Technical Report:

Climate Insights 2020 | Policies and Politics

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This technical report accompanies the policies and politics installment of the Climate Insights 2020 report. Climate Insights is a survey project by researchers at Stanford University, Resources for the Future (RFF), and ReconMR examining American public opinion on issues related to climate change. Since 1997, Stanford University Professor Jon Krosnick has explored American public opinion on these issues through a series of rigorous national surveys of random samples of American adults, often in collaboration with RFF. For the 2020 iteration of the Climate Insights survey, 999 American adults were interviewed during the 80-day period from May 28, 2020 to August 16, 2020.

This series is accompanied by an interactive data tool, which can be used to view specific data from the survey. Please visit www.rff.org/climateinsights or https://climatepublicopinion.stanford.edu/ for more information and to access the data tool, report series, blog posts, and more.

Predictors of Support for Policies to Reduce Greenhouse Gas Emissions:

Symbolic vs. Pocketbook Motivations

Perceptions that unchecked global warming will benefit or hurt future generations caused increased support for emissions reduction policies (b = .054, p < .01; row 1 column 1 in Table 1). But perceptions that unchecked global warming will benefit or harm the respondent had no impact on policy support (b = .007, n.s.; row 2 column 2 in Table 1).

Also as expected, perceptions that efforts to reduce emissions will benefit or hurt the national economy and will benefit or hurt the respondent's state's economy both increased policy support (b = .070, p < .05, and b = .134, p < .001, respectively; rows 3-4 column 1 in Table 1). But surprisingly, perceptions that emissions reduction efforts will help or hurt the respondent personally also influenced policy support (b = .142, p < .01; row 5 column 1 in Table 1).

Thus, it appears that public support for emissions reduction policies was driven importantly by perceived benefits and hurt to collectives and was also influenced by perceptions of benefits and hurt to the respondent.

Dismantling Mitigation Policies Put in Place by President Obama:

Exploring the Impact of Elite Cues

Built into the questionnaire was an experiment in which other respondents were randomly assigned to one of three different versions of the questions. One version told respondents about the policy and that President Obama had spearheaded its passage. A second version told respondents about the policy and that President Trump had reversed the policy. And the final version told respondents about the policy, that President Obama had spearheaded its passage, and that President Trump had reversed it.

We estimated the parameters of ordinary least squares regressions predicting the number of the four policies that each respondent favored, using variables to represent whether the respondent was told President Obama favored the policies, whether the respondent was told that President Trump reversed the policy, liberal/conservative ideology, and demographics.

Among Democrats, mentioning President Obama's support of the policies did not increase policy support (b = .030, n.s.; row 1 column 1 in Table 2). And among Republicans, mentioning President Trump's opposition to the policies did not increase support for them (b = -.048, n.s; row 2 column 2 in Table 2). The only support for the notion that cues would be consequential appeared among Republicans: mentioning that President Obama had spearheaded the policies reduced the proportion of policies supported by Republicans by 15 percentage points (b = -.145, p<.01; row 1 column 2 in Table 2). Among Independents, neither mentioning President Obama's support nor mentioning President Trump's opposition to the policies altered support for them (b=-.030, n.s.; b=.008, n.s.; rows 1-2 column 3 in Table 2) But in general, it

appears that public support for these policies was not increased or decreased by endorsement of a policy by a politician from the respondent's party.

Table 1. Unstandardized OLS regression coefficients predicting support for emission reduction policies

Predictor	Emission Reduction Policy Support Index
Unchecked global warming will (harm – help) future generations	0.054**
	(0.017)
Unchecked global warming will (harm – help) the respondent	0.007
	(0.017)
National economic impact	0.070*
	(0.036)
Statewide economic impact	0.134***
	(0.036)
Personal economic impact	0.142**
	(0.045)
Democrat	0.049**
	(0.017)
Republican	-0.037+
	(0.021)
Liberal	0.032+
	(0.018)
Conservative	-0.078***
	(0.020)
Male	0.004
	(0.014)
Hispanic	0.035
	(0.023)
Black	-0.072**
	(0.025)
Other race(s)	-0.027
	(0.022)
Age 25 to 34	-0.041
	(0.032)
Age 35 to 44	-0.021
	(0.029)
Age 45 to 54	-0.034
	(0.028)
Age 55 to 64	-0.067*
	(0.027)
Age 65 or older	-0.099***
	(0.027)
High school graduate	0.012
	(0.034)
Some college	0.006
	(0.035)

College graduate	0.027
	(0.036)
Post college	0.042
	(0.037)
Income $20K-$34,999	0.021
	(0.028)
Income $35K-$49,999	0.057+
	(0.032)
Income $50K-$74,999	0.001
	(0.032)
Income $75K-$99,999	0.049
	(0.031)
Income $100K+	0.021
	(0.029)
Married	0.013
	(0.016)
Income $20K-$34,999	0.027
	(0.021)
Income $35K-$49,999	0.010
	(0.021)
Income $50K-$74,999	0.003
	(0.017)
Constant	0.438***
	(0.050)
R^2	0.434
N	999

Notes. Cell entries are unstandardized OLS regression coefficients (standard errors in parentheses) predicting the policy support index, adjusted for sampling weights. Omitted categories for dummy variables are: moderate, independent, White, age 18-24, less than high school graduate, income less than $20K, and South.

*** $p<.001$ ** $p<.01$ * $p<.05$ + $p<.10$

Table 2. Unstandardized OLS regression coefficients predicting climate policy support index by elite cues

Predictor	Among Democrats (1)	Among Republicans (2)	Among Independents (3)
President Obama mentioned	0.030	-0.145**	-0.030
	(0.019)	(0.045)	(0.035)
President Trump mentioned	-0.002	-0.048	0.008
	(0.019)	(0.048)	(0.032)
Liberal	0.039+	0.000	0.185***
	(0.021)	(0.119)	(0.035)
Conservative	-0.022	-0.214***	-0.231***
	(0.047)	(0.048)	(0.042)
Male	0.005	-0.001	0.134***
	(0.018)	(0.046)	(0.033)
Hispanic	0.047+	0.086	-0.006
	(0.025)	(0.081)	(0.051)
Black	0.001	0.631***	0.106*
	(0.025)	(0.114)	(0.048)
Other race(s)	-0.042	-0.031	0.050
	(0.030)	(0.088)	(0.048)
Age 25 to 34	0.044	-0.208+	-0.006
	(0.033)	(0.113)	(0.068)
Age 35 to 44	0.013	-0.149	-0.001
	(0.036)	(0.107)	(0.061)
Age 45 to 54	-0.038	-0.107	-0.036
	(0.040)	(0.110)	(0.064)
Age 55 to 64	0.006	-0.160	-0.087
	(0.035)	(0.108)	(0.063)
Age 65 or older	-0.005	-0.140	-0.085
	(0.041)	(0.101)	(0.062)
High school graduate	-0.002	0.047	0.017
	(0.057)	(0.104)	(0.074)
Some college	0.008	0.015	-0.030
	(0.055)	(0.106)	(0.069)
College graduate	0.045	-0.023	0.031
	(0.053)	(0.111)	(0.070)
Post college	0.022	-0.188+	0.031
	(0.059)	(0.111)	(0.074)
Income $20K-$34,999	0.074	-0.022	0.025
	(0.045)	(0.110)	(0.072)
Income $35K-$49,999	0.068	-0.052	-0.044
	(0.047)	(0.137)	(0.065)
Income $50K-$74,999	0.074	-0.107	-0.078

Predictor	Among Democrats (1)	Among Republicans (2)	Among Independents (3)
	(0.047)	(0.118)	(0.070)
Income $75K-$99,999	0.107*	-0.049	0.063
	(0.049)	(0.117)	(0.065)
Income $100K+	0.086+	-0.144	-0.042
	(0.051)	(0.117)	(0.065)
Married	-0.009	0.128*	-0.100**
	(0.024)	(0.051)	(0.035)
Northeast	0.017	0.134*	0.032
	(0.025)	(0.067)	(0.050)
Midwest	0.003	0.039	0.021
	(0.029)	(0.053)	(0.044)
West	-0.002	0.122*	0.019
	(0.026)	(0.060)	(0.044)
Constant	0.779***	0.747***	0.733***
	(0.069)	(0.157)	(0.087)
R^2	0.113	0.248	0. 287
N	489	354	658

Notes. Cell entries are coefficients (standard errors in parentheses) of OLS regressions with policy support index as the dependent variable, adjusted for sampling weights. Omitted categories for dummy variables are: moderate, independent, White, age 18-24, less than high school graduate, income less than $20K, and South. Each column is a separate regression.

*** $p<.001$ ** $p<.01$ * $p<.05$ + $p<.10$

Appendix A. Sample and Survey Methodology

We explored these issues using data from the 2020 National Survey of Public Opinion on Global Warming conducted by Stanford University, Resources for the Future, and ReconMR. It involved Random Digit Dial telephone interviews with a representative sample of 999 adults living in the United States. 310 respondents were interviewed on a landline telephone, and 689 were interviewed on a cell phone by human interviewers. Interviewing was conducted from May 28 to August 16, 2020, in English. AAPOR's Response Rate 3 was 18% for the landline frame, 6% for the cell phone frame, and 10% for the whole study sample.

Sample Design

Phone numbers used for this study were randomly generated from landline and cell phone sampling frames, with an overlapping frame design. The RDD landline sample was generated through Dynata. The Dynata RDD procedure produces an Equal Probability Selection Method (EPSEM) sample of randomly drawn telephone numbers from all working banks with one or more assigned numbers. The sample was generated shortly before the beginning of data collection to provide the most up-to-date sample possible, maximizing the number of valid telephone extensions. An additional sample was generated during the fielding period to ensure appropriate representation between census regions. The initial landline sample went through Dynata's disconnect screening process. The unlisted phone numbers are sent a 'pulse' to determine switch status. If the switch is not active, the number is flagged disconnected. If the switch is active, the system uses post-call analysis to determine if the number is disconnected (SIT, fax, fast busy, etc.) or working (no answer, live answer, answering machine).
The RDD Cell Phone sample was generated by Dynata. Dynata starts with the most recent monthly Telcordia TPM (Terminating Point Master) Data file. This is Telcordia's master file of NPA-NXX and Block-ID records for the North American Number Plan. It contains at least one record per NPA-NXX. For prefixes (NPA-NXXs) where 1000-block number pooling is in effect, this file also provides information for individual 1000-blocks. This allows users to identify those 1000-blocks that have either not been assigned for service or that have been allocated to different service providers. "Mixed" or "shared" 100-blocks (NXXTYPES 50, 54, 66) are then compared to Dynata's list---assisted RDD database. 100-blocks with no listed numbers are retained in the wireless frame, and 100-blocks containing listed numbers on the RDD frame are removed. The result is a frame of 100-blocks that is mutually exclusive of Dynata's list-assisted RDD frame while allowing coverage in prefixes and 1000-blocks that potentially provide both landline and wireless service.

Field Procedures

Because of the onset of the global Covid-19 Pandemic and in order to provide a safe environment for the employees to work, ReconMR shut down on-site operations in March 2020, and turned it into a virtualized call center environment. As such, the survey was conducted by interviewers working from home. Measures were taken to ensure data security and the continued adherence to data quality and data collection standards for ReconMR's work from home solution. Interviewers were set up to connect to ReconMR's data center via a secure, private VPN tunnel. This solution employs end-to-end encryption as well as multi-factor authentication.

In addition, all servers remained behind a secure firewall, and all calls were initiated from on-premises devices. ReconMR work-from-home solution allowed for all agents to continue to be live-monitored for quality assurance via our Voxco audio and video monitoring systems. Interviews were conducted using computer-assisted telephone interviewing (CATI) software. Interviewer training was conducted prior to the study pilot. CATI interviewers received an annotated questionnaire and project materials that explained the history, background, and goals of the study. The background and overview training of the study's various components was followed by a detailed CATI program training. Experienced project team supervisors and trainers spent time reviewing both questionnaires one question at a time with each interviewer. The goal was to fully explain the proper delivery of each question and the reasoning and intent behind all the sections and response options in each questionnaire. Interviewers spent a great deal of time practicing with the CATI program and conducting mock interviews with each other and the data collection supervisors. Interviewers were carefully trained to ask for the youngest male or the youngest female currently at home when calling a landline. Interviewers were also trained to explain the purpose of the study, how to gain respondent cooperation by explaining the inherent benefits of the research, how the project will benefit the public good, and how to answer respondent's questions, as well as how to record respondents' answers accurately.

In order to maximize survey participation, the following procedures were enacted during the field period:

- Up to 5 follow-up attempts were made to contact non-responsive numbers (e.g., no answer, busy, answering machine). Exception was made to records flagged as belonging to census groups greater than 50% Hispanic. These cases received up to 7 follow-up attempts to non-responsive numbers.
- Non-responsive numbers were contacted multiple times, varying the times of day and the days of the week that call-backs were placed.
- Interviewers stressed that the study was done for research purposes and that responses were strictly confidential and, when asked, they stated as accurately as possible the expected length of the interview. In addition, interviewers were provided with responses to possible respondent concerns raised during interviews, in order to minimize break offs.
- Respondents were offered the option of scheduling a call-back at their convenience.
- Households, where the initial call resulted in respondents hanging up the phone or breaking off during the interview, were called back after a 28-hour delay in an attempt to convert into a completed interview. Interviewers received special instructions on how to handle these calls.
- Respondents reached by cell phone were offered $10 if they requested compensation for their time. No such cell phone complaints were made during fielding of either study.

Quality/Data Verification

Project supervisors validated 10% of each interviewer's completed surveys by calling back the respondent and verifying specific responses. Additionally, supervisors continually monitored live calls through ReconMR's call monitoring system in order to ensure proper interviewing procedures were maintained.

Appendix B. Measures

Greenhouse Gas Emissions Reduction Policies

[2015-2020] For each of the following, please tell me whether you favor or oppose it as a way for the federal government to try to reduce future global warming. Each of these changes would increase the amount of money that you pay for things you buy.

[2012] For each of the following, please tell me whether you favor or oppose it as a way for the federal government to try to reduce future global warming. [ONLY ASKED IN ONE HALF SAMPLE: Each of these changes would increase the amount of money that you pay for things you buy.]

[2006-2011]. For each of the following, please tell me whether you favor or oppose it as a way for the federal government [HALF SAMPLE, doing it/HALF SAMPLE, to try to reduce future global warming].

   a.   Increasing taxes on electricity so people use less of it?
   b.   Increasing taxes on gasoline so people either drive less, or buy cars that use less gas?
   c.   Giving companies tax breaks to build nuclear power plants?
   d.   Giving companies tax breaks to produce more electricity from water, wind, and solar power?
   e.   Giving tax breaks to companies that burn coal to make electricity if they use new methods to reduce the air pollution being released from their smokestacks?

Cap [2015-2020] For the next items, please tell me for each one whether it's something the government should require by law to try to reduce future global warming, should encourage with tax breaks but not require, or stay out of entirely. Each of these changes [would/could] increase the amount of money that you pay for things you buy.
   …First…Next…

[2013-2014] Q36. For the next items, please tell me for each one whether it's something the government should require by law to try to reduce future global warming, should encourage with tax breaks but not require, or stay out of entirely. [Each of these changes would increase the amount of money that you pay for things you buy.] …First…Next…

[2012] For the next items, please tell me for each one whether it's something the government should require by law, encourage with tax breaks but not require, or stay out of entirely. [IF SUBSAMPLE2: Each of these changes would increase the amount of money that you pay for things you buy.]

[2006-2011]. For the next items, please tell me for each one whether it's something the government should require by law, encourage with tax breaks but not require, or stay out of entirely.
   a.   Building cars that use less gasoline?
   c.   Building air conditioners, refrigerators, and other appliances that use less electricity?
   d.   Building new homes and offices that use less energy for heating and cooling?
   e.   Lowering the amount of greenhouse gases that power plants are allowed to release into the air?

[2020] Q92a. [1] [2] When companies burn oil, coal, and natural gas, they put greenhouse gases into the air. The federal government can charge these companies a tax for every ton of greenhouse gases they put out. This will cause the companies to put out less greenhouse gases. The companies may pass along this cost to the public, by charging higher prices for some of the things people buy. Do you think the government should or should not charge companies this tax?

Q92b/c/d. When companies burn oil, coal, and natural gas, they put greenhouse gases into the air. The federal government can charge these companies a tax for every ton of greenhouse gases they put out. This will cause the companies to put out less greenhouse gases. The companies may pass along this cost to the public, by charging higher prices for some of the things people buy. The government will give the money from the companies back to all American adults and children, divided equally. If each person would get [$800/$600/$200) on average next year, and the amount would get bigger each year after that, do you think the government should or should not charge companies this tax?

[2013, 2015, 2020]. Q38B. There's a proposed system called "cap and trade." The government would <u>sell</u> permits to companies limiting the amount of greenhouse gases they can put out. Companies that do not use all their permits could sell them to other companies. Companies that need more permits can buy them, or these companies can pay money to reduce the amount of greenhouse gases that other people or organizations put out. Economists say that this system is likely to cause companies to figure out the cheapest way to reduce greenhouse gas emissions. The money the government makes from selling the permits would be returned to all Americans equally by reducing the amount of income taxes they pay. Would you favor or oppose this cap and trade system?

Unintended Economic Side-Effects of Greenhouse Gas Reduction Policies

[2009, June 2010, 2013--2020] Q36B. Do you think that the United States doing things to reduce global warming in the future would hurt the U.S. economy, would help the economy, or would have no effect on the U.S. economy?

[2009, June 2010, 2013-2020] Q36B1. Do you think that the United States doing things to reduce global warming in the future would help the U.S. economy, would hurt the economy, or would have no effect on the U.S. economy?

[2020] Q36Bx. Would it [help/hurt] a lot or a little?

[Nov-2010] Q36B. Do you think that the United States doing things to reduce global warming in the future would hurt the U.S. economy, would help the economy, or would have no effect on the U.S. economy?

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[1] Respondents were randomly assigned to be asked each of these four versions of the questions.

[2] Q92a-Q92d in 2020 were also asked in a separate national telephone survey, referred to as survey 2, with the same methodology and same time period of fielding. See the Appendix for details of the methodology of survey 2. When combining these four questions, the distribution of the responses did not differ between the 2020 survey and survey 2, data from both surveys are presented here.

Q36B1. Do you think that the United States doing things to reduce global warming in the future would help the U.S. economy, would hurt the economy, or would have no effect on the U.S. economy?

Q36B2. Do you believe that new environmental and energy laws designed to reduce global warming will … [Definitely hurt the economy, Probably hurt the economy, Have no effect either way on the economy, Probably help the economy, or Definitely help the economy]?

Q36B3. Do you believe that new environmental and energy laws designed to reduce global warming will … [Definitely help the economy, Probably help the economy, Have no effect either way on the economy, Probably hurt the economy, or Definitely hurt the economy]?

[June-2010, Nov-2010, 2020] Q36C. Do you think that the United States doing things to reduce global warming in the future would cause there to be more jobs around the country, would cause there to be fewer jobs, or would not affect the number of jobs for people around the country?

[June-2010, Nov-2010, 2020] Q36C1. Do you think that the United States doing things to reduce global warming in the future would cause there to be fewer jobs around the country, would cause there to be more jobs, or would not affect the number of jobs for people around the country?

[2020] Q36Cx. Would it be a lot [more/fewer] or a little [more/fewer]?

[2009] Q36C. Do you think that the United States doing things to reduce global warming in the future would cause there to be more jobs for people around the country, would cause there to be fewer jobs, or wouldn't affect the number of jobs for people around the country?

[2010, 2020] Q36D. Do you think that the United States doing things to reduce global warming in the future would hurt the economy in the State where you live, would help the economy in the State where you live, or would have no effect on the economy in the State where you live?

[2010, 2020] Q361D1. Do you think that the United States doing things to reduce global warming in the future would help the economy in the State where you live, would hurt the economy in the State where you live, or would have no effect on the economy in the State where you live?

[2020] Q36Dx. Would it [help/hurt] a lot or a little?

[2010, 2020] Q36E. Do you think that the United States doing things to reduce global warming in the future would cause there to be more jobs for people in the State where you live, would cause there to be fewer jobs in the State where you live, or wouldn't affect the number of jobs for people in the State where you live?

[2010, 2020] Q36E. Do you think that the United States doing things to reduce global warming in the future would cause there to be fewer jobs for people in the State where you live, would cause there to be more jobs in the State where you live, or wouldn't affect the

number of jobs for people in the State where you live?
[2020] Q36Ex. Would it be a lot [more/fewer] or a little [more/fewer]?

[2020] Q36F. Do you think that the United States doing things to reduce global warming in the future would cause you to have more money, would cause you to have less money, or would not affect the amount of money you have?
Q36F1. Do you think that the United States doing things to reduce global warming in the future would cause you to have more money, would cause you to have less money, or would not affect the amount of money you have?
Q36Fx. Would it be a lot [more/less] or a little [more/fewer]?

[2020] Q36G. Do you think that the United States doing things to reduce global warming in the future would make it (more) likely that you have a good-paying job, would make it (less) likely that you have a good-paying job, or would not affect whether you have a good-paying job?
Q36G1. Do you think that the United States doing things to reduce global warming in the future would make it (more) likely that you have a good-paying job, would make it (less) likely that you have a good-paying job, or would not affect whether you have a good-paying job?
Q36Fx. Would it be a lot [more/less] likely or a little [more/fewer] likely?

Voting in the 2020 Election

Q69. Next, I will read you a statement that could be made by someone who wants to be a United States Senator. Here is the statement:

"I believe that global warming has been happening for the past 100 years, mainly because we have been burning fossil fuels and putting out greenhouse gasses. Now is the time for us to be using new forms of energy that are made in America and will be renewable forever. We can manufacture better cars that use less gasoline and build better appliances that use less electricity. We need to transform the outdated ways of generating energy into new ones that create jobs and entire industries, and stop the damage we've been doing to the environment."

If a candidate says this, would this make you more likely to vote for this candidate, less likely to vote for this candidate, or would it not affect how likely you would be to vote for this candidate?

Q70. Next, I will read you a statement that could be made by someone who wants to be a United States Senator. Here is the statement:

"The science on global warming is a hoax and is an attempt to perpetrate a fraud on the American people. I don't buy into the whole man-caused global warming mantra. We must spend no effort to deal with something that is not a problem at all. We should not invest in windmills and solar panels as alternative energy sources. Instead, we should continue to focus on our traditional sources of energy: coal, oil, and natural gas. We should expand energy production in our country, including continuing to mine our coal and doing more drilling for oil here at home."

If a candidate says this, would this make you more likely to vote for this candidate, less likely to vote for this candidate, or would it not affect how likely you would be to vote for this candidate?

Appendix C. Predictors of Support for Policies to Reduce Greenhouse Gas Emissions:

Symbolic vs. Pocketbook Motivations

Measures

Policy support index. The primary dependent variable was an index of support for emission reduction policies. A respondent's score on the index was computed by averaging answers to the following policies coded as follows and therefore ranged from 0 (meaning the least support) to 1 (meaning the most support).

Support for nine specific ameliorative policies. Respondents read an introduction to a set of five policy questions: "For each of the following, please tell me whether you favor or oppose it as a way for the federal government to try to reduce future global warming. Each of these changes would increase the amount of money that you pay for things you buy." Respondents then were asked: "Do you favor or oppose the federal government [increasing taxes on electricity, so people use less of it? / increasing taxes on gasoline so people either drive less, or buy cars that use less gas? / giving companies tax breaks to build nuclear power plant? / giving companies tax breaks to produce more electricity from water, wind, and solar power? / giving tax breaks to companies that burn coal to make electricity if they use new methods to put the air pollution they generate into underground storage areas instead of letting that air pollution go up the smokestacks at their factories?]" For each of these five policy questions, a dichotomous variable was constructed and set to 1 for respondents who answered "favor" and 0 for those who answered "oppose" or did not answer.

Respondents read the following introduction to a second set of four policy questions: "For the next items, please indicate for each one whether it's something the government should require by law to try to reduce future global warming, should encourage with tax breaks but not require, or stay out of entirely. Each of these changes would increase the amount of money that you pay for things you buy." Respondents were then asked: "What about [building cars that use less gasoline? / building air conditioners, refrigerators, and other appliances that use less electricity? / building new homes and offices that use less energy for heating and cooling? / lowering the amount of greenhouse gases that power plants are allowed to release into the air?" For each of these four policy questions, a dichotomous variable was constructed and set to 1 for respondents who answered "the government should require by law" or "the government should encourage with tax breaks but not require" and 0 for those who answered "the government should stay out entirely" or did not answer.

Support a cap and trade program. Respondents were asked: "There's a proposed system called "cap and trade." The government would sell permits to companies limiting the amount of greenhouse gases they can put out. Companies that do not use all their permits could sell them to other companies. Companies that need more permits can buy them, or these companies can pay money to reduce the amount of greenhouse gases that other people or organizations put out. Economists say that this system is likely to cause companies to figure out the cheapest way to reduce greenhouse gas emissions. The money the government makes from selling the permits would be returned to all Americans equally by reducing the amount of income taxes they pay.

Would you favor or oppose this cap and trade system?" A dichotomous variable was constructed and set to 1 for respondents who answered, "favor" and 0 for those who answered "oppose" or did not answer.

Support a carbon tax policy. Respondents were asked: "When companies burn oil, coal, and natural gas, they put greenhouse gases into the air. The federal government can charge these companies a tax for every ton of greenhouse gases they put out. This will cause the companies to put out less greenhouse gases. The companies may pass along this cost to the public, by charging higher prices for some of the things people buy. [RANDOMLY ASSIGN TO THREE-QUARTERS OF RESPONDENTS: The government will give the money from the companies back to all American adults and children, divided equally. If each person would get (RANDOMLY ASSIGN: $800/$600/$200) on average next year, and the amount would get bigger each year after that], do you think the government should or should not charge companies this tax?" A dichotomous variable was constructed and set to 1 for respondents who answered, "should" and 0 for those who answered "should not" or did not answer.

Sociotropic vs. self-interest considerations. To explore the impact of pocketbook considerations vs. sociotropic considerations, we assessed respondents' beliefs about how much global warming will hurt or help them personally and will hurt or help future generations. We assessed the degree to which these perceptions influenced policy support.

A variable, *unchecked global warming will (harm – help) future generations*, which is a sociotropic consideration, was constructed by the difference between the following two measures:

"[Assuming it's happening] If nothing is done to reduce global warming in the future, how much do you think it will hurt future generations—a great deal, a lot, a moderate amount, a little, or not at all?" Coding: 1 = a great deal, .75 = a lot, .5 = a moderate amount, .25 = a little, 0 = not at all; 0 = do not know or refusal to answer.

"[Assuming it's happening] If nothing is done to reduce global warming in the future, how much do you think it will help future generations—a great deal, a lot, a moderate amount, a little, or not at all?" Coding: 1 = a great deal, .75 = a lot, .5 = a moderate amount, .25 = a little, 0 = not at all; 0 = do not know or refusal to answer.

A variable, *unchecked global warming will (harm – help) the respondent*, which is a self-interest consideration, was constructed by the difference between the following two measures:

"[Assuming it's happening] If nothing is done to reduce global warming in the future, how much do you think it will hurt you personally—a great deal, a lot, a moderate amount, a little, or not at all?" Coding: 1 = a great deal, .75 = a lot, .5 = a moderate amount, .25 = a little, 0 = not at all; 0 = do not know or refusal to answer.

"[Assuming it's happening] If nothing is done to reduce global warming in the future, how much do you think it will help you personally —a great deal, a lot, a moderate amount, a little, or not at all?" Coding: 1 = a great deal, .75 = a lot, .5 = a moderate

amount, .25 = a little, 0 = not at all; 0 = do not know or refusal to answer.

Unintended economic side-effects of greenhouse gas reduction policies. To explore the impact of unintended economic side-effects of these policies on the support for them, the explanatory variables were national economic impact index, statewide economic impact index, and personal economic impact index. These indices were computed by averaging answers to two questions on the economy and jobs for the nation, two questions on the economy and jobs for the state, and two questions on the personal finance and job prospect for one's own self), respectively, which were coded as follows.

National economic impact index was computed by averaging answers to the following two questions coded as follows and therefore ranged from 0 (meaning the least beneficial) to 1 (meaning the most beneficial).

Respondents were asked: "Do you think that the United States doing things to reduce global warming in the future would [help/hurt] the U.S. economy, would [hurt/help] the economy, or would have no effect on the U.S. economy? IF HELP/HURT: Would it [help/hurt] a lot or a little?" A continuous variable was constructed as follows: 1 = help a lot, .75 = help a little, .5 = no effect or did not answer, .25 = hurt a little, 0 = hurt a lot.

Respondents were also asked: "Do you think that the United States doing things to reduce global warming in the future would cause there to be [more/fewer] jobs around the country, would cause there to be [fewer/more] jobs, or would not affect the number of jobs for people around the country? IF MORE/FEWER: Would it a lot [more/fewer] or a little [more/fewer]?" A continuous variable was constructed as follows: 1 = a lot more, .75 = a little more, .5 = would not affect or did not answer, .25 = a little fewer, 0 = a lot fewer.

A dichotomous variable, *national economic impact (missing),* was set to 1 for respondents who did not answer either or both questions and 0 for respondents who answered both questions.

Statewide economic impact index was computed by averaging answers to the following two questions coded as follows and therefore ranged from 0 (meaning the least beneficial) to 1 (meaning the most beneficial).

Respondents were asked: "Do you think that the United States doing things to reduce global warming in the future would [help/hurt] the economy in the state where you live, would [hurt/help] the economy in the state where you live, or would have no effect on the economy in the state where you live? IF HELP/HURT: Would it [help/hurt] a lot or a little?" A continuous variable was constructed as follows: 1 = help a lot, .75 = help a little, .5 = no effect or did not answer, .25 = hurt a little, 0 = hurt a lot.

Respondents were also asked: "Do you think that the United States doing things to reduce global warming in the future would cause there to be [more/fewer] jobs for people in the state where you live, would cause there to be [fewer/more] jobs in the state where you live, or would not affect the number of jobs for people in the state where you live? IF MORE/FEWER: Would

it a lot [more/fewer] or a little [more/fewer]?" A continuous variable was constructed as follows: 1 = a lot more, .75 = a little more, .5 = would not affect or did not answer, .25 = a little fewer, 0 = a lot fewer.

A dichotomous variable, *statewide economic impact (missing),* was set to 1 for respondents who did not answer either or both questions and 0 for respondents who answered both questions.

Personal economic impact index was computed by averaging answers to the following two questions coded as follows and therefore ranged from 0 (meaning the least beneficial) to 1 (meaning the most beneficial).

Respondents were asked: "Do you think that the United States doing things to reduce global warming in the future would cause you to have (more) money, would cause you to have (less) money, or would not affect the amount of money you have? IF MORE/LESS: Would it a lot [more/less] or a little [more/less]?" A continuous variable was constructed as follows: 1 = a lot more, .75 = a little more, .5 = would not affect or did not answer, .25 = a little less, 0 = a lot less.

Respondents were also asked: "Do you think that the United States doing things to reduce global warming in the future would make it [more/less] likely that you have a good-paying job, would make it [less/more] likely that you have a good-paying job, or would not affect whether you have a good-paying job? IF MORE/LESS: Would it a lot [more/less] likely or a little [more/less] likely?" A continuous variable was constructed as follows: 1 = a lot more likely, .75 = a little more likely, .5 = would not affect or did not answer, .25 = a little less likely, 0 = a lot less likely.

A dichotomous variable, *personal economic impact (missing),* was set to 1 for respondents who did not answer either or both questions and 0 for respondents who answered both questions.

Political party identification and liberal/conservative ideology. Respondents were asked: "Generally speaking, do you usually think of yourself as [a Democrat, a Republican/ a Republican, a Democrat], an Independent, or what?" A dichotomous variable, *Democrat*, was constructed and set to 1 for people who answered "Democrat" and 0 otherwise. A dichotomous variable, *Republican*, was constructed and set to 1 for people who answered "Republican" and 0 otherwise. Respondents were asked: "Generally speaking, do you consider yourself liberal, moderate, or a conservative?" A dichotomous variable, *liberal*, was constructed and set to 1 for people who answered "liberal" and 0 otherwise. A dichotomous variable, *conservative*, was constructed and was set to 1 for people who answered "conservative" and 0 otherwise.

Demographics. Respondents reported their sex, age, race, Hispanic ethnicity, education, income, and region of residence (see Appendix E for question wording and coding).

Missing data

       A series of dummy variables identified respondents who did not answer each demographic question (coded 1 for people who did not answer and 0 for people who did), and those respondents were assigned an arbitrary value for that demographic and were included as predictors in all regressions. This avoids losing cases while also preventing distortion of the parameter estimates.

Appendix D. Dismantling Mitigation Policies Put in Place by President Obama:

Exploring the Impact of Elite Cues

Measures

Experimental Conditions. Respondents were randomly selected to be asked one of the five experimental conditions: (1) no elite cue present (N=309), (2) no elite cue present (N=320), (3) President Obama was mentioned (N=270), (4) President Trump was mentioned (N=300), and (5) Both President Obama and President Trump were mentioned (N=302). Within each condition, respondents were asked four policy questions.

First question concerns with emission reduction by power plants:

(1) No elite cue present: "Do you think that the federal government should or should not require that by ten years from now, power plants in America must put out 30% less greenhouse gases than they did in 2005?" Coding: 1 = Should require, 0 = otherwise.
(2) No elite cue present: Same as (1).
(3) President Obama was mentioned. "When he was president, Barack Obama issued a rule requiring that by ten years from now, power plants in America must put out 30% less greenhouse gases than they did in 2005. Do you think the federal government should or should not require this?" Coding: 1 = Should require, 0 = otherwise.
(4) President Trump was mentioned. "Last year, President Trump cancelled a government rule requiring that by ten years from now, power plants in America must put out 30% less greenhouse gases than they did in 2005. Do you think that that rule should or should not have been cancelled?" Coding: 1 = Should not have been canceled, 0 = otherwise.
(5) Both President Obama and President Trump were mentioned. "When he was president, Barack Obama issued a rule requiring that by ten years from now, power plants in America must put out 30% less greenhouse gases than they did in 2005. Last year, President Trump cancelled that rule. Do you think that that rule should or should not have been cancelled?" Coding: 1 = Should not have been canceled, 0 = otherwise.

Second question concerns with emission reduction by the federal government:

(1) No elite cue present: "Do you think that by five years from now, the federal government should or should not be required to put out 40% less greenhouse gasses than it did in 2015?" Coding: 1 = Should be required, 0 = otherwise.
(2) No elite cue present: Same as (1).
(3) President Obama was mentioned. "When he was president, Barack Obama issued a rule that by five years from now, the federal government must put out 40% less greenhouses gases than it did in 2015. Do you think the federal government should or should not do this?" Coding: 1 = Should do, 0 = otherwise.

(4) President Trump was mentioned. "Last year, President Trump cancelled a government rule requiring that by five years from now, the federal government must put out 40% less greenhouses gases than it did in 2015. Do you think that that rule should or should not have been cancelled?" Coding: 1 = Should not have been canceled, 0 = otherwise.

(5) Both President Obama and President Trump were mentioned. "When he was president, Barack Obama issued a rule that by five years from now, the federal government must put out 40% less greenhouses gases than it did in 2015. Last year, President Trump cancelled that rule. Do you think that that rule should or should not have been cancelled?" Coding: 1 = Should not have been canceled, 0 = otherwise.

Third question concerns with Café standards for cars and trucks:

(1) No elite cue present: "Do you think that beginning in the year 2025, the federal government should or should not require that all new cars and trucks made in the United States must get at least 55 miles per gallon of gasoline?" Coding: 1 = Should require, 0 = otherwise.

(2) No elite cue present: "Do you think that beginning in the year 2025, the federal government should or should not require that all new cars and trucks made in the United States must get at least 40 miles per gallon of gasoline?" Coding: 1 = Should require, 0 = otherwise.

(3) President Obama was mentioned. "When he was president, Barack Obama issued a federal rule requiring that, beginning in the year 2025, all new cars and trucks made in the United States must get at least 55 miles per gallon of gasoline. Do you think the federal government should or should not require this?" Coding: 1 = Should require, 0 = otherwise.

(4) President Trump was mentioned. "This year, President Trump issued a federal rule requiring that, beginning in the year 2025, all new cars and trucks made in the United States must get at least 40 miles per gallon of gasoline. Do you think the federal government should or should not require this?" Coding: 1 = Should require, 0 = otherwise.

(5) Both President Obama and President Trump were mentioned. "When he was president, Barack Obama issued a federal rule requiring that, beginning in the year 2025, all new cars and trucks made in the United States must get at least 55 miles per gallon of gasoline. Last month, President Trump lowered the requirement, so cars and trucks must get at least 40 miles per gallon of gasoline. Do you think that President Trump should or should not lower the requirement?" Coding: 1 = Should not lower the requirement, 0 = otherwise.

Fourth question concerns with Café standards for cars and trucks:

(1) No elite cue present: "In 2015, the United States signed an agreement with 192 other countries to try to reduce the amount of greenhouse gasses they put out. The United States said that by the year 2025, its greenhouse gasses will be 25% less than were put out in 2005. If the U.S. does not succeed in doing this, there will be no

penalty.   Do you think the U.S. should or should not continue to try to do this?"
Coding: 1 = Should continue, 0 = otherwise.

(2) No elite cue present: Same as (1).

(3) President Obama was mentioned. "When he was president, Barack Obama signed an agreement with 192 other countries to try to reduce the amount of greenhouse gasses they put out. The United States said that by the year 2025, its greenhouse gasses will be 25% less than were put out in 2005. If the U.S. does not succeed in doing this, there will be no penalty.   Do you think the U.S. should or should not continue to try to do this?" Coding: 1 = Should continue, 0 = otherwise.

(4) President Trump was mentioned. "Last year, President Trump announced that the United States will withdraw from an agreement it signed in 2015 with 192 other countries. The countries committed to try to reduce the amount of greenhouse gasses they put out. The United States said that by the year 2025, its greenhouse gasses will be 25% less than were put out in 2005. If the U.S. does not succeed in doing this, there will be no penalty.   Do you think the U.S. should or should not withdraw from the agreement?" Coding: 1 = should not withdraw, 0 = otherwise.

(5) Both President Obama and President Trump were mentioned. "When he was president, Barack Obama signed an agreement with 192 other countries to try to reduce the amount of greenhouse gasses they put out. The United States said that by the year 2025, its greenhouse gasses will be 25% less than were put out in 2005. If the U.S. does not succeed in doing this, there will be no penalty.   Last year, President Trump announced that the United States will withdraw from the agreement. Do you think the U.S. should or should not withdraw from the agreement?" Coding: 1 = should not withdraw, 0 = otherwise.

Experimental condition dummies Two dummy variables were created as follows: *Present Obama mentioned* was set to 1 for respondents who were assigned to condition (3) or (5) and 0 otherwise; *President Trump mentioned* was set to 1 for respondents who were assigned to condition (4) or (5) and 0 otherwise.

Policy support index. The dependent variable was an index of support for the aforementioned four global warming policies (Cronbach's α=.84). A respondent's score on the index was computed by averaging answers to the four policies coded as follows and ranged from 0 (meaning the least support) to 1 (meaning the most support) (mean=.67, s.d.=.39, min=0, max=1).

Political party identification and liberal/conservative ideology. Respondents were asked: "Generally speaking, do you usually think of yourself as [a Democrat, a Republican/ a Republican, a Democrat], an Independent, or what?" A dichotomous variable, *Democrat*, was constructed and set to 1 for people who answered "Democrat" and 0 otherwise. A dichotomous variable, *Republican*, was constructed and set to 1 for people who answered "Republican" and 0 otherwise. Respondents were asked: "Generally speaking, do you consider yourself liberal, moderate, or a conservative?" A dichotomous variable, *liberal*, was constructed and set to 1 for people who answered "liberal" and 0 otherwise. A dichotomous variable, *conservative*, was constructed and was set to 1 for people who answered "conservative" and 0 otherwise.

Demographics. Respondents reported their sex, age, race, Hispanic ethnicity, education, income, and region of residence (see Appendix E for question wording and coding).

Missing data

A series of dummy variables identified respondents who did not answer each demographic question (coded 1 for people who did not answer and 0 for people who did), and those respondents were assigned an arbitrary value for that demographic and were included as predictors in all regressions. This avoids losing cases while also preventing distortion of the parameter estimates.

Appendix E. Demographics Measures

Respondents reported their sex, age, race, ethnicity, education, income, and zip code. For each of these questions, respondents who did not answer the question were coded with an arbitrary value, and a dummy variable was constructed, coded 1 for respondents who did not answer and 0 otherwise.

Male: "I'm required to verify: are you male or female?" A dichotomous variable "*male*" was set to 1 of respondents who answered "male" and 0 otherwise.

Age. "What is your age?" IF DID NOT ANSWER: "Could you please tell me if you are between the ages of 18 to 24, 25 to 34, 35 to 44, 45 to 54, 55 to 64, or 65 or older?" Six dummy variables were constructed for six age groups: 18-24, 25-34, 35-44, 45-54, 55-64, 65+. *Age 18-24* was the omitted group in the regressions.

Race. "I am going to read you a list of five race categories. Please choose one or more races that you consider yourself to be: White; Black or African American; American Indian or Alaska Native; Asian; OR Native Hawaiian or Other Pacific Islander." Dummy variables for *white, black,* and *other race* were constructed and were set to 1 for respondents who selected "White" and nothing else, "Black or African American" and nothing else, and another category or more than one category, respectively, and 0 otherwise. *White* was the omitted group in the regressions.

Hispanic ethnicity. "Are you Spanish, Hispanic, or Latino?" A dichotomous variable "*Hispanic*" was set to 1 of respondents who answered "yes" and 0 otherwise.

Education. "What is the highest grade of school you completed? Less than 1st grade, 1st, 2nd, 3rd or 4th grade, 5th or 6th grade, 7th or 8th grade, 9th grade, 10th grade, 11th grade, 12th grade, NO DIPLOMA, HIGH SCHOOL GRADUATE-high school DIPLOMA or the equivalent (For example: GED), Some college but no degree, Associate degree in college - Occupational/vocational program, Associate degree in college - Academic program, Bachelor's degree (For example: BA, AB, BS), Master's degree (For example: MA, MS, MEng, MEd, MSW, MBA), Professional School Degree (For example: MD, DDS, DVM, LLB, JD), and Doctorate degree (For example: PhD, EdD)". Dummy variables for *less than high school graduate, high school graduate, some college, college graduate,* and *post-college* were constructed and set to 1 if respondents who chose any response up to "12th grade NO DIPLOMA"; "HIGH SCHOOL GRADUATE-high school DIPLOMA or the equivalent (For example: GED)"; "Some college but no degree", "Associate degree in college - Occupational/vocational program", or "Associate degree in college - Academic program"; "Bachelor's degree (For example: BA, AB, BS)"; and "Master's degree (For example: MA, MS, MEng, MEd, MSW, MBA)", "Professional School Degree (For example: MD, DDS, DVM, LLB, JD)", or "Doctorate degree (For example: PhD, EdD)" and 0 otherwise. *Less than high school graduate* was the omitted group in the regressions.

Income. "The next question is about the total income in 2019 for you and all members of your family who lived with you during 2019, before taxes. Please include money you and all

members of your family received from jobs, pensions, social security, interest, dividends, capital gains, profits from businesses, unemployment payments, and all other money received. Adding up the income from all these sources and all other sources, which of the following CATEGORIES best describes your total income of you and all members of your family who lived with you in 2019, before taxes, from all sources? under 20 thousand dollars, 20 to under 35 thousand, 35 to under 50 thousand, 50 to under 75 thousand, 75 to under 100 thousand, 100 thousand or more?" Six dummy variables were constructed for six income groups: *under $20K, $20K to under $35K, $35K to under $50K, $50K to under $75K, $75K to under $100K,* and *$100K or more*. *Under $20K* was the omitted group in the regressions.

Marital status. "Are you married, widowed, divorced, separated or never married?" A dichotomous variable "*married*" was set to 1 of respondents who answered "married" and 0 otherwise.

Region. "What is your five-digit zip code at your home?" Zip codes were matched with states, which were matched with Census regions. Dummy variables for *northeast*, *midwest*, *south*, and *west* were constructed. *West* was the omitted group in the regressions.