

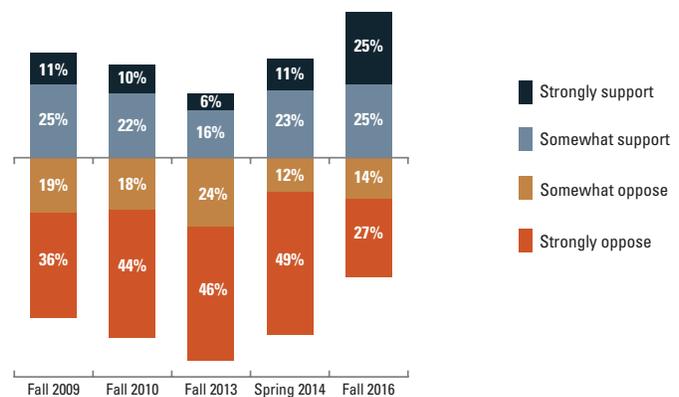
Moving the needle on American support for a carbon tax

a report from the National Surveys on Energy and Environment

Key findings from the latest round of the National Survey on Energy and Environment (NSEE) from the University of Michigan and Muhlenberg College suggest Americans are increasingly warming to the idea of a carbon tax, especially if they are told the tax revenues will be used in certain ways.

The results from the latest round of the NSEE, fielded in the weeks just prior to the November 2016 elections, show that support for carbon taxes appears to have increased significantly compared to earlier iterations of the survey. Respondents were asked four previous times over the last seven years whether they would support “a tax to reduce greenhouse gases by taxing fuels such as coal, oil, and natural gas.” On each of these earlier rounds, support never registered above 36%. In the Fall 2016 survey, however, half (50%) of Americans expressed support for a carbon tax, and strong support for the tax is more than twice as high as any previous round of the survey (see *Figure 1*). The survey indicated support for a carbon tax has substantially increased across the political spectrum from when the question was last asked in Spring 2014. Support this fall was 66% among Democrats (a 29 percentage point increase from Spring 2014), 30% among Republicans (a 15 percentage point increase), and 47% among Independents (a 9 percentage point increase).

Figure 1
American support for reducing greenhouse gas by taxing carbon-based fuels



Question text: “Next I would like to ask for your views on a number of ideas that have been proposed to reduce greenhouse gas emissions and stabilize the climate. 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?”

Note: Responses for “don’t know” not shown.

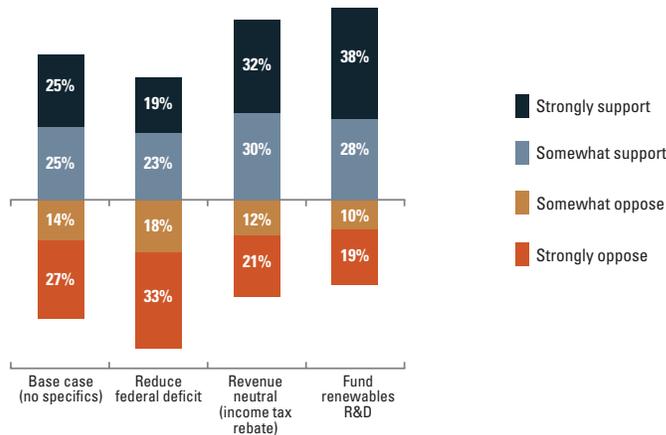
Authors

Daniel Puskin
 Professorial Lecturer
 Department of Public Administration and Policy
 School of Public Affairs
 American University
 puskin@american.edu

Sarah B. Mills
 Postdoctoral Fellow
 Center for Local State, and Urban Policy
 Gerald R. Ford School of Public Policy
 University of Michigan
 sbmills@umich.edu

Detailing how the funds are used, though, affects public support. Consistent with results from a use-of-revenue experiment in earlier survey waves,¹ if the tax revenue is designated for deficit reduction, overall support actually decreases from 50% to 42%. By contrast, two other variants of a carbon tax register over 60% support (see *Figure 2*). Assigning all raised revenues towards increased research and development (R&D) for renewable energy programs, for example, garnered 66% support on the survey. Similarly, a revenue-neutral carbon tax rebating any tax revenues back to the public in the form of an income tax rebate was supported by 62% of NSEE respondents, including 71% of Democrats, 44% of Republicans and 63% of Independents, numbers consistent with a recent study from Yale and George Mason universities which posed a similar question.²

Figure 2
American support for taxing carbon-based fuels, under alternate use of the revenue from the tax

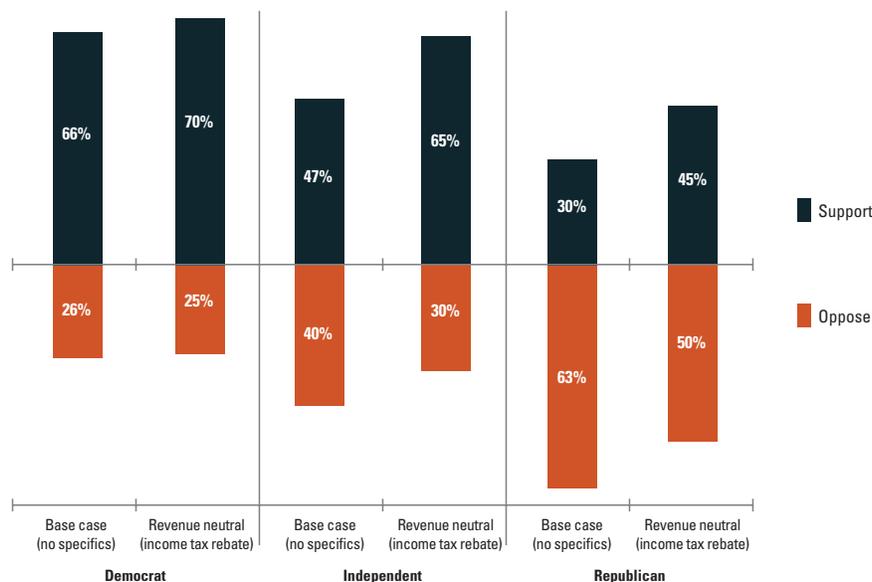


Question text for each of these options available at: <http://closup.umich.edu/national-surveys-on-energy-and-environment/nsee-data-tables/nsee-2016-fall/>
 Note: Responses for “don’t know” not shown.

There are compelling arguments to be made for and against both the energy R&D and revenue-neutral options. While the option to invest in renewables R&D registered even higher support than the revenue neutral option, its “tax and spend” nature could be seen as a non-starter for many Republicans. As other scholars have previously noted,³ recasting the carbon tax towards revenue neutrality provides some significant advantages for making the policy more palatable across the political spectrum. The precedent of analogous taxes being implemented elsewhere—in particular, the longevity of British Columbia’s 2008 revenue neutral carbon tax which is still in effect—adds further evidence of its feasibility.⁴ And within the first month of Donald Trump’s Presidency, eight high-profile Republican leaders made a pitch at the White House for a revenue-neutral carbon tax.⁵ Indeed, the NSEE finds that compared to the base case where the use of revenue is not specified, Republicans increased their share of support for the revenue neutral option by 15 percentage points (see *Figure 3*). Similarly, support among Democrats and Independents rose by 4 and 18 percentage points respectively for the revenue neutral option compared to the base case.



Figure 3
Support for a revenue neutral carbon tax compared to carbon tax with no revenue use details, by political party

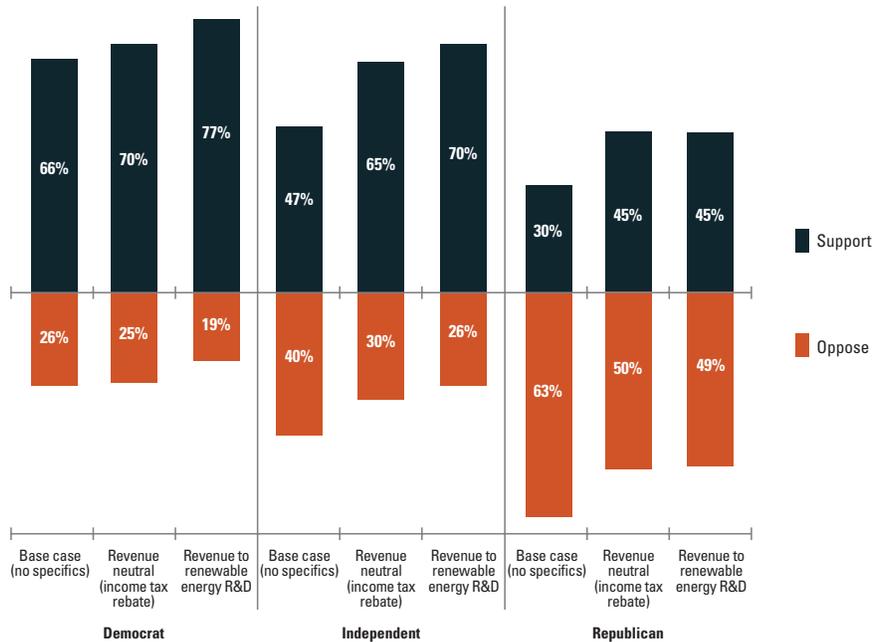


Question text for each of these options available at: <http://closup.umich.edu/national-surveys-on-energy-and-environment/nsee-data-tables/nsee-2016-fall/>
 Note: Responses for “don’t know” not shown. “Strongly support” and “Somewhat support” options are combined into support, as are “strongly oppose” and “somewhat oppose”

However, recent policy shifts in both the U.S. and Canada regarding carbon taxes, as well as findings from our survey, leads us to question whether the revenue neutral option is actually the most workable. This past November, Washington State resoundingly voted down a proposal that would have taxed carbon emissions in a revenue neutral fashion while redistributing funds; just 42 percent voted in favor of the ballot measure.⁶ Furthermore, when the Canadian province of Alberta introduced a carbon tax at the beginning of 2017, rather than emulating British Columbia’s revenue neutral option, it chose to reallocate some of its tax revenue towards government investments in renewable energy.⁷ In many ways, this design more closely resembles that of the Regional Greenhouse Gas Initiative, the cap-and-trade policy among nine Northeastern U.S. states that has proven to be the most durable of such policies adopted in North America, perhaps owing to its ability to appeal to a broad constituency by reinvesting revenues in climate-related projects.⁸

The results of the NSEE suggest that directing revenues back into clean energy may, indeed, be more broadly appealing than the revenue-neutral approach. Relative to the base case, Republican survey respondents had the same 15 percentage point boost in support for the R&D option as they did for the revenue neutral option, bringing support up to 45 percent (see *Figure 4*). Notably, though Democrats and independents were more supportive of a carbon tax that reinvested revenues in renewable energy R&D than one that was revenue-neutral, with support rising to 77% and 70%, respectively.

Figure 4
Comparison of public support for carbon tax based on stated revenue use, by political party



Question text for each of these options available at: <http://closup.umich.edu/national-surveys-on-energy-and-environment/nsee-data-tables/nsee-2016-fall/>
 Note: Responses for “don’t know” not shown. “Strongly support” and “Somewhat support” options are combined into support, as are “strongly oppose” and “somewhat oppose”



While a carbon tax with revenues designated to renewables R&D garners more support than a revenue-neutral option across a wide range of demographic groups, certain groups are particularly responsive to knowing the use of revenue.⁹ Respondents with household incomes below \$60,000 per year, for example, are much more likely to move from opposing to supporting a carbon tax when revenue use is specified compared to wealthier households. And perhaps even more surprisingly, respondents from these lower-income households, which may be the least able to afford a carbon tax, are more supportive of a carbon tax where revenues are directed to energy R&D than the revenue-neutral option which would provide them an income tax rebate (see *Table 1*). Similarly millennials (18-29 year olds) and non-college educated individuals are more likely to change their mind about a carbon tax when revenue use is specified than those over age 30 and those who have a college education. To a lesser extent, white respondents also appear to be more responsive to revenue use than non-whites (especially on the R&D question), while women and men have very similar support levels for both questions.

Table 1
Support for a carbon tax with revenues specified to renewable energy R&D compared to a revenue-neutral option and a carbon tax with no revenue use details, by demographic groups

	Subgrouping	Sample size (unweighted)	% Supporting Base Case (no specifics)	% Supporting Revenue Neutral option	% Supporting Revenues to Renewable Energy R&D	Net Difference R&D option vs. base case
Overall		940	50%	62%	66%	16
Annual Household Income	Less than \$60,000	399	50%	69%	73%	23
	\$60,000 and up	322	57%	62%	68%	11
Age	18-29	236	56%	78%	81%	25
	30 and over	700	48%	57%	61%	13
Education	No College Degree	579	46%	63%	66%	20
	College degree	354	56%	62%	68%	12
Race	White	562	46%	60%	65%	19
	Non-White	366	57%	66%	70%	13
Gender	Male	461	49%	61%	66%	16
	Female	479	51%	64%	67%	16

Note: Sample size within categories may not sum to the overall sample (n=940) because some respondents did not provide complete demographic details. Most notably, 219 respondents did not know or refused to provide their annual household income.

Conclusion

American receptivity for a carbon tax had hit a new high in Fall 2016, but support is largely contingent on the details of how revenue would be used. While a revenue-neutral option would appear to provide wider appeal across the political spectrum, the NSEE finds—as it did in 2014—that directing revenues to renewable energy R&D might actually enjoy wider appeal. Would a carbon tax have succeeded in Washington State if it were designed so that the revenues were funneled back into clean energy? It is impossible to know. Though in the coming years, as states once more become the key actors on U.S. climate policy, perhaps one or more statehouses will take up this question.

Methods

The Fall 2016 NSEE surveyed 940 adult (age 18 or older) residents of the United States between October 13 and November 6, 2016. Respondents were interviewed in English on both landlines (210) and cell phones (730) by the staff of the Muhlenberg College Institute of Public Opinion (MCIPO) in Allentown, Pennsylvania on the Institute's Computer Aided Telephone Interviewing (CATI) system. Both the landline and cell phone samples were provided by the Marketing Systems Group (MSG), Horsham, Pennsylvania. Both landline and cell phones were chosen randomly from sampling frames of United States landline and cell numbers provided by MSG.

With a randomly selected sample of 940 respondents the margin of error for the surveys is $\pm 3.2\%$ at a 95% level of confidence. Margins of error for questions with smaller sample sizes will be larger. In addition to sampling error, one should consider that question wording and other fielding issues can introduce error or bias into survey results. The sample data has been weighted by age, race, educational attainment, income and gender to reflect 2015 population parameters for these factors provided by the United States Census Bureau. The calculation of sampling error takes into account design effects due to the weighting identified above. In order to reach a representative sample of adult Americans both landlines and cell phones are called up to 10 times. The response rate for this survey as calculated using the American Association of Public Opinion Research (AAPOR) RR3 formula is 11%. Due to rounding, the totals provided in tables may not equal 100.

The instrument was designed by Christopher Borick of Muhlenberg College, Barry Rabe of the University of Michigan, Sarah Mills of the University of Michigan, and Erick Lachapelle of the University of Montreal. For more detailed information on the methods employed please contact the MCIPO at 484-664-3444 or email Dr. Borick at cborick@muhlenberg.edu.

Funding, 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 [frequency tables](#), [survey instruments](#), and [datasets](#).



Notes

1. Amdur, D., Rabe, B.G, Borick, C. (2014). *Public Views on a Carbon Tax Depend on the Proposed Use of Revenue*. [a report from the national Surveys on Energy and Environment]. Ann Arbor, MI: The Center for Local, State, and Urban Policy at the Gerald R. Ford School of Public Policy, University of Michigan. Retrieved from <http://closup.umich.edu/issues-in-energy-and-environmental-policy/13/public-views-on-a-carbon-tax-depend-on-the-proposed-use-of-revenue/>
2. Leiserowitz, A., Maibach, E., Roser, Renouf, C., Rosenthal, S., & Cutler, M. (2016). *Politics & Global Warming, November 2016*. Yale University and George Mason University. New Haven, CT: Yale Program on Climate Change Communication. Retrieved from <http://climatecommunication.yale.edu/wp-content/uploads/2016/12/Global-Warming-Policy-Politics-November-2016.pdf>
3. Marron, D.B, & Morris, A.C. (2016). *How to Use Carbon Tax Revenues*. Washington, DC: Tax Policy Center. Retrieved from <http://www.urban.org/sites/default/files/publication/78011/2000624-how-to-use-carbon-tax-revenues.pdf>; Shultz, G. P, & Becker, G.S. (2013, April 7). Why We Support a Revenue-Neutral Carbon Tax. *The Wall Street Journal*. Retrieved from <https://www.wsj.com/articles/SB10001424127887323611604578396401965799658>
4. Carl, J., & Fedor, D. (2012). *Revenue-Neutral Carbon Taxes in the Real World*. Stanford, CA: Hoover Institution, Stanford University. Retrieved from <http://www.hoover.org/sites/default/files/research/docs/117649691-revenue-neutral-carbon-taxes-in-the-real-world-insights-from-british-columbia-and-australia.pdf>
5. This group, which included James Baker, Henry Paulson, George Shultz, and Walmart’s Rob Walton, presented the proposal they call “The Conservative Case for Carbon Dividends.” The proposal calls for a \$40 per ton carbon tax that would escalate over time, but would be returned to Americans via a dividend amounting to \$2,000 per year for a typical family of four. The authors simultaneously push for a rollback of major EPA regulations such as carbon dioxide limits and an elimination of the Clean Power Plan. See the full plan at <https://www.clcouncil.org/wp-content/uploads/2017/02/TheConservativeCaseforCarbonDividends.pdf>.
6. Lavelle, M. (2016, November 9). Washington State Voters Reject Nation’s First Carbon Tax. *Inside Climate News*. Retrieved from <https://insideclimatenews.org/news/09112016/washington-state-carbon-tax-i-732-ballot-measure>
7. Tasker, J.P. (2016, October 3). “Here’s where the provinces stand on carbon prices.” CBC News. Retrieved from <http://www.cbc.ca/news/politics/provinces-with-carbon-pricing-1.3789174>; also, Hussey, I. (2016, November 24). *Ten things to know about carbon pricing in Alberta*. Edmonton, AB: Parkland Institute, University of Alberta. Retrieved from http://www.parklandinstitute.ca/ten_things_to_know_about_carbon_pricing_in_alberta
8. Rabe, B. G. (2016). The Durability of Carbon Cap-and-Trade Policy. *Governance*. 29(1): 103-119. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1111/gove.12151/full>
9. Among those respondents who indicated that they were opposed to a carbon tax with no details about revenue use, Democrats—at the individual level—were more likely to switch to supporting the carbon tax when they learned more details about revenue use than were Republicans; 47% of Democrats who opposed or were unsure how they felt about the “base case” option supported the R&D option, whereas only 23% of Republicans opposed to the base case switched from opposition to support. However, since many more Republicans were initially unsupportive of a carbon tax, including revenue use details swung more Republican respondents in aggregate than Democratic respondents.

Reports from Issues in Energy and Environmental Policy

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 on the Rise 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)

Neighbors Diverge: An Explanation for the Differences in Silica Sand Mining Activity in Wisconsin and Minnesota (May 2015)

Public Perceptions of Hydraulic Fracturing in Three Marcellus Shale States (May 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)

Opportunity, Risk, and Public Acceptability: The Question of Shale Gas Exploitation in Quebec (October 2014)

Shale Governance in the European Union: Principles and Practice (October 2014)

Public Perceptions of Shale Gas Extraction and Hydraulic Fracturing in New York and Pennsylvania (September 2014)

Public Views on a Carbon Tax Depend on the Proposed Use of Revenue (July 2014)

American Acceptance of Global Warming Retreats in Wake of Winter 2014 (June 2014)

Public opinion on climate change and support for various policy instruments in Canada and the US:
Findings from a comparative 2013 poll (June 2014)

Environmental Policy in the Great Lakes Region: Current Issues and Public Opinion (April 2014)

Shale Gas and Hydraulic Fracturing in the Great Lakes Region: Current Issues and Public Opinion (April 2014)

Wind Energy Development in the Great Lakes Region: Current Issues and Public Opinion (April 2014)

The Decline of Public Support for State Climate Change Policies: 2008-2013 (March 2014)

Using Information Disclosure to Achieve Policy Goals: How Experience with the Toxics Release Inventory Can Inform Action on Natural Gas Fracturing (March 2014)

State of the Debate: Natural Gas Fracking in New York's Marcellus Shale (January 2014)

The Chilling Effect of Winter 2013 on American Acceptance of Global Warming (June 2013)

Public Opinion on Fracking: Perspectives from Michigan and Pennsylvania (May 2013)

NSEE Findings Report for Belief-Related Questions (March 2013)

NSEE Public Opinion on Climate Policy Options (December 2012)

All IEEP reports are available online at: <http://closup.umich.edu/ieep.php>



University of Michigan

Center for Local, State, and Urban Policy

Gerald R. Ford School of Public Policy

Joan and Sanford Weill Hall

735 S. State Street, Suite 5310

Ann Arbor, MI 48109-3091

The **Center for Local, State, and Urban Policy (CLOSUP)**, housed at the University of Michigan's Gerald R. Ford School of Public Policy, conducts and supports applied policy research designed to inform state, local, and urban policy issues. Through integrated research, teaching, and outreach involving academic researchers, students, policymakers and practitioners, CLOSUP seeks to foster understanding of today's state and local policy problems, and to find effective solutions to those problems.

web: www.closup.umich.edu

email: closup@umich.edu

twitter: @closup

phone: 734-647-4091



Regents of the University of Michigan

Michael J. Behm

Grand Blanc

Mark J. Bernstein

Ann Arbor

Laurence B. Deitch

Bloomfield Hills

Shauna Ryder Diggs

Grosse Pointe

Denise Illitch

Bingham Farms

Andrea Fischer Newman

Ann Arbor

Andrew C. Richner

Grosse Pointe Park

Katherine E. White

Ann Arbor

Mark S. Schlissel

(ex officio)