

State-level Carbon Cap-and-Trade Survey, Garrett Stanford and Trudy Ann Cameron (2021). This survey was distributed to a random sample of Oregon residents in the Qualtrics consumer panel.

Page 1: The screening questions on the first 8 pages of this survey of Qualtrics panelists are completed before the page that contains the Consent to Participate in the actual survey. The Consent page is where the respondent first learns about the topic of the survey. This ordering is crucial to any ability to model systematic response/non-response (attrition from the random sample of Qualtrics panelists). Qualtrics prefers that respondents who are ineligible because quotas have already been met should be apprised of this fact before they get too far into a survey for which their answers are not needed. We require that potential respondents, still naïve about the topic of the survey, should at least be willing to supply their state of residents (always Oregon for this study) their age, gender, race, and household income bracket. These are the quota criteria for inclusion. But we also require that they enter their ZIP code. Our overall target sample (1000) is not large enough to warrant quotas by ZIP code within Oregon, but we need this information to permit us to link every one of these screened and eligible respondents to external auxiliary data that can be geocoded to ZIP codes. For our climate-related study, these external data sources include Census ZCTA data, NOAA climate division data, 2020 Presidential election data by county, state legislative district voting data for Oregon for 2016, along with spatial data on the recent history of wildfires and drought levels. These neighborhood/county characteristics can be used as proxies for the salience of climate change problems to people who live in the same area as the eligible respondent. The partisan reactions to Oregon's actual proposed carbon cap-and-trade programs in recent years suggests that political ideologies in the respondent's neighborhood may make programs to reduce carbon emissions either very attractive or readily dismissed. For the latter group, we expect a lower likelihood of continuing with the survey to completion, after the topic of the survey is revealed.

Qualtrics can target Oregon in issuing survey invitations. However, to prevent non-Oregonians from pretending to be from Oregon, we first check to see whether respondents choose "Oregon" when given an opportunity to choose their state. (If they don't choose Oregon, they are given one opportunity to choose again, and are terminated if they don't choose "Oregon" at least on the second try. The follow-up double-check page is not shown here.)

We need to make sure the set of people who take this survey represents the general population of the relevant states. So first, we need to verify that this study still needs information from more people who are like you.

Select the state where you live:

Page 2: Potential respondents are screened on age to be sure that quotas have not yet been exceeded for their age bracket. Given the limited size of the sample, quotas are expressed in

coarser brackets that are employed here. We wish to preserve the detail in the own-age variable for estimation of heterogeneity in preferences with age.

What is your age bracket?

Under 18 years

18 to 24 years

25 to 34 years

35 to 44 years

45 to 54 years

55 to 64 years

65 to 74 years

75 years or older

Prefer not to say

Page 3: Another screening question for checking against quotas. Based on prior research with Oregon, only a very small subsample is likely to choose "Non-binary," but for purposes of inclusivity, we include this as a distinct gender category. This group may need to be dropped if we split the sample by gender, since there are too few individuals in the Non-binary category to permit separate estimation of their distinct preferences concerning climate change.

What is your gender?

Male

Female

Non-binary

Prefer not to say

Page 4: Oregon's population is still racially skewed. Fully 75% of the population is non-Hispanic White. Only about 2.2% of the Oregon population is Black, but about 12% is Hispanic. With our targeted 1000 respondents, it is unlikely that we will be able to estimate systematically different preferences for different types of non-white racial groups. We expect that our models

may be able to distinguish White and Non-white. Nevertheless, we employ the race question for screening, so that eligible respondents can be checked against quotas for the study. If different non-white groups have different odds of dropping out of the study after they learn it is about climate change and carbon cap-and-trade programs, this eligible sample prior to learning the topic could be two or even three times larger than the 1000 respondents in the set of completed

surveys. There may be enough people in these different racial groups to identify systematically different propensities to complete the survey after the screening phase.

What is your race?

White

Black or African-American

Asian

American Indian or Alaska Native

Native Hawaiian or Pacific Islander

Some other race

Prefer not to say

Page 5:

In 2020, approximately what was your total annual household income, using these standard income brackets?

Click this blue text for a pop-up that explains [who counts](#) as your household. Click the X in the upper right to close the pop-up, or just click anywhere on the screen outside the pop-up.

Less than \$20,000

\$20,000 to \$24,999

\$25,000 to \$29,999

\$30,000 to \$49,999

\$50,000 to \$74,999

\$75,000 to \$99,999

\$100,000 to \$124,999

\$125,000 to \$149,999

\$150,000 to 174,999

\$175,000 to \$199,999

\$200,000 or more

Prefer not to say

Page 6:

What is the 5-digit Oregon ZIP code **where you live**? (This information will help verify that the set of people who take this survey will represent all regions.)



Page 7:

In the background, this page checks whether the zip code you entered, **97403**, is a valid **neighborhood** ZIP code in Oregon.

Meanwhile, if you are taking this survey on a computer, laptop or larger tablet, please maximize the window.

Click through to see the result for the ZIP code you entered.

Page 8:

Excellent. The ZIP code you entered, **97403**, appears to be valid neighborhood ZIP code in Oregon

Page 9:

Basic Information & Consent

Excellent. You have qualified for this study. Now we need to tell you a bit more about the study and get your formal consent to take part.

Study Procedures: Oregon's government has been considering a **carbon cap-and-trade** program in the state. If you are a resident of Oregon, and you decide to participate in this research study, you will be asked to complete a **roughly 15-minute survey** about whether and how Oregon should set up a program like this. (The survey may take longer if you haven't heard much about carbon cap-and-trade and you choose to study more of the optional background information we provide.)

We will first explain a bit about carbon cap-and-trade programs and how such a program might work in Oregon. Next, we will **show you some different versions of programs**. Each time, you will be asked to consider the program and to **vote yes or no**. We will then gather some information that will help us understand how preferences for these programs differ across groups of people.

Questions About this Survey? This survey project is funded by the Department of Economics at the University of Oregon. If you have questions or concerns about this survey, or about the study that will use the data it collects, please contact the research team: Professor Trudy Ann Cameron, (cameron@uoregon.edu), or project manager Garrett Stanford, Ph.D. candidate (gos@uoregon.edu), both at the Department of Economics, University of Oregon, Eugene, OR, 97403-1285.

Questions About the Protection of Research Subjects? The University of Oregon's Research Compliance Services can be reached at researchcompliance@uoregon.edu, or at 541-346-2510.

Participation in this Study is Voluntary. Refusal to participate will involve no penalty or loss of any benefits to which the subject is otherwise entitled, and the subject may discontinue participation at any time.

Are you eligible and willing to be a participant in this study? By clicking Yes, you certify that you are an Oregon resident at least 18 years or older, and you consent to have the information you provide used in this study.

Yes

No

Page 10:

We care about the quality of our data. Do you commit to thoughtfully provide your best answers to each question in this survey?

I will provide thoughtful and honest answers

I will not provide thoughtful and honest answers

I can't promise either way

Climate Change:



2017 Eagle Creek wildfire near Cascade Locks, OR (AP photo: Genna Martin)

Almost all climate scientists now agree that greenhouse gases resulting from human activities are causing Earth's climate to change. They also say that climate change has already begun to cause a variety of problems around the world, including droughts, extreme weather, and wildfires.

However, some people remain unconvinced. Some have doubts about whether climate change is really happening. Others agree that the climate seems to be changing, but they question whether humans are responsible.



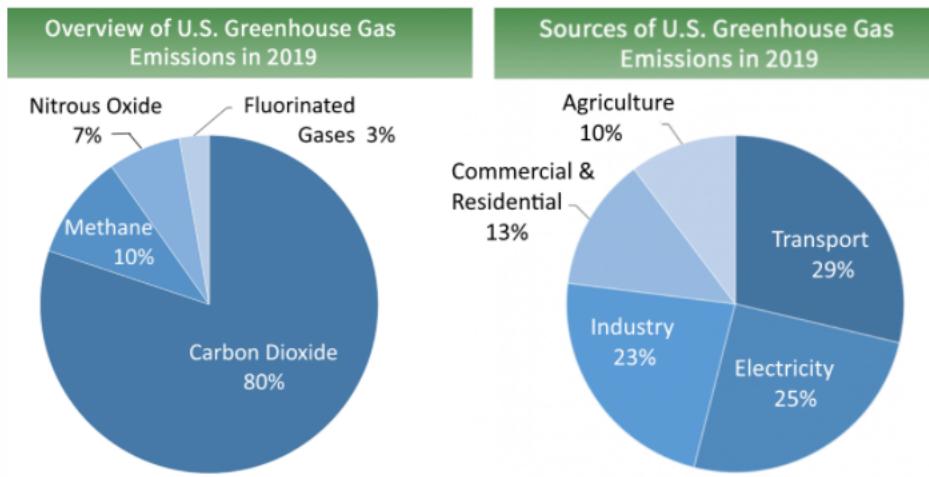
(<https://www.cnn.com/2021/06/10/us/klamath-oregon-drought-water-war/index.html>; photo: Gregg Canes, CNN)

Page 12:

Carbon Emissions:

The most common greenhouse gas that humans create is **carbon dioxide**. These carbon gas emissions are made when we burn fossil fuels. These fuels power cars, trucks and jets. They include the natural gas that heats our homes, and the coal that some power plants burn to make electricity. Carbon emissions also come from factories and industrial plants.

The following pie charts shows the types and sources of greenhouse gases in the U.S., for 2019, according to the Environmental Protection Agency (EPA):



Controversy



Climate activists demonstrate in favor of cap-and-trade bill at Oregon Capitol (Dirk VanderHart photo/OPB)



Loggers and truckers rallying against cap-and-trade bill at Oregon Capitol (Marilyn Deutsch photo @marilyndeutsch)

Twice in recent years, Oregon legislators have considered beginning **carbon cap-and-trade programs**. However, the legislators could not agree on the specifics of the programs. This survey is designed to reveal how different Oregonians feel about a wide variety of possible cap-and-trade programs.

A **carbon cap-and-trade program** is a way to reduce carbon emissions from factories, power plants, and other major sources.

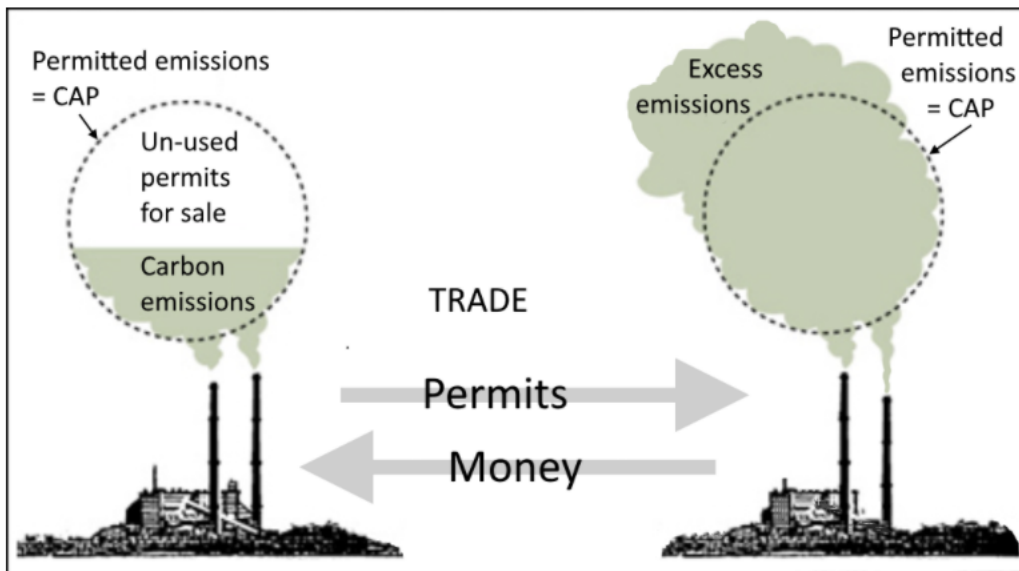
In a cap-and-trade system, the government gives each polluting company some number of permits for carbon emissions. A company's pollution must be less than or equal to the number of permits it has. Each company can decide if they would like to use all their permits themselves, to cover their own carbon emissions, or **trade (sell)** some of their permits to other companies. The company *selling* the permit will get money from the company that *buys* the permit.

How familiar are you with carbon cap and trade programs?

- Quite familiar
- I should probably review the basics
- Not familiar at all

Page 14:

Cap and Trade



Adapted from image by Ann Carlson, LegalPlanet (UCLA Law), 11/16/11

Here's how a carbon cap-and-trade program works.

- **STEP 1:** The government decides on an overall “cap” on carbon emissions. The cap limits how many total carbon emissions will be allowed across all businesses (companies).
- **STEP 2:** The government gives out permits to businesses. Businesses are allowed to release only the amount of carbon emissions covered by the number of permits they own. The total number of permits given out is equal to the cap decided in Step 1.
- **STEP 3:** Permit holders are allowed to trade! This means businesses will buy and sell permits.
- Over time, steps 1 through 3 are repeated. At intervals, the overall cap is made smaller and smaller so that total carbon emissions become less and less.

Carbon cap-and-trade programs are attractive because they reduce carbon emissions while minimizing the overall burden on businesses. Companies that have a hard time reducing their carbon emissions can buy extra permits from other businesses who can [more cheaply](#) reduce their carbon emissions.

Remember: You can click on most **blue text** for explanations!

Now back to the survey!

Which companies are regulated by carbon cap-and-trade?

If Oregon adopts a carbon cap-and-trade program, it must decide which types of companies will be regulated (i.e., which companies will be required to have carbon permits for their carbon emissions). In general, companies that pollute more and create more carbon emissions will be part of the program.



(clockwise from left: utilityproducts.com; oregonlive.com; wsj.com)

It is hard to know exactly which companies will be regulated. However, likely candidates include (but may not be limited to):


- Power plants
- Manufacturing plants
- Transportation companies (airlines, truck lines, train lines etc.)
- Timber and logging companies
- Oil and natural gas companies

Carbon Permits

When a cap-and-trade program starts up, the state government can either give carbon permits away for free, or sell them, to carbon-emitting companies.

 **Free permits** can be good:

- Free permits are usually **preferred by companies** that pollute
- Free permits also **help Oregon companies compete** with companies in other states or countries that do not have carbon cap-and-trade programs

 **Auctioned permits** can also be good:

- Companies are under more **pressure to reduce** their carbon emissions if they must pay for permits
- Auctioned permits **raise government revenue** for other programs (e.g. fund new energy efficient equipment for households)

Thus there are **three** main considerations for permits:

- Share of total permits that will be **sold** at auction (where the rest will be free).
- If some permits are given away for free, **how** are these free permits divided up?
- **What is done** with the money from permit auctions

Learn more about carbon permit auctions

Continue with survey

How many permits will be sold?

When it comes to deciding how many of the total permits the government auctions (sells to companies) it is a balancing act. The **most important thing** to remember is that, in general, **more permits auctioned means more emission reduction and more costs to businesses**. On the flip side, less permits auctioned means less emission reduction and fewer costs to businesses.

Let's think about why this is the case.

1. First, let's consider the situation when all permits are given to companies for free. In this situation, a company will only have to spend money on permits if it wants to buy additional permits from other companies. So in some sense a company can still create emissions for free (as long as it doesn't exceed the permits it was given).
2. Now let's consider the situation when all permits are auctioned to companies. In this situation, a company will have to pay for all of its permits. If a company wants to produce three tones of carbon emissions it must buy three permits from the government or other companies. No more free emissions!

There is a lot of evidence from existing carbon cap-and-trade programs that the more permits that are auctioned the greater the amount of emissions are reduced. However, naturally companies are usually opposed to the government auctioning permits.

In practice, the situations where ALL permits are auctioned or ALL permits are free rarely occur. If you would like to know how free permits can be divided up and what can be done with the money from auctioned permits click "Learn more" below.

[Learn more](#)

[Back to survey](#)

How are free permits distributed?

In the case when the government has decided to give permits away for free how many permits companies receive can be complicated and politically tense. It is important to remember that only companies that are regulated (subject to the cap-and-trade program) will receive permits.

There are many ways that the free permits can be distributed. Below are three potential ways:

1. Each company receives an equal share of the permits. For, example, if 10 permits are given away for free and there are 5 companies then each company gets two permits for free.
2. Companies that have traditionally created more carbon emissions receive **more** permits. This is called "Grandfathering" and is designed to reduce costs on businesses while still reducing emissions.
3. Companies that have traditionally created more carbon emissions receive **less** permits. This is called "Reverse Grandfathering" and is designed to put more pressure on the higher polluting plants.

If you would like to know what can be done with the money from auctioned permits click "Learn more" below.

Learn more

Back to survey

Page 19:

What can be done with permit auction money?

If some carbon emissions permits are auctioned (sold) to companies by the state, then the revenue raised could be used in at least three different ways:

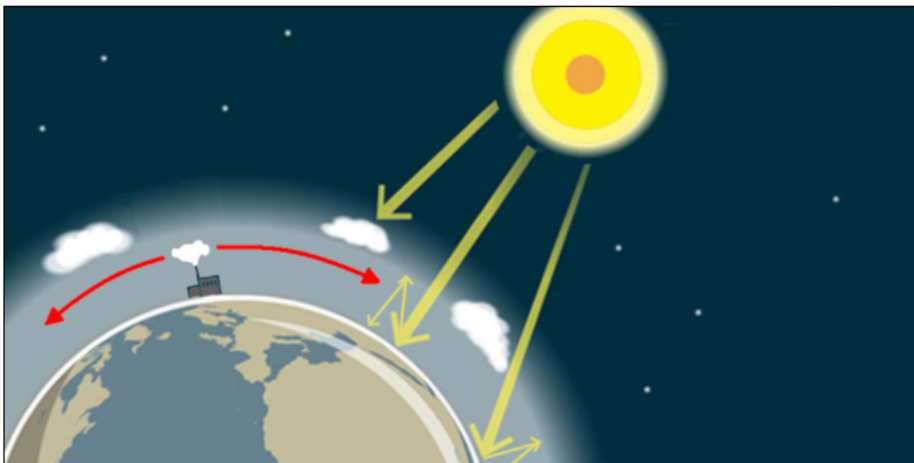
1. To pay for new equipment that will reduce carbon emissions ([Details](#))
2. To support communities and/or workers while they adapt to the cap-and-trade program ([Details](#))
3. To add to Oregon's General Fund, allowing some existing Oregon taxes to be reduced ([Details](#))

Page 20:

Benefits of carbon reductions

Global benefits (climate change):

Carbon emissions produced anywhere will spread around the entire globe. So if Oregon reduces its carbon emissions, the **whole world benefits** from less carbon in the atmosphere.



(Image adapted from a British Geological Survey diagram)

The diagram above shows just one factory, in just one location on the globe. The factory's carbon emissions rise into the atmosphere and eventually spread all around the earth (**the red arrows**). Carbon emissions from sources in Oregon do the same thing. When the atmosphere has more carbon dioxide, it holds in more of the sun's heat (**the yellow arrows**).

Regional benefits (other pollutants):

The photo below shows a day in Portland, Oregon, with poor air quality. Sometimes, air pollution in Oregon is due to wildfires burning somewhere in the region. Other times, air pollution comes from factories and vehicles.

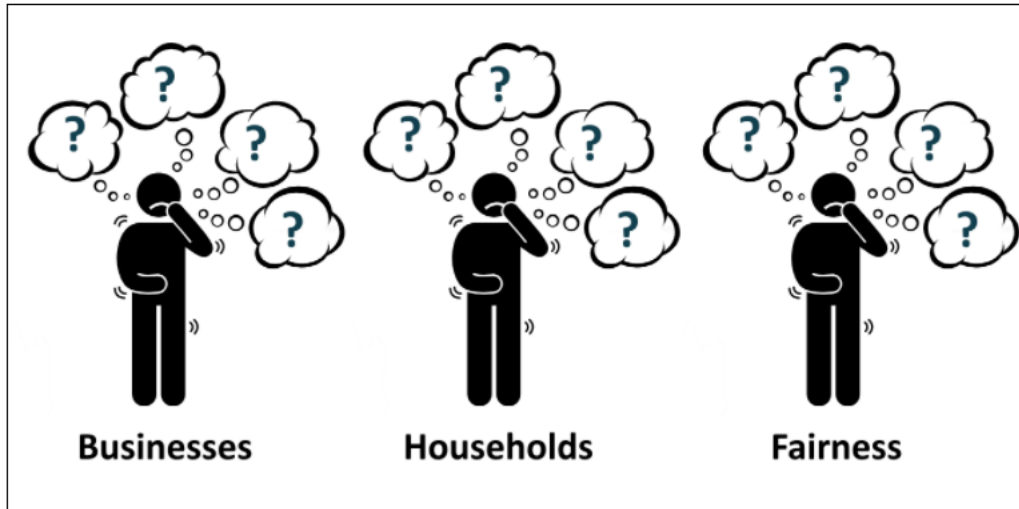


(Photo: Mason Walker, Portland Business Journal blog, 2016)

Depending on how the cap-and-trade program is designed, some benefits could be **received by Oregonians only**. Some types of cap-and-trade programs can:

- Also reduce **other pollutants** that result from the burning of fossil fuels. Burning fossil fuels can harm air quality, as in the picture above. The benefits of reduced air pollution would be felt by communities living close to polluters.
- Provide opportunities for farmers, ranchers, and forest owners to **raise new revenue**.
- Improve Oregon's chances to get a head-start on growing new types of industries (and jobs) in the **green sector**.

Possible concerns



(Adapted from graphic by Gan Khoo Lay)

Alongside the benefits of a carbon cap-and-trade program, some challenges will result from the extra cost of doing business when carbon permits are required.

Challenges for businesses: [higher operating costs](#)

Challenges for households: [more expensive products](#)

Equity and fairness concerns: [unfair burden](#)

These challenges can be lessened by careful program design but they exist nonetheless! Which of these challenges *especially* concern you? (check any that apply)

The burdens on businesses

The burdens on households

Equity and fairness

None of the above

Page 22:

In which Oregon county do you live? We'll describe carbon programs in terms of their effects on people in your area.

Along with each county's name below, we provide that county's population.

Page 23:

Your survey questions will be tailored to the county where you live. Your choice on the last page has been recorded as:

Lane County (2019 population = 382,067)

Is this the right county?

Yes

No

Policy summaries

Soon, we will ask you to consider some possible carbon cap-and-trade programs for Oregon.

One at a time, we will describe each of six possible programs using compact tables like the one below.

- On the left in [blue](#) are the features of the program. Click on the [blue](#) text in the table at any time for explanations!
- On the right will be the value for each feature

For **every program** you are shown, it would take a while to get things set up. You should assume that **each program would begin January 1, 2023**. In other words, permits will be required for carbon emissions starting January 1, 2023. This means all of the costs and benefits will also begin to accumulate as of January 1, 2023.

This is just an example. **You don't need to do anything yet!**

Program:	A
Results by 2050:	
Carbon emissions reduction	70%
Carbon industry jobs lost	18,200
Green industry jobs gained	13,000
Carbon permits, rules:	
Share of permits auctioned	70%
Auction revenue uses:	
Fund new equipment	40%
Support communities/workers	60%
Oregon tax relief	0%
Additional regulations:	
Limit other pollutants	NO
Cost to your household:	
Dollars per month	\$405
<i>Click blue text for details</i>	A

First, we will use the next few screens to explain how to interpret each group of features. Remember, you can click on any feature name for a pop-up window with more information.

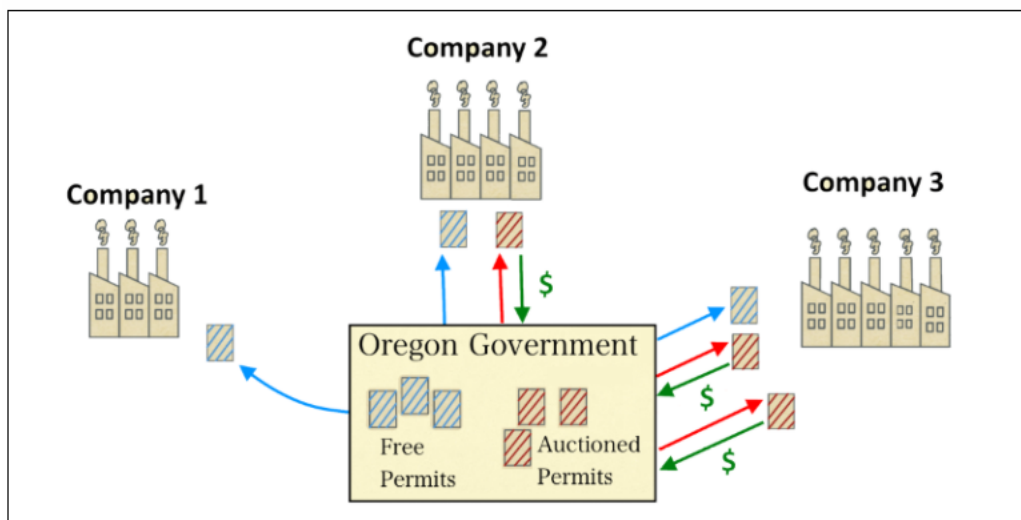
Page 25: (was a duplicate of previous page—need the actual page for Feature Group 1)

FEATURE GROUP 2: Carbon permits, rules

Companies will try harder to reduce their carbon emissions if they have to pay for permits.

Selling some carbon permits at auction also **raises revenue** that can be used to help companies and workers adapt to a lower-carbon world.

Share of permits auctioned?



The row of the table indicates the percent of total available carbon permits that will be sold to companies at auction:

Share of permits auctioned	70%
----------------------------	-----

In this case 70% of total available carbon permits will be sold. The rest will be given to participating companies for **free**, according to a formula based on their past carbon emissions. If companies are unable or unwilling to buy permits, they must get by with only their free permits.

[Review full summary table](#)

FEATURE GROUP 3: Auction revenue uses

How will permit auction revenue be spent?



Three rows in each table describe how money from the carbon permit auction would be spent.

Fund new equipment?

Fund new equipment	40%
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Share of permit auction revenue that will be used to help households and companies to buy emission reducing equipment. Such equipment might include an energy efficient washing machine for a family, or more energy efficient machinery for a factory.

Support communities/workers?

Support communities/workers	60%
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Share of revenue that will be used to support communities/workers that bear a relatively heavier burden due to the program’s costs. This might include communities with a lot of carbon-intensive jobs, or groups/communities that spend a large proportion of their income on energy for heating or transportation.

Oregon tax relief?

Oregon tax relief	0%
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Share that will go into Oregon’s state tax fund. More revenue from permit auctions would allow Oregon to reduce the burden of other existing state taxes paid by Oregon residents.

[Review full summary table](#)

FEATURE 4: Additional Regulations



(Adapted from "Beware of Air" image at nrdc.org)

A cap-and-trade program will reduce **overall** carbon emissions. Many companies will emit less carbon, but permit trading may allow some companies to emit *more*.

Companies that end up producing more carbon emissions may also produce greater amounts of [other pollutants](#).

To protect surrounding communities, a cap-and-trade program may come with additional regulations on these other pollutants.

Limit other pollutants	NO
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A **YES** for this feature means that there will be regulations to limit other pollutants to safe levels. A **NO** means that this program includes no additional safeguards against increases in other pollutants.

[Review full summary table](#)

FEATURE 5: Cost to your household



(Images, by row: dynamicslr.com; spacecoastdaily.com; oregonbusiness.com; ecotextile.com)

The last row of the summary table for each cap-and-trade program will give your MONTHLY cost of the program.

Dollars per month

\$405

These are the **unavoidable** average monthly costs that *your household* would bear if the program is adopted. These higher costs might result *directly or indirectly* from higher energy prices or from the loss of jobs in carbon-intensive industries.

NOTE: It is possible you *may* see a program or two with VERY high costs in your version of this survey. We don't expect many people to vote for these costly programs.

[Review full summary table](#)



Program A

This screen is your FIRST chance to vote on a program. You will be asked about six different programs. Their arbitrary labels A through F have nothing to do with the quality of each program.

- Each time you vote, ignore any other programs we may have described elsewhere
- Imagine that the option being offered for each vote is the **ONLY** one available

In any one vote:

- If the program being offered is **better than no program at all**, you should vote "Yes" for the program
- If the monthly cost of the program would be *just too high* for your household or your community—given what it would accomplish and how it would work—you should feel free to vote "No"

Please consider all the features of Program A below, and **vote as if this were a real and secret ballot**. Your actual vote on a secret ballot might be different from the way you would vote if you had to raise your hand in public, and that is OK. We need to know what would happen for a real secret ballot in Oregon. Remember that the research team will not be able to connect your choices to you as an individual.

Remember that **job losses and job gains listed are for Lane County only.**

In hypothetical choices such as these, people sometimes do not think carefully enough about what they would have to give up to be able to pay the monthly cost of the program. **Please consider what your household would have to sacrifice, if the proposed cap-and-trade program were adopted.**

Be sure to consider all the features of a program. If you need to review the explanation for a feature, click on its name (any blue text), then **vote at the bottom of this screen.**

Program:	A
Results by 2050:	
Carbon emissions reduction	70%
Carbon industry jobs lost	18,200
Green industry jobs gained	13,000
Carbon permits, rules:	
Share of permits auctioned	70%
Auction revenue uses:	
Fund new equipment	40%
Support communities/workers	60%
Oregon tax relief	0%
Additional regulations:	
Limit other pollutants	NO
Cost to your household:	
Dollars per month	\$405
<i>Click blue text for details</i>	A

If Program A were the only program to be put to a vote, I would vote for:

- Program A to begin January, 1, 2023
- No program at all

Page 31: Displayed only if respondent chooses "No program at all" for the first vote. We wished to save them working through all six program choices if they already knew that they would never vote yes for any such program.

Different people have different interests in the possibility of a carbon cap-and-trade program for Oregon. To which of these groups do you belong?

- I did not like **Program A**, but there might be some type of program, at some cost low enough for me, for which I could possibly vote "Yes"
- Carbon cap-and-trade programs are a BAD idea. The government should not interfere with the free market. **I would vote "No" for ANY carbon cap-and-trade program!**
- Something needs to be done about carbon emissions, but **a carbon cap-and-trade program is not the solution.**

Page 32: Displayed if they chose the third option on the previous screen.

A cap-and-trade program is not everyone's preferred way to reduce overall carbon emissions. In this survey, we are assuming that the **only alternative** to a cap-and-trade program is **no carbon emission reduction policy**.

- I would still vote "No" for ANY carbon cap-and-trade program!**
- A cap-and-trade program **could be** better than no policy, even though I would rather have some other program for carbon reduction.

Program B

Now assume that Program A had never been proposed, and instead, that Program B was the only carbon cap-and-trade program under consideration. **Here is your second vote.** Assume that **only Program B is now available.**

Again, vote as if this were a real and secret ballot. If Program B (with its different set of features) would leave you worse off than having no program at all for carbon reduction, you should vote for “No Program”.

Program:	B
Results by 2050:	
Carbon emissions reduction	60%
Carbon industry jobs lost	11,200
Green industry jobs gained	5,200
Carbon permits, rules:	
Share of permits auctioned	30%
Auction revenue uses:	
Fund new equipment	60%
Support communities/workers	0%
Oregon tax relief	40%
Additional regulations:	
Limit other pollutants	YES
Cost to your household:	
Dollars per month	\$270
<i>Click blue text for details</i>	B

If Program B were the only program to be put to a vote, I would vote for:

Program B to begin January, 1, 2023

No program at all

Program C

Now suppose that **neither** Program A nor Program B has been proposed or discussed. Instead, the ballot gives you a choice between **Program C** and **No Program**.

Program:	C
Results by 2050:	
Carbon emissions reduction	30%
Carbon industry jobs lost	5,600
Green industry jobs gained	13,800
Carbon permits, rules:	
Share of permits auctioned	10%
Auction revenue uses:	
Fund new equipment	10%
Support communities/workers	30%
Oregon tax relief	60%
Additional regulations:	
Limit other pollutants	NO
Cost to your household:	
Dollars per month	\$ 80
<i>Click blue text for details</i>	C

If Program C were the only program to be put to a vote, I would vote for:

Program C to begin January, 1, 2023

No program at all

Program D

Now erase Programs A, B, and C from your mind. If you were asked to choose instead between just Program D and No Program, how would you vote?

Program:	D
Results by 2050:	
Carbon emissions reduction	60%
Carbon industry jobs lost	11,200
Green industry jobs gained	13,800
Carbon permits, rules:	
Share of permits auctioned	20%
Auction revenue uses:	
Fund new equipment	40%
Support communities/workers	10%
Oregon tax relief	50%
Additional regulations:	
Limit other pollutants	YES
Cost to your household:	
Dollars per month	\$180
Click blue text for details	D

If Program D were the only program to be put to a vote, I would vote for:

Program D to begin January, 1, 2023

No program at all

Program E

As before, your task on this screen is to decide if you would rather have Program E or no program at all. Assume that Program E, rather than any of the programs on earlier screens, has ended up on the ballot. How would you vote?

Program:	E
Results by 2050:	
Carbon emissions reduction	80%
Carbon industry jobs lost	12,800
Green industry jobs gained	19,000
Carbon permits, rules:	
Share of permits auctioned	80%
Auction revenue uses:	
Fund new equipment	20%
Support communities/workers	0%
Oregon tax relief	80%
Additional regulations:	
Limit other pollutants	YES
Cost to your household:	
Dollars per month	\$325
<i>Click blue text for details</i>	E

If Program E were the only program to be put to a vote, I would vote for:

Program E to begin January, 1, 2023

No program at all

Program F

Program F is the final cap-and-trade program we will ask you to consider. Suppose that NONE of the previously offered programs are available. As always, you should feel free to vote "Yes" or "No" on this program, based on whether or not you expect it to make you better off.

Program:	F
Results by 2050:	
Carbon emissions reduction	10%
Carbon industry jobs lost	4,800
Green industry jobs gained	5,200
Carbon permits, rules:	
Share of permits auctioned	40%
Auction revenue uses:	
Fund new equipment	60%
Support communities/workers	30%
Oregon tax relief	10%
Additional regulations:	
Limit other pollutants	NO
Cost to your household:	
Dollars per month	\$ 75
<i>Click blue text for details</i>	F

If Program F were the only program to be put to a vote, I would vote for:

Program F to begin January 1, 2023

No program at all

Page 38:

Please indicate why you would vote "No program at all" on Program F.

Exactly the same reasons why I voted against any previous Programs

Too much emission reduction

Too little emission reduction

The economic impacts were too costly

Did not approve of the auction revenue use

Too many permits were auctioned

Too few permits were auctioned

Did not approve of the Additional Regulations on other pollutants

The benefits of Oregon or the World do not justify ANY cost

Program F did not seem believable

Some other reason

Page 39: If the respondent chose "No program" when offered "Program A," above, and they chose the third option on Page 31b, they were shown this screen at this point in the survey. We wanted people who desire some sort of carbon policy, but who are not in favor of cap-and-trade programs, to have some place to express these preferences, although they were

allowed to make choices among cap-and-trade programs conditional on those being the only options available.

You indicated earlier that you would prefer another type of policy to cap-and-trade when it comes to addressing carbon emissions. What type of policy would you prefer? (Check all that apply)

A tax on carbon emissions

Carbon emissions standards (i.e., rules for maximum carbon emissions)

Technology standards (i.e., rules about carbon-reducing technologies that must be installed)

A subsidy for carbon emissions reductions (i.e. the government offers money if carbon-emissions are reduced)

Not sure / Don't know

Other (Please specify)

Page 40:

Think back over all of your program choices. Which program features did you find were **the most important to you**? Select as many as apply.

- Carbon emissions reduction by 2050
- Carbon industry jobs lost
- Green industry jobs gained
- Share of carbon permits auctioned
- Use of auction revenue to fund new equipment
- Use of auction revenue to support communities/workers
- Use of auction revenue for Oregon tax relief
- Additional regulations to limit other pollutants
- Cost of the program to your household
- None of these features were important to me

Page 41:

How many years have you lived in Oregon? (Move the slider)

0 10 20 30 40 50 60 70 80 90 100



How many more years do you expect to keep living in Oregon? (Move the slider)

0 10 20 30 40 50 60 70 80 90 100



Page 42:

What is your ethnicity?

Hispanic

Non-Hispanic

Other

Prefer not to say

Page 43:

Which of these industries provides a significant amount of your household's income, either **directly** (through wages and/or business income) or **indirectly** (through pension and/or investment income)? (choose all that apply)

My household depends on income from investments that are broadly diversified across most of these industries

Accommodation and Food Services

Administrative and Support and Waste Management and Remediation Services

Agriculture, Fishing and Hunting

Arts, Entertainment, and Recreation

Construction

Educational Services

Finance and Insurance

Forestry and Logging

Health Care and Social Assistance

Information

Management of Companies and Enterprises

Mining, Quarrying, and Oil and Gas Extraction

Other Manufacturing

Other Services, except Public Administration

Professional, Scientific, and Technical Services

Public Administration

Real Estate and Rental and Leasing

Retail Trade

Truck Transportation

Utilities

Warehousing and Other Transportation

Wholesale Trade

Wood Product Manufacturing

Other (Please specify)

None of the above

Prefer not to say

Page 44:

Politically, do you consider yourself to be:

- Strongly conservative
- Somewhat conservative
- Moderate
- Somewhat liberal
- Strongly liberal
- Prefer not to say

Page 45:

Which political party do you most strongly identify with?

- Republican
- Democrat
- Independent

Page 46:

What is your highest level of education?

Less than high school

High school graduate

Some college

Bachelor's degree

Master's degree

Doctoral degree

Trade or technical school

Prefer not to say

Page 47:

Which best describes your current employment status?

Self-employed or small business owner

Employee, working full-time

Employee, working part-time

Not employed, looking for work

Not employed, NOT looking for work

Retired

Disabled, not able to work

Full-time student

Student with part-time work

Other

Prefer not to say

Page 48:

“Climate change is real, and is a serious threat to humanity.”

Strongly Agree

Agree

Neutral

Disagree

Strongly Disagree

Page 49:

"Climate change is the result of human activity."

Strongly Agree

Agree

Neutral

Disagree

Strongly disagree

Page 50:

Who is most responsible for slowing or preventing climate change? (Select all that apply)

Local governments

The Federal government

Households

Companies

People who are wealthier

People who are responsible for more emissions

Other

Everyone equally

No one in particular

Don't know / not sure

Page 51: We conjectured that there may be heterogeneity in preferences for cap-and-trade programs according to whether the individual (yet) has descendants who will need to survive in the climate conditions that are bequeathed to them by today's policies.

Do you have any of the following? (Check all that apply)

Children

Grandchildren

Great-grandchildren

Other descendants (please specify)

None of the above

Don't know / not sure

Page 52: We conjectured that there may be heterogeneity in preferences for taking the welfare of future generations into account according to whether the respondent knows about and remembers

their own ancestors. Evidence of attention to past generations may be correlated with a concern that future generations will remember the respondent.

How many generations back can you trace at least some of your ancestors?
(Check the greatest number)

1 generation (i.e., just your parent(s))

2 generations (i.e. your grandparent(s))

3 generations (i.e., your great-grandparent(s))

4 generations

5 generations

6 generations

7 or more generations

Don't know / not sure

Page 53: If the respondent relies on fossil fuels to heat their dwelling, we conjectured that they may find the increased costs of carbon will be reflected in higher heating bills for their own dwelling (independent of any lower heating requirements that may accompany climate change)

What is the primary fuel you use to heat your dwelling?

- Natural gas
- Electricity from a conventional power plant
- Electricity from solar panels or wind power
- Electricity (unsure about source)
- Wood or wood pellets
- Passive solar (heated water)
- Other (please specify)

- I don't heat my dwelling
- Don't know / not sure

Page 54: We conjectured that the respondent's current mode of transportation may affect support for a cap-and-trade program. If they already have a hybrid or electric vehicle, or do not rely on a

personal vehicle at all, they may feel less vulnerable to the prospect higher fossil fuel prices under a carbon cap-and-trade program.

What are your most common forms of transportation? (Check as many as apply)

Personal vehicle (gasoline or diesel)

Personal vehicle (hybrid fuel)

Personal vehicle (electric)

Public transportation (bus or train)

Taxi or ride-sharing (e.g., Uber or Lyft)

Bicycle

Walking

Other (Please specify)

Prefer not to say

Page 55: We sought to be neutral in our presentation of carbon cap-and-trade options, but respondents would be correct in assuming that if the research team did not want a carbon cap-and-trade program, why are they doing a survey. We suspect that respondents are more likely to feel that the research team is pushing them to vote in favor of a cap-and-trade program if they are less inclined that average to approve of carbon reduction policies. They may feel that the research team is not sufficiently enthusiastic about a carbon cap and trade program if they themselves are deeply concerned about climate change. We randomized across respondents whether they saw this question in the format that is displayed here, or whether they saw the answer options in the reverse order. This randomization allows us to check for a systematic bias

in choosing the first alternative offered. Across the two split samples, there should be roughly equal proportions in each answer bin if there is no first-option bias in respondents' answers.

It seemed like the research team wanted me to:

- definitely vote **FOR** a carbon cap-and-trade program
- probably vote **FOR** a carbon cap-and-trade program
- vote **according to my own beliefs**
- probably vote **AGAINST** a carbon cap-and-trade program
- definitely vote **AGAINST** a carbon cap-and-trade program

Page 56: In part, we just want to know how this rather-complex choice-experiment survey was received by respondents. If there are low numbers in any of these ratings, we will match these to any verbatim comments on the next page.

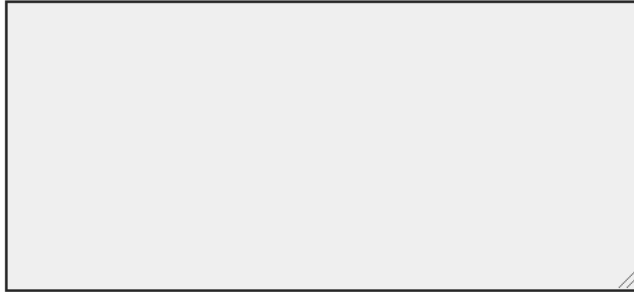
Please rate the survey you just took (type a number between 1 and 5 in each box):

Understandable	<input type="text"/>
Relevant to you	<input type="text"/>
Interesting	<input type="text"/>
Informative	<input type="text"/>

Page 57: Open-ended questions are tedious for respondents, especially if they are taking the survey on a smartphone or tablet that does not have a dedicated full-size keyboard. But these questions are also critical for detecting nonsense text that may belie that the answers to the rest

of the survey were not entered by a sentient human. Nonsense text in this box, even though the question is optional, signals a need for greater scrutiny of those responses.

Thank you for sharing your opinions about different types of carbon cap-and-trade programs. If you wish, please provide some feedback before you go:

A large, empty rectangular box with a light gray background and a thin black border, intended for providing feedback.