http://closup.umich.edu/national-surveys-on-energy-and-environment/nsee-data-tables/nsee-2010-fall/>.

11. The sample size for each of the groups shown in *Figure 16a* & *16b* is:

	Fall 2008	Fall 2009	Fall 2010	Fall 2011	Spring 2012	Spring 2013	Fall 2013	Fall 2017
Democrat	197	343	373	284	229	316	319	271
Independent	152	308	208	259	189	227	301	267
Republican	150	239	216	185	172	193	212	216

12. The sample size for each of the groups shown in *Figure 17* is:

	Fall 2008	Fall 2009	Fall 2010	Fall 2011	Spring 2012	Spring 2013	Fall 2013	Fall 2017
Human activity	146	224	194	221	171	228	229	326
A combination	182	306	216	190	213	234	210	163
Natural patterns	81	76	95	112	66	62	122	106
Climate is NOT changing	100	188	242	228	175	184	235	171

13. See Question 51 on Fall 2010 NSEE data tables at <http://closup.umich.edu/national-surveys-on-energy-and-environment/nsee-data-tables/nsee-2010-fall/#Q51>.

14. Lachapelle, R., Borick, C. P., and Rabe, B. (2012). Public attitudes toward climate science and climate policy in federal systems: Canada and the United States compared. *Review of Policy Research*, 29(3), 334-357. doi.org/10.1111/j.1541-1338.2012.00563.x

Appendix A

Support/opposition to a carbon tax, with revenue use specified, by political party

Fall 2011	Democrat			Republican		
	Base	Revenue Neutral	Renewables/ R&D	Base	Revenue Neutral	Renewables/ R&D
Strongly support	19%	13%	26%	1%	5%	6%
Somewhat support	21%	24%	29%	8%	18%	16%
Somewhat oppose	19%	23%	13%	25%	31%	25%
Strongly oppose	38%	34%	30%	62%	36%	48%
Not sure	4%	6%	3%	3%	10%	5%
N	284	135	284	181	78	182

Fall 2013	Democrat			Republican		
	Base	Revenue Neutral	Renewables/ R&D	Base	Revenue Neutral	Renewables/ R&D
Strongly support	8%	24%	26%	2%	15%	10%
Somewhat support	20%	45%	42%	9%	34%	45%
Somewhat oppose	24%	11%	8%	30%	15%	16%
Strongly oppose	44%	14%	17%	52%	29%	20%
Not sure	4%	6%	7%	7%	8%	8%
N	319	164	156	213	94	119

Spring 2014	Democrat			Republican		
	Base	Revenue Neutral	Renewables/ R&D	Base	Revenue Neutral	Renewables/ R&D
Strongly support	17%	32%	31%	0%	11%	23%
Somewhat support	21%	32%	38%	10%	26%	26%
Somewhat oppose	8%	9%	7%	15%	19%	14%
Strongly oppose	52%	23%	22%	72%	40%	35%
Not sure	3%	4%	2%	3%	4%	2%
N	151	151	151	92	93	92

Fall 2016	Democrat			Republican		
	Base	Revenue Neutral	Renewables/ R&D	Base	Revenue Neutral	Renewables/ R&D
Strongly support	33%	37%	47%	13%	22%	23%
Somewhat support	33%	33%	30%	17%	23%	22%
Somewhat oppose	10%	12%	5%	18%	14%	18%
Strongly oppose	16%	13%	13%	45%	36%	31%
Not sure	7%	5%	4%	7%	6%	6%
N	310	309	310	213	214	213

Appendix B

Volunteered “not sure” responses on support/opposition to cap-and-trade, by stance on climate change

	Fall 2008	Fall 2009	Fall 2010	Fall 2011	Spring 2012	Spring 2013	Fall 2013	Fall 2017
Climate change caused by human activity	11%	6%	19%	14%	15%	9%	22%	14%
Climate change caused by a combination of human activity and natural patterns	21%	16%	9%	13%	29%	10%	26%	18%
Climate change caused by natural patterns	23%	7%	9%	4%	20%	16%	31%	18%
Climate is NOT changing	16%	9%	7%	8%	14%	9%	26%	15%

Reports from National Surveys on Energy and Environment

- Should State and Local Governments Address Climate Change? 10 Years of Climate Federalism in the NSEE (March 2018)
- Coal, Natural Gas, and Pipelines: 10 Years of Fossil Fuels in the NSEE (February 2018)
- A Majority of Americans Support Net Energy Metering (September 2017)
- Strong Public Support for State-level Policies to Address Climate Change (June 2017)
- Moving the needle on American support for a carbon tax (March 2017)
- Fewer Americans Doubt Global Warming is Occurring (August 2016)
- American Views on Fracking (May 2016)
- American Attitudes about the Clean Power Plan and Policies for Compliance (December 2015)
- Acceptance of Global Warming Rising for Americans of all Religious Beliefs (November 2015)
- Acceptance of Global Warming Among Americans Reaches Highest Level Since 2008 (October 2015)
- Belief in Global Warming Among Americans Gradually Increases Following the Winter of 2015 (July 2015)
- Cap-and-Trade Support Linked to Revenue Use (June 2015)
- Widespread Public Support for Renewable Energy Mandates Despite Proposed Rollbacks (June 2015)
- Acceptance of Global Warming Among Americans Moderately Increases in Late 2014 (February 2015)
- Public Support for Regulation of Power Plant Emissions Under the Clean Power Plan (January 2015)
- Public Opinion on Hydraulic Fracturing in the province of Quebec: A Comparison with Michigan and Pennsylvania (October 2014)
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- Public Views on a Carbon Tax Depend on the Proposed Use of Revenue (July 2014)
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- Public Opinion on Climate Change and Support for Various Policy Instruments in Canada and the US (June 2014)
- The Decline of Public Support for State Climate Change Policies: 2008-2013 (March 2014)
- The Chilling Effect of Winter 2013 on American Acceptance of Global Warming (June 2013)
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- NSEE Findings Report for Belief-Related Questions (March 2013)
- NSEE Public Opinion on Climate Policy Options (December 2012)

All NSEE reports are available online at: <http://closup.umich.edu/national-surveys-on-energy-and-environment/>



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