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CLEAN POWER:
PUBLIC OPINION, THE COURTS AND
WHERE DO WE GO FROM HERE?

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P R O C E E D I N G S

MR. JONES: Good morning, everybody. My name is Bruce Jones. I'm the Vice President for Foreign Policy here at Brookings, and I'm also chair of what we call the Cross-Brookings Initiative on Climate and Energy. And on behalf of that initiative and this little development program here at Brookings, I'm delighted to welcome you here today.

Some of you may have noticed that we are in an election, in an election season, and some of you may have concluded that this is not an election being fought over policy, but, rather, over different issues.

Were it being fought over policy, one of the more consequential questions in front of us, in front of us an electorate are two very different visions of where we are in the balance between energy production economics on the one hand, and climate policy on the other, and the interaction between those things.

The key tool that the current administration has used to try to balance those, or to kind of shift us in a direction of a more climate-friendly energy mix is the Clean Power Act.

And we're very happy today to have an event to discuss American attitudes on clean power led by Steven Kull of the University of Maryland, who has been doing innovative public polling work on key issues in front of the electorate for nearly 20 years, and is the Director of the Program for Public Consultation at the School of Public Policy at the University of Maryland.

And his report, which is the basis for today's event is called, "Americans on Clean Power." I'm guessing if you polled in Americans on dirty power, you'd get very different results, but be interesting to hear the findings.

And then we're going to have an all-star panel to discuss the report and the conclusions.

We'll kick off, we're very honored to have Bill Reilly back at Brookings. Bill is the former Director of the Environmental Protection Agency, Chair of the BPD part of Verison Oil Spill Commission, former Chair of the World Wildlife Fund. I could go on for a very long time as senior and important environmental and energy responsibilities that Bill Reilly has undertaken on behalf of the United States.

Nate Hultman, Steve's colleague at the University of Maryland, who until recently was part of the Energy and Climate Team at the White House, and helped put together the goals that the United States adopted under the Paris meeting of the U.N.

And Adele Morris, who served for a long time in the U.S. government, but now heads the Climate and Energy and Economics Team here at Brookings as a noted expert not only on tax policy as it related to energy and climate, but has spent a lot of time trying to understand different political attitudes in this country around climate change and energy issues and so I think can comment very richly on the issues that we're going to talk about today.

But to kick us off, Steve, over to you.

MR. KULL: Thank you for coming. The whole subject of Americans on Clean Power elicits a concern that, well, whatever the public might say, it's just not really very well informed on the issue.

A number of polls have shown more than 60 percent say that the U.S. should reduce greenhouse gases, should participate in the Paris Climate Treaty, but it's not bipartisan, and policymakers question whether it's valuable to have the public give input.

So we have developed a method. We do these surveys. We call them citizen cabinet surveys. The idea is that the public is playing an advisory role. And we take them through a process called a policymaking simulation. We try to put them in the shoes of a policymaker.

They get a briefing on the issues as we go along. They're presented policy options that are in play. And they're presented the costs and the benefits. This really key.

They evaluate pro and con arguments, the ones that are in play, and then, finally, they make recommendations and it's presented to them as such.

All the content is vetted with congressional staffers from both parties, as well as outside experts, in this case, the Chamber of Commerce and the World Resources Institute, as well as experts at the University of Maryland gave input on the development of the survey instrument.

In terms of the methodology, we use an online panel. It's primarily from Nielsen Scarborough's probability-based panel. Neil Schwartz is here, who has been working closely with us from Nielsen Scarborough.

We also have additional panels recruited by mail and phone by Communications for Research and the University (inaudible) the Survey Research Center. The field dates were April through June.

The total sample, as you see, is quite large, 5,975. That's a national sample that gives a margin of error of 1.6 percent. And the idea here is that we also pull out, have a large enough sample to cover a number of states, eight states in this case, and you can see them listed there. The margin of error is somewhat larger.

And four of these states -- Oklahoma, Texas, Florida, and Ohio, are ones that are suing the government in relation to the Clean Power Plan, so that going to be of special interest.

So in getting into the topic, we framed the issue not only in terms of climate, but also in terms of air pollution, and introduced the issue with a briefing, and then led them to assess an argument that says that it's a high priority to reduce air pollution.

Now, in your materials, there's the arguments. If you want to read them as we go along. I'm not going to read them now because that would take too much time. But overall, 77 percent say that it is a high priority, it should be a high, pardon me, they find convincing the argument that it should be a high priority to improve the conditions of thousands of people. Especially the elderly and children are suffering from the health effects of poor air quality and so on.

And here it's quite bipartisan too. One of the important things about the polling that has been done is that we are not finding any bipartisan consensus on it. Republicans generally do not support reductions in greenhouse gases.

The argument that it should be a low priority does not do very well. I should note that it's normal for both the pro and the con to be found convincing by a majority, so when it's less than a majority that's actually surprising because people are basically saying, oh, yes, that's a good point. Oh, yeah, that's a good point too.

And we think that's actually a good sign. It means they're actually deliberating. They're thinking this through. They're not just responding from existing biases. Obviously, the Republicans are much more persuaded by this argument that it should be a low priority to reduce air pollution, while the Democrats are not.

As you can see as you look at the States, there's no state where a really large majority says it should be a low priority. But in every state, you have a large majority saying it should be a high priority, or find convincing that argument.

And then when we ask finally the question, "How high a priority is it for you to reduce air pollution," 74 percent say that it should be at least somewhat high, and a bare majority of Republicans, so you'll see this again and again, Republicans basically roughly divided on this issue with Democrats being overwhelmingly positive, and Independents being in between, and large majorities in all eight states saying it should be at least a somewhat high priority.

Turning to climate change, we gave them an introduction to the whole issue and so on, and presented the argument. The standards argument that it should be a high priority to reduce greenhouse gases emphasizing the overwhelming consensus among scientists and the threat to greenhouse, to sea levels, and so on, and 72 percent found that argument convincing, including a bare majority of Republicans.

Now, what's interesting is that we tried another argument, which is that there is a real opportunity here for the U.S. to make a strategic investment in clean energy, and this gets 76 percent, a slightly larger number saying that this is a convincing argument, including 63 percent of Republicans.

Now, on the argument that it should be a low priority, the standard argument that there are some scientists who question whether it's actually occurring, that it would be premature economically to take costly steps, and so on, because that does do real well. Less than half, 46 percent, find that convincing, but two-thirds of Republicans do.

You see a substantial variation. I should mention that the top four states, which, again, are the ones that are suing the government, are also the most Republican. This is on a continuum here based on the Cook numbers.

Now, the other argument that we tested on low priority is that this whole effort to reduce carbon dioxide will result in an expanded role for government. Senator Inhofe wrote a book basically making this case. And that argument is better than the argument that it's too costly, or it's uncertain and so.

So then we ask, okay, how high a priority should it be to you to reduce greenhouse gases, and 70 percent say it should be at least somewhat high. Just under half, 44 percent of Republicans, overwhelmingly a majority of Democrats, and about two-thirds of more in all of the states.

If you compare them, you can see though that air pollution does somewhat better than reducing greenhouse gases. That's very clear. It's very salient,

particularly among Republicans you get a slight majority saying it should be a high priority that you don't get a majority on greenhouse gases.

So then we looked at the whole climate treaty, the Paris Climate Agreement that calls for the U.S., within which the U.S. adopted the goal of reducing greenhouse gases two percent each year. We explained how that all worked, and we presented the argument in favor of U.S. participation emphasizing that China and India are on board now. We need the U.S. leadership, and so on. And three-quarters found that convincing, including almost 6 in 20 Republicans, which is very interesting. And you see in all the states rather robust numbers finding this argument convincing.

The argument against it saying that, oh, it looks nice on paper, but we can't be sure that China and India and Russia are actually going to follow through, and so on, and you can slow the economic growth of the U.S., and so on. A slight majority, 52 percent, find that convincing, but a large number of Republicans.

So then moving to the Clean Power Plan, we explained that the main focus of the Clean Power Plan is the reduction of carbon dioxide. However, as mentioned, the steps needed to reduce carbon dioxide also result in the reduction of other pollutants that affect air quality such as nitrogen oxide, and sulfur dioxide. This is really, I think, quite key in how people look at the Clean Power Plan.

And the plan calls for each state to reduce carbon dioxide from power plants by two to three percent a year. It doesn't specify the exact method, but rather let's each state come up with its own plan as different methods may be easier and less expensive in different states.

Then we go into the cost of the Clean Power Plan, and the source of these are the U.S. Information Agency. The increased price of electricity will initially increase about three percent and after a while would come down. The slowing of economic growth, about one-third of one percent. The effect on jobs. There will be significant job losses in certain sectors such as in the coal industry, but then there will be

others gained in that there not be a major impact, though there will be major impact on some individuals.

We also then look at the benefits, the health benefits due to the reduction of soot and smog, and then we say from your perspective how valuable is this benefit. And 77 percent say that it is at least somehow valuable, including 64 percent of Republicans.

We then ask how valuable do you think that the benefit is that the Clean Power Plan will help the U.S. meet its goal from the Paris Treaty reducing greenhouse gases by about two percent a year, and 72 percent find that convincing, lower than those who value the benefit of air pollution. And here again, you get a very slight majority, 52 percent of Republicans embracing this as a value.

So we present an argument in favor of the Clean Power Plan. It's worth it to accept a slightly increased in electricity bills, and so on. And two-thirds find this argument convincing, including just under half of Republicans, and focusing on Republicans because they do some interesting dynamics while the Democrats are pretty consistent.

The argument against it also does rather well, 6 in 10, and the key argument is that this will hurt people with low incomes for whom energy costs are a big part of their expenses. And all these promises about the cost coming down in the future are just that, promises, and so on. So that does get a pretty good result even almost of the Democrats.

So here. Here is the key question now. Now that you consider these different perspectives, do you favor or oppose the Clean Power Plan? And overall, 69 percent say they favor it, including 47 percent of Republicans, 89 percent of Democrats.

In the four states that are suing the government, Oklahoma, Texas, Florida, and Ohio, you have about two-thirds saying that they support it.

We also got numbers from North Carolina and Michigan, and they were in the same zone. Those are two other states that are suing the government. They are though a bit, somewhat lower than the states that are not suing it, so there's some correspondence there.

And if you take all of the people living in all 24 states where the state is suing the government, 67 percent, and those states favor the Clean Power Plan as opposed to 71 percent in all the other states.

Now, there are really questions, but what about people who are working, or have somebody working in the coal industry, and you would think that would be a really key source of opposition, but it turns out to not be the case.

So if you or someone in your family has worked in the coal industry, 62 percent still favor it, which is less than all the others, but still a pretty clear majority.

I should mention too that young people are far more supportive. Eighteen to 24 years olds are 84 percent supportive while those over 65 is just 63 percent.

Now, one of the key questions I want to explore is mitigating the effects of the Clean Power Plan on coal industry, coal industry and workers. The idea of carbon sequestration, which we describe in some detail, is not very popular. Only 44 percent found that a good idea.

But adjustment assistance to coal industry workers, it's almost 7 in 10, including 6 and 10 Republicans. Now, what's interesting is that we took those who initially did not favor CPP and said suppose the government were to do one or both of these things, how would you then feel about the Clean Power Plan, and you get a nine point jump up to 78 percent, including 61 percent, up to 61 percent of Republicans.

Then we looked at different methods for reducing carbon dioxide and other pollutants over and above regulating power plants. So we looked at tax incentives,

credits for upgrading and energy efficiency of home and businesses. Very strong support. Three-quarters, including two-thirds of Republicans.

It's quite interesting that when you get away from the Clean Power Plan to actually methods, you get a much more bipartisan effect, quite robust, particularly when it becomes tax credits for (inaudible). Tax credits for new energy efficient homes, 78 percent, including 7 in 10 Republicans support in all the states. Tax credits for wind and fuels, cell, micro-turbines quite robust. Tax credits for bio gas facilities offered a 30 percent tax credits to farmers to help them build bio gas facilities has explained how all this works. 77 percent support, including two-thirds of Republicans.

Then we looked at regulations raising efficiency standards for cars and lite trucks. 73 percent overall, 57 Republicans quite consistently across the states, little lower in Texas.

Higher efficiency standards for heavy-duty vehicles, an important of American's plan with the Paris Agreement. Seventy-one percent favor, 56 percent of Republicans, 84 percent of Democrats.

Requiring power companies to use renewables. Three-quarters against favoring it.

Then replacing and regulating hydrofluorocarbons. Again, we explain the whole question about hydrofluorocarbons and how they're a very potent greenhouse gas. And very robust support for this. 77 percent. Two-thirds of the Republicans, 9 in 10 Democrats consistently across the states.

But lastly then, we look at the carbon tax. And this is not particularly popular. You had 51 percent favoring it. And so of all the different methods, regulation incentives are considerably more popular. And it's quite low among Republicans, 29 percent. They do have a good majority of democrats, and there's no state where you get really robust support.

However, we explored this question about it, Offsetting tax credit for people with low incomes. So when proposals used the income generated by a carbon tax to give people in low income groups an offsetting tax credit. And 60 percent support this idea overall. Only 40 percent of Republicans support it. Very high among Democrats.

But then we say, well, assuming that a carbon tax would include an offsetting tax credit for people with low to middle incomes, would you favor or oppose having the carbon tax?

And then 15 percentage points shift, and that takes it up to 66 percent in favor of the carbon tax. You still don't get a majority though among Republicans. It's still under, but across all states, you do then end up with a rather robust effect.

So after people have gone through all of these different methods, we then say, okay, now you have a sense of what's involved here, what are all your options, so let's come back to this question of America's goal of two percent a year reductions in greenhouse gases that are part of the Paris Agreement. And 71 percent say they approve of it, including a slight majority of Republicans, 52 percent.

It's hard to say exactly, because it's a different question, but recall that in the initial response to the Clean Power Plan, you had a 47 percent number with Republicans. The Dems, of course, are consistent throughout.

I should also mention that in terms of primary voters, because that's always a big focus, in terms of the Clean Power Plan, you had initially a 39 percent number favoring the Clean Power Plan, but when you, and these are for people who say they always vote in primaries, but with the mitigation for the coal industry or coal workers, it does get up to 53 percent among Republicans who nearly always vote in primaries, it goes from 55 percent up to 66 percent.

So if you'd like the full report, the questionnaire, and you can actually do the policymaking simulation yourself, which I think you'll find an interesting experience.

We were encouraging lots of people to do that, and then they can use it as a tool to communicate their recommendations to their members.

Thank you.

(Applause)

MR. REILLY: Good morning. That was a tremendously sophisticated, also encouraging to some of us, report, and obviously done in a way that lends it very significant credibility relative to a lot of polling that has been done on this issue.

I have to say that as former EPA administrator, looking at the fact that four-fifths of the country supports strong, or even stronger air pollution and water pollution regulations, it doesn't always feel that way.

And one has to hope that this matters enough to cause people to vote their convictions on the issue, which historically has been harder to do. I think this is a very convincing report, and deserving our understanding.

And polls do make a difference. I can recall in the 1988 election, Bob Teeter, a George H.W. Bush, then candidate Bush's pollster, informed him as he put it that every kind of poll that they were able to design indicated that the environment had entered the core values of the American people. That it was no longer a matter on which people went one way, and then the other way, went back and forth. Even through the Arab oil embargo, four-fifth of the people polled indicated they supported a maintenance of the Clean Air Act, but the energy industry was arguing against it, was arguing in favor of relaxation, or were in favor or strengthening it.

My own history in this is I am now a member of the board of Energy Future Holdings, the former Texas utilities, the largest electric utility in Texas. That's about 37 percent market share, heavily coal dependent. Also has a very significant amount of wind. Texas has more wind than anybody.

And I did the negotiation for the environmental parts of that purchase, which was the largest private equity deal in history, and I'm now deeply involved in the, as we say, the reorganization of the company, that is, bankruptcy.

A victim, an emerging power stated, a deregulated states of very low gas price. We went into it with gas at \$8.50, and it's now under \$3.00.

So that's by way of some background. I have some experience with how an electric utility responds to the Clean Power Rule.

The history of the Clean Air Act is a statute which was designed to involve essentially at Senator Howard Baker's instance, a large role for the states. He said in the discussions of the law this cannot be total federal exclusive regulation.

And so the structure essentially says state implementation plans will prepare their proposals to EPA. EPA will vet its work with the states, and then approve them. And I must have signed probably 50 of them in my time in office.

However, if a state does not wish to do so, or (inaudible) a state implementation plan that in the view of the EPA is unacceptable, the federal government has the power to issue a federal plan. And in some of those states that were mentioned, who are contesting the Clean Power Rule, that may happen.

There is a sort of two-layer conversation currently underway. The governors and the attorneys-generals of some of these states are complaining bitterly and presenting all the arguments they can find against the Clean Power Rule at the same time as the governor has quietly sent off their environmental regulators to have contact with EPA to determine how to make it work when it is finally sustained or something like it.

The negotiations -- I should say, I have filed a brief along with William Ruckelshaus, the first EPA administrator, to the court which will hear its arguments on the 27th of September on the Clean Power Rule.

And the brief that Ruckelshaus and I have offered is considered by the EPA lawyers to be a particularly important one, and one hope a persuasive one given that Ruckelshaus was the administrator who first had to interpret the Clean Air Act and then implement it. And I was the administrator who oversaw its amendment in 1990.

Now, in the process of deliberations on the amendments, the House manager of the bill, Congressman John Dingell, some of you may remember, very powerful congressman, Chairman then of the Commerce Committee, explicitly stated that nothing in this legislation shall be interpreted to authorize EPA to regulate carbon dioxide.

And the days when I went to law school, and most of my career since then, that would have been dispositive or at least extremely important in the interpretation of the authority of the EPA.

But thanks to Justice Scalia, it isn't. Justice Scalia believed very strongly, and his view essentially had become majority view in the Supreme Court that legislative history is totally trumped by the language of the statute. It must be the specific black letter language that determines.

The Supreme Court of the United States found in *Mass. v. EPA* that EPA had the authority to regulate carbon dioxide, but it first had to make a finding that carbon dioxide was a threat to the health, public health of the people of the United States.

It declined, EPA declined to do that during the George W. Bush administration. It did make that finding in the Obama administration, and the rest simply is consequential. It had to do something. And what it did was the Clean Power Rule. Why the Clean Power Rule?

When EPA previously had dealt with new power plants in a way that essentially made conventional economically remunerative coal-fired power impossible to cite in the United States by requiring carbon sequestration.

Texas Utilities Energy Future Holdings looked very closely at trying to do that in Texas because the company has a lot of coal. It was simply uneconomic. Well,

certainly, uneconomic in a deregulated state, but I note that the CEO of Duke Power was planning to do something similar in Indiana and finally dropped it when he discovered that to try to sequester the coal would have added something like three times to cost, and that is a regulated state, so one could theoretically put the cost into the rate base, but fun. You know, you can't ignore the cost which would have been very significant.

So that took care of existing power plants. They then moved, or rather, to new power plant citing. They then move to existing power plans. And we're talking about a very significant source of greenhouse gases, 40 percent or so.

Automobiles are in the range of a third. And the administration dealt with that when it opted and got the auto industry to agree to a 54.5 mile per gallon automobile fuel efficient by 2025.

That is sometimes not looked at very directly, but that is expected to result in a two and a quarter million ton per day, million barrel per day reduction of oil in this country. Very important and consequential determination which has to be reinforced or recommitted to every five years, and one very much hopes that it will be.

The Clean Power Rule is objected to on essentially two grounds. One, that it is excessive, makes an excessive assumption about the authority of the Environmental Protection Agency given that carbon dioxide is not a specifically enumerated pollutant. I think that this is a relatively weak argument. I think that the Supreme Court's previously holding in *Mass v. EPA* makes it pretty clear that having finally had a formal finding with respect to the public health impact that EPA is on pretty solid ground there.

The second essential objection has to do with whether or not EPA has transgressed into the economy, whether it has exceeded its pollution regulatory authority to essentially prescribe an economic future for the electric power industry.

This is a somewhat more plausible argument except that EPA has attempted to anticipate it by giving very considerable authority and responsibility to the states to decide how they propose to address the Clean Power Rule.

And let me step back for a minute and tell you how if you are being regulated by this rule, you will look at what it requires. You will see that, first of all, if a state like Texas, which is very hard hit by the rule, the reductions are very considerable in Texas, and, of course, then Texas has been one of the most vociferous complaining against this, the decision if when you look at your existing coal-fired power plants essentially comes to you as a question, well, and the Clean Power Rule is one of only many that EPA has been administering quite aggressively and successfully in the last few years. Mercury and sulphur dioxides, the conventional pollutant rules are all included.

Will we do all of the things that we are required to do under existing, non-clean power, non CO2 regulation which will cost for two or three power plants in the hundreds of millions of dollars, or will we move them to a schedule that will phase them out?

And if they are plants that have been fully amortized, the latter choice looks increasingly economic.

The reality of the trend in the United States, the intersection of economics with coal-fired power, is such that very cheap gas is making uneconomic a great many of the oldest coal-fired power plants. That is happening irrespective of the Clean Power Rule, and it is one reason that the timing of the Clean Power Rule is a very propitious one. It would be extremely difficult to impose a rule like this if gas were \$8.50, and the requirement essentially was to go from the cheap coal fuel to an expensive gas fuel.

That is not the situation right now, and by and large, in most of the country we are not short of power either.

So there is a sense in which the Clean Power Rule is riding the economic trend of electric utility regulation cost. And that is, I think, one of the strongest arguments for doing it now.

Finally, there are, as I mentioned, two important pillars to the United States policy and commitment on carbon dioxide and climate protection. One is the automobile fuel efficiency requirement that I've mentioned, and the other is the Clean Power Rule.

Now, even the United States which has a very good trajectory of essentially meeting the commitments that President Obama made in Copenhagen, we're more than halfway there thanks to the oil and gas industry, and thanks to fracking and the low price of gas.

What we proposed, 28 percent, I think 28 to 30 percent reduction by 2030 is indeterminate with respect to about a third of the measures, that is, we had not yet settled on, and many other countries have been even less specific and concrete about what they propose to do, that we still remain to have measures that that we were going to, we are going to have to undertake.

If the Clean Power Rule were to fall away, we essentially would not be even close to achieving the commitments were made so recently and with so much hope and excitement in Paris.

That's the nature of the challenge that we have at the moment. One looks at the upcoming election and the specific language of the Republican platform has to despair that the kind of public report that Steve indicated here and has found across the country, has not resonated with the Republican Party, at least in its current ascendancy, nor with the candidate.

But we have to hope that when the court hears this rule later in the month, they do, in fact, sustain it, and that we can move on to have a brighter future and a less disruptive one from the point of view of climate for our children.

Thank you.

(Applause)

MS. JONES: Just take a minute to get mic'd here. I think we alive once you've mic'd this, right.

Well, thank you both very much. That was both, I think, extremely information, and, Bill, as you said, somewhat encouraging, actually, to hear about both base level support, and how much it can move based on the introduction of innovative policy ideas and combining policy ideas.

I think we're into a very rich space here. Sometimes when you have a discussion about climate policy, or energy police, there's an abstraction between goals that are set on the one hand, and the reality of politics and economic on the other.

I think here we've touched already the extraordinarily diverse set of policy and political actors that have to navigate the space between energy and climate, whether it's the federal government, the administration, the congress, state government.

City governments, by the way, are increasingly playing roles in this we shouldn't neglect. Energy production firms, energy utility firms, and I think that often gets missed the way that energy utility firms are making investment decisions that have a substantial consequence in which energy direction we're taking.

And then, of course, citizens who are also consumers. That term gets blended sometimes. I don't like to blend that term. People make consumption decisions. They're also citizens, and those two things don't always align.

Nate, I want to start with you, and just --

SPEAKER: Can I just interrupt and say did anybody poll the people coming in? That would be interesting --

(Laughter).

MR. JONES: We try not to do that. Sorry.

SPEAKER: It's not randomized enough.

MR. JONES: But, Nate I want to start with you and sort of comment on anything you heard that strike you, but I'd be keen to hear from your perspective as

somebody who's been inside the, inside the administration recently trying to craft climate policy, how did you and your team think about the relationship between public opinion on the one hand, congressional opinion, which is not always directly informed by public opinion in this wider complex of actors, whose interests are at play as you're crafting policy.

MR. HULTMAN: Thanks. And I'd also like to thank Steve and former administrator Reilly for their comments, both of which were quite enlightening and heartening.

Let me cite one or two things first, and then, Bruce, to your question.

Looking at Steve's results, I think it's worth our pausing for a moment to understand and reflect on how shocking in some ways those positive numbers are given the discourse that we often hear around particularly the CPP, a lot of other dimensions of climate and energy policy, but also, obviously, our wider discourse in the country.

We heard a comment, actually, in Mr. Reilly's comments about how as we get to more detailed actions that we can have some additional support. The results that we saw that Steve presented, I just want to sort of note these again. He mentioned them, but I think it's worth thinking about this. Again, 74 percent on average in the U.S. in support or somewhat support greater activity on air pollution.

That's in some ways in our circles kind of expected. We know that people support actions for air pollution when it relates to public health. That's been a historical undercurrent of action on energy and climate and air. But what we haven't seen is the second thing that he said which was that we still have over 70 percent in his method that he used supporting action on climate specifically. So it wasn't directly linked to air pollution. It was related, but still very noteworthy, including, as Steve mentioned, over 50 percent of GOP support, and 67 percent or more by state.

So, in other words, not just looking at an aggregate in across the country that includes Democrats and Republicans, but also looking at the blue state/red state

divide and see, frankly, quite strong, and I again want to pause, surprising in some ways support for actions across these different categories.

So air pollution, yes, but also climate, also Paris Agreement, also some of the specific elements of delivering on the Paris Agreement here such as HFC's Vehicle Fuel Economy Standards, and others.

So I wanted just to kind of mention that this is a kind of surprising and positive result. I think it does have implications for how we as a group of people interested, first of all, in energy and environmental policy, but also thinking about the politics of these issues can respond and try to embrace some of those dimensions a little more.

Now, let me segue into Bruce's question after I've made that observation, how did we think about public opinion, congress, and other factors as we in the administration, meaning both White House and agencies were imagining how we would deliver on those promises, for example, the president made to hit a 2020 target in Copenhagen a few years back, and then as we were generating an idea for a new target that was delivered in advance of the Paris meeting last year. That would be for a 2025 target.

The answer is that it's kind of, frankly -- let me say this.

MR. JONES: We can go of the if --

MR. HULTMAN: Yeah, so there are certain, you know, so what I could say is that as we were thinking about what actions could be taken, we had to, of course, operate always within whatever regulatory authorities were currently existing, right, and that we thought would be amenable, that the agency thought would be amenable for regulatory action. So there had been, of course, activity under the Clean Air Act that would allow action on CO1. We've heard of a good historical overview of that earlier in the session. So because of that, there was some confidence that the EPA having done a, frankly, very robust consultative process across all the states, across all stakeholder

groups, and multiple meetings, and it was just, frankly, for those of you studying governance, I think this would be an interesting area to look at is the consultative process that EPA ran which was, frankly, quite deep, quite broad, and quite thoroughgoing.

That allowed EPA to gather a lot of information about what sort of would be the appropriate level of action, what would be the appropriate methods of action, what would be the appropriate ways to have the states have flexibility to deliver on the targets that EPA put forward.

And as a result of that, I think that in some ways we can't divorce that consultative process, for example, from the fact that we are getting some, frankly, positive results on CPP. In other EPA designed it so that it would be a reasonable regulation that people would find it a fair approach, and one that would actually be in our collective interest to undertake.

So I think that's a good example of how public and broader stakeholder groups were involved in the thinking of the administration which was, again, through the agencies primarily, but, on the other hand, certainly as we were thinking about how we could aggregate different regulations, that was sort of a question of looking then across different agencies and what they could then deliver with their existing authorities.

MR. JONES: I want to bring Adele in. Comment on anything you've heard, but I do want to get your reaction. I was watching your body language as Steve Kull introduced the finding on carbon taxes which were the lowest public support of any of the measures that he has addressed, and you've done a lot of work on the potential efficiency of that approach.

So maybe just comment a little bit on that tension between the efficiency of that approach versus public support.

MS. MORRIS: Sure. And thanks so much, Bruce, for instigating this even, and to our speakers for the very interesting poll results, and your comments, and those of Nate, who is always a pleasure to have back at Brookings.

Full disclosure, I am very loosely affiliated with the Clinton campaign. I gave them some advice about how to help poll workers. I am here today speaking totally in my Brookings capacity, unaffiliated whatsoever with the campaign or any of their policy discussions.

I think it's worth just reviewing what you, Bruce, first said at the outset of what is at stake in the election now, because, really, it's hard to find a set of issues that's more contrast across the two different parties. And I think it's important to say that even as Steve has shown us that there is substantial support for reducing air pollution and pursuing the Clean Power Plan, or adopting other measures.

Very much at stake is whether or not the federal government will continue down that path, and that's not just with regard to supporting the Clean Power Plan through its current litigation in the Supreme Court, but also, you know, whether the next administration would enforce that regulation even if it's upheld by the Court, and what the timing and rigor of enforcement of the state implementation plans, what kind of laxity might be offered with regard to what is in those state implementation plans.

Certainly, the next administration will have lots of latitude about what future regulations under Sections 11 B and D of the Clean Air Act, the White House and EPA would pursue.

There are a lot of other dimensions to climate policy as well outside those Clean Air Act pollutants (inaudible), and that includes what we think the actual social cost of carbon is. That's under the control of the executive branch, and one can imagine a revising of that process.

And there are other federal authorities that come into play. There's this whole review of policing policies at the Department of Interior, other rules that also have climate benefits, and we know there are a lot of co-benefits between CO2 emissions, and air toxics, and particulate matter in the way.

And there's also the leadership role of the United States in the international agreement. I think we would see very different paths forward in the international dialogs. And having worked in the federal government when President George W. Bush withdrew the U.S. from the (inaudible) Protocol, that was quite an international incident, and it had, I think, far-reaching in our relationships with other countries.

And so I think that there are some real downside risks in disrupting the U.S., the productive U.S. role in those discussions, and it's not just under the (inaudible) Convention. It's G20 processes looking at fossil subsidy reforms, and potential carbon pricing agreements there.

And then, certainly, the new administration will be very influential in whether there are any prospects for new climate relevant legislation. And all of that will run down to the effects on investments in the economy in new low carbon technologies, and I'm convinced that the U.S. economy will be, or could be, the crucible for the development of low cost, low carbon technologies that will be available around the world to reduce emissions not just here at home, but also abroad.

So there's just a tremendous amount at stake politically, economically, and environmentally, and all of these things.

So to your question on -- I guess I will speak to my reactions about the results of the polls. And, again, thank you for that very good result. Very interesting result.

What we've learned, I believe, in these polls is that people really care about the tradeoffs involved in the policy design. Are we hurting poor people, or do we have ways to keep them harmless? Are we hurting coworkers, or are we going to invest in a brighter future for them as part of our initiative to protect the environment?

I think people are rightfully a little distrustful in big, new government programs that might squander resources, or impose a cost-and-effective limitations. And

so I think a key to bringing the public along in any policy, whether it's regulatory or carbon price, is to reassure people that it can be fair, it can be efficient, it can be effective. We're actually doing the benefits that we say that we're going provide, and we're not doing it in a way that makes people worse off, or we're making it as pro-growth and fair as possible?

And I think that that's a real lesson in how we talk about carbon taxes. I'm convinced that, you know, I know, we all know tax is a dirty word in some circles, but if you really look at the environmental benefits that a proper carbon pricing policy can achieve, that can go a long way to making people feel like it's an investment that's worth it, and, you know, you add on the assurances about how the revenue is used.

One of the concerns, I think, that is growing about the Clean Power Plan is exactly how environmentally effective those targets are going to be. So we're seeing that as gas prices stay low, natural gas prices, we're already seeing amplification of the switch from coal to natural gas. So what this means is that the emissions caps in the rule are increasingly already being achieved by market forces, and some of the dynamics that you talked about.

So that means the incremental environmental benefits embedded in the rule are shrinking because the baseline emissions trends are changing, and we're lowering emissions without any policy. Therefore, the caps are less binding and (inaudible) gonna be.

And so I think that as we go forward, we're going to have to measure effectiveness not relative to what used to happen, but what would happen without the policy. And there, I think carbon pricing is undeniably likely to be far and more environmentally effective, and I think that's going to have to be part of the discussion if we're really going to have measures that go anywhere towards achieving Paris

MR. JONES: Great. Bill, I want to pull you out on something that you said that really struck me. The normal narrative in this discussion is that high oil prices

would drive investment to renewables, and low oil prices might lower the (inaudible) for that investment.

You told a very different story from the perspective of the utilities where inexpensive gas made implementation of the Clean Power Plan much more viable than (inaudible). Can you just elaborate on that because it strikes me as quite an important understanding of the economics of this from (inaudible) perspective.

MR. REILLY: If you are (inaudible) electric utility and you have a choice, you have coal-fired power, as some of you may know that when the Clean Air Act was first passed, a lot of very dirty coal was essentially grandfathered in on the theory that obsolescence would take care of the problem and they would be phased out over time.

Well, they've been consistently upgraded in Illinois, Indiana, Ohio, and other states. They're still around. And clean power is having the effect of causing the utilities to obsolesce more coal-fired power than the market would, because it still could be profitable to maintain those plants were it not required under the Murphy Rule, and related rules to upgrade them very significantly even in the absence of clean power.

But clean power really does provide a deadline. It provides a statute. It provides an either mask based on rate production limits on CO2. So something is going to have to be done by clean power that would not in some case be done on the same time frame at existing coal-fired power.

Coming back to the polling data, I have had conversations with members of Congress, Republican members of Congress who have said to me, you know, there are a hundred members, Republicans in the House who fully get funded but are constrained by their districts, and they're concerned that they will be flanked on the right by Tea Party or Evangelical figure who commands support sufficient to knock them out.

And it does strike me that taking the analysis by segment of the population. Steve and I have talked about this. I think he's more encouraging about the direction even among some of the groups that the members of Congress cite to me as

important to their constituents for having opposed, for example, Waxman-Markey, the bill that was proposed to (inaudible) to pass to regular carbon dioxide. Somehow, we've got to, and I think one of the most important parts of this might be to communicate what you're doing here today, Steven. Communicate the results of this poll which suggests that it may not be as dangerous as one might have thought. And to extent that you can communicate these issues in the districts, because so many of the members, Democrats and Republicans alike say, well, you know, we may have convictions one way or the other, but we don't get questions when we go home for Christmas or Easter vacation. We don't get questions about (inaudible), and we don't get questions really much about pollution so that although it's something that is maybe in the core values as Titter used to say, it's not one that currently is salient in the sense of influencing a ballot box choice.

MR. REILLY: Just building on that, it is important to note that among the hardcore primary voters, there was not majority support for the Clean Power Plan, and it was just 39 percent support.

However, when you talk about mitigation, or you talk about the different methods that can be used, tax incentives, regulations and so on, they kind of evolve towards it. They get comfortable, and you do ultimate get majorities. But there's a kind of initial response.

It's also very interesting how many, how many cases the argument against taking action did better than the argument in favor it among Republicans, but then in the end they were kind of divided about it. So obviously, you see signs of real conflict among Republicans, and particularly among the hardcore primary voters.

So it's not surprising that they are, you know, because that's the main signal that members are paying attention to. And what this says is not that you're wrong about that, it does tell you about something broader in your public, but it also tells you that even those people who have a kind of initial suspicion of the idea, when they get

more information and when they get more options for addressing concerns, they do tend toward, tend to evolve toward support for it.

MR. JONES: And I'm just going to ask a final political question to both you and Nate, and then I want to turn to (inaudible).

So the question to you, Steve, is how do you do that at scale? You're doing this for the fairly targeted group, and you're walking them through a series of propositions, and you can watch the evolution, you can introduce ideas, et cetera, but political conversations don't happen that way. They happen in much cruder terms.

So have you given thought to how that conversation can happen at scale with the American public?

MR. REILLY: Well, that's not my, what I would hold that as my field of expertise as much as obviously key people who are trusted are central. And who create a context that's deliberative in the sense that they're thinking through pros and cons. Getting information. Going into a reasoning mode.

And what we see is that when people do that, then they tend toward evolving toward trying to solve the problem. It's not that they don't think climate is a problem. It's not that they don't think air pollution is a problem. But then are concerns about costs.

The more people deliberate, the more they tend to try to find a solution, and so it's all about creating a deliberative environment where people experience the tradeoff, where they have confidence in the information that they're getting, and that they're not just being spun, and then they turn toward to try to solve it and come up with a constructive solution.

MR. JONES: So not the modern American political and media system?

MR. REILLY: Yeah. Yeah. I guess you are right on that.

MR. JONES: So, Nate, same question to you. How do you do this conversation on scale, but with a twist? I won't name them because he said it to me off

the record, but a cabinet level official of the Obama administration once said to me, recently said to me before we knew the results of the Republican primary, I will stress that, that he was in his gut hoping the Republican could win because he thought it was more likely that a Republican could pull the country to climate change because of the kind of Nixon to Chino phenomenon, right, kind of this if a Republican were making the case for a pro climate approach there were a lot of people in Congress who would --

MR. HULTMAN: How did that turn out?

MR. JONES: That's what I said. Before he knew the results of the Republican primary

But I'd just like you to reflect on those dynamics of who's trusted on this issue. How that bears into the public conversation.

MR. HULTMAN: Thanks. I agree this is really a key question given Steve's results, my initial comment about, wow, this is interesting read on politics, on sort of what opinion is out there, again, not just in aggregate, but also the heterogeneous opinion across the country for different groups, GOP, for red states, et cetera, there is some heartening sort of heartening information there, and then the real question is how does that happen to sort of aggregate it to a natural set of policies that are delivered.

I don't have an answer to that, so I will make my attempt to pull out what I think are interesting features from Steven's analysis, how the interact with stuff we already, and what I can imagine might be sort of paths forward.

Let me say I'm not sure I'm going to weigh in on the Republican strategy for the presidency, but let me comment on the kind of options, sort of, that come out from that question.

What we know from Steve's research is that there is this kind of interesting politics around not only just Clean Power Plan, but other dimensions of clean energy, air pollution, and climate. So that's something just to note.

A second piece of that is what we already know. We do already know that a lot of people in the United States respond to say, look, if the regulations are protecting the health and safety of Americans, that's good. If regulations are protecting the poorest from unreasonable sort of intrusion, that's good.

We know that people value environmental amenities of various kinds, so that that's another dimension that these feed into. So health is one of them (inaudible) as Adele mentions is another one, particularly for specific groups like coal miners, low income, et cetera.

People respond well, and I think this another dimension of the story here that's being told in various ways that there is a clean energy story here as well as a kind of sort of phasing out of coal story, and the clean energy story, as Adele mentioned, is a positive one that says, look, we are an engine of innovation in this country. We can and will deliver a lot of the new technologies that are necessary to realize the goals that were put forward by our own country in advance of Paris, so that's something that people do right, and that fits in well with Steve's results as well in terms of a narrative connection.

And finally, one we haven't really talked about that much today but I think is also important, it is also changing in U.S. politics, which is how people understand the impact of climate change, and there's been a lot of work since Hurricane Sandy, for example, to bring different groups in to respond to the impact of weather events and climate events.

Those are people that don't necessarily have an iron in the first stake in the game with energy. They're just sort of first responders. They're people in local communities. They're water managers. There's a whole other group of people who are interested in avoiding the negative impact of climate change, and that story is also connecting, I think, well with people.

So let me say that those are sort of some specific points on which Steve's results clearly connect into how to reach different audiences in this broader politics.

And then the final thing I'll say is how do we connect that then to political action in Congress or in the White House. Certainly, having somebody in the executive branch who's an advocate and a leader on energy and climate is going to be able to push some of these ideas on the four elements that I highlighted: the energy, the economy, the health, and the impacts, right?

So those four things require leadership, and that leadership could come from the Republicans. It could come from the Democrats, theoretically. This election, I think, there's, you know, we have certain choices that are going to be more and less favorable to those, to that leadership that I just highlighted.

But I think it's also heartening to look at beyond just the presidential election. There are things happening in individual states, and there are groups like Bob, led by Bob Inglis, who runs that kind of whole Republicans for Climate kind of narrative and approach that sort of says, look, there are conservative approaches to addressing some of the problems we've identified. That's all welcome. That's all a positive constructive, and, you know, people in their own political context can then, I think Steve's results indicate that, can actually find ways that they can grab onto these problems and say, look, we can offer solutions on this. This is not just a single party's problem. It's all country problem, and we all have our different angles on how to solve it.

MR. JONES: Great. So let's open it up to the audience. Ask a question. Make a comment. But do so by giving us first your name, your affiliation if that's relevant, and letting us know who your question is posed to.

So start in the middle.

MR. MASSEY: Thanks. Kevin Massey with (inaudible). Thank you for your great presentation. It's very insightful information on public opinion.

My question, actually, is not about public opinion because the Clean Power Plan now it seems is not about public opinion. It's about courts and what the courts think.

The question is what happened the day after. If the courts find the Clean Power Plan to be unconstitutional, what is plan B for the U.S.?

And a question about the international implications if the Clean Power Plan is struck down, it was mentioned earlier that is there likely to be an echo or domino effect in international climate commitments.

Thank you.

MR. JONES: Do you want to take that one and--

SPEAKER: Yeah. A lot of thought has gone into analyzing what might happen if clean power is not upheld. There is a consensus, I think, among people who both support and oppose the Clean Power Rule that if it is struck down, it will not be struck down in all of its components.

That is, that it's a complicated rule. It offers a whole menu of possible approaches that a state can take. It can combine with other states. It can engage in trading. There can be a, very like what we did in the Clean Air Act with sulfur dioxides which was you can trade back and forth to get the reductions to take place at most efficient place, the place where the cost least.

And a lot of those provisions are likely to withstand attack. In other words, the Supreme Court, or this is clearly headed to the Supreme Court, the Supreme Court is not likely to say zero, noting, I mean, not after the finding they've already, the finding that EPA has made that, in correspondence to what the Supreme Court requested, is it a threat to the public health?

Well, if it is, and they are definitive on that under the statute, something's got to be done, and several of the things in the Clean Power Rule were drafted, were

conceived, Nate can reinforce this, I think, in a way that would make it, would give it the maximum possibility of important pieces of it surviving.

If it's a question of having made insufficient provisions for states, well, that's not terribly complicated. I mean, one could make more. One could give them more time. One could provide, I don't know what more options they can have, but one could think that way. One could give more credence to the role of renewals, and have a more patient trajectory as renewables begin to make more of a difference in our economy. Thus far, they haven't made that much difference, although I would point out that two-thirds of all of the solar built in the United States last year was utility grade solar. That's a very significant development from recent years, and suggests that solar is in those states where they're building big pieces, bit parts of it, commitments to it, it's actually cost effective.

So that would be my sense. Now, the rule is being heard on Bunk, that's all of the justices of the Court of Appeals. So I'd be very surprised, and people who know more about it than I do would agree that the entire rule could be struck down.

MR. JONES: Anybody want to add quickly on that?

MS. MORRIS: Yeah, I would add, you know, I think we're going to be looking for other climate policy approaches whether or not the Clean Power Plan goes forward in its whole or in part.

I mean, it's an extraordinary effort by EPA and Obama administration, and my hat is off to the folks who worked diligently for years to get the rule out in its final form, and I know that this whole litigation process is yet another hurdle they're dealing with.

But I would just point out, this is a very protracted process, and this is one sector of stationary sources in the American economy. We got a lot of other omissions that are going to be regulated, and we're going to have to ask ourselves do we want to use the same authority that goes sector by sector, state by state, cap by cap? Is

that really how we want to address this problem given that it's subject to whatever priorities in the White House pertain at the time? There's all this litigation, and we know that these caps can be superseded by baseline trends. We're seeing that now.

And within this authority, there is no tool for redistribution to help low income households who are affected by the regulations. There's no tool to help poor workers. There's no revenue in this regulatory approach that the federal government can use to help those who are disproportionately burdened.

It's always been, frankly, to me a lousy diplomatic tool. Really? That's a promise we're going to have states implement these regulations? We'll be lucky by the mid-2020s to have the states already with other sips and view, and moving their emissions down, and that's the best we can do right now internationally to say we're going to hit these ambitious Paris targets?

And there's no tool to address any of the concerns about the competitiveness of the American economy when we regulate our CO2 emissions vis-a-vis those countries who are less ambitious than us.

So I think there are going to be a lot of reasons notwithstanding the terrific work that the White House and EPA put on this rule to think about policies that are more effective, offer these tools for important objectives related to the distributional outcomes and the competitiveness outcomes.

And the thing is, even if we do the Clean Power Plan, the rest of it is all left to states, and if we don't have new federal authority that's coherent and consistent, we're asking for a hodgepodge of state initiatives that it's going to be that much harder for businesses to comply with and for us to use as a negotiating tool.

So I think we're going to have to look beyond the existing authority at some point sooner rather than later regardless of what happens.

MR. JONES: More questions? At the back. We'll take a couple actually. We'll take three and the we'll come back. Yep.

MR. GOTHMAN: Yeah, I'm Ethan Gothman from Sustainability Science Practice and Policy.

I wanted to ask about the carbon tax, and the reason for the opposition because I kind of get the impression that when you give people information, they move in favor of regulatory policies, and I'm kind of wondering how you would compare this poll with other polls where people were not given background information.

But the background information didn't seem to move people as far as the carbon tax, so I don't know if you have any idea as to why or whether more educational efforts on the ground would, because all the experts think the carbon tax is the best way to go, right, so --

MS. MORRIS: Yeah.

MR. GOTHMAN: -- how to close that gap whether that's educational or philosophical --

MS. MORRIS: I can give you a few thoughts.

MR. JONES: I'm going to take a few questions --

MS. MORRIS: Okay. All right.

MR. JONES: -- and then we'll come back.

MS. MORRIS: I like that question though.

MR. JONES: Yeah, you can take that one.

Go ahead.

MR. WACHMAN: My name is Al Wachman. I'm retired from the World Bank. Thank you all very much for very interesting material.

With regard, respect to this rather interesting and maybe encouraging survey, I really wonder if any of you have any sense of how public opinion is evolving, or has evolved, or may evolve in the future? I wonder whether it might be a little bit like the attitudes to gay marriage that are very much generationally linked and have changed quite dramatically in a pretty short space of time? So if anybody could comment on that.

And then if you might want to do a little political forecasting, maybe beyond this election, but given that carbon taxes is, Adele keeps making the case, is the way to of you really want to squeeze out the carbon at a rate fast enough to avoid calamities in 50 years, or 20 years, or whatever. What kind of timing would be needed to get the political context to pass carbon tax legislation and get the other major countries to do the same?

It seems to me if that doesn't happen in the next 20 years there's gonna be a lot of hell to pay. So if you could, you know, what's gonna bring that constellation together with public opinion and political decision-making?

MR. JONES: Lady with the laptop. Over on the side here.

MS. GRANT: I'm Anna Lee Grant from S&P Global Mark Intelligence.

Considering the court case and opposition to the Clean Power Plan is very much at odds with the Obama administration's climate policy and international commitments, I'm wondering if that legal battle, specifically stay of the rule, has done any damage to the United States' international reputation.

Like what are the countries saying about the Clean Power Plan battle, and are they worried that the U.S. won't be able to follow through already?

MR. JONES: So there are a couple questions go through dark arts of politics, a couple of substance in law, and the international dimensions. So let's just go down the panel and --

MR. KULL: I'll take the last question first. Very definitely. In fact, the United States sent someone to China to explain that this was ordinary business. Not to worry. We were still on the course of keeping the commitments we have made. And I myself had a meeting with the negotiator before that, before Paris in China and Beijing, and the first question he asked me was to what extent can we assume that the commitments made by President Obama will survive him in the next administration. So

they are laser focused on all of this, and it will be very big and distressing news if it's not sustained.

On the tax issue, and Adele will probably want to get into this, my sense is, I co-chaired the National Convention on Energy Policy along with Trent Lotts, Senator Byron Dorgan, and General Jones some time ago.

Every economist who spoke to us touted the advantages of carbon taxes likely to be the most efficient avoiding bureaucracy and all the rest. And everybody who had any experience in Washington said you come out for a carbon tax, nobody will notice anything else in your report.

And when I had press conferences asked if I had been surprised by anything, I happened to mention I was surprised that the two oil company representatives, Anadarko and Exxon Mobile, were actually the most enthusiastic supporters of some kind of carbon tax.

And I was told later that the email traffic just exploded from the Hill saying that no way there was going to be serious consideration of the carbon tax.

So politically it's very difficult, is probably a nonstarter right now. There is the experience of British Columbia which has been a pretty positive one. It's worked pretty well there.

There's also the experience of California which did what we did in the Clean Air Act with sulfur dioxide. They had the cap and trade program.

Little discouraging to see that the cap and trade program when they had their options they got \$3 billion of revenue from those options, but what did they do? They spent 50 percent on investments in rapid rail, fast trains, and 25 percent on environmental justice, and nobody can quite find out, you know, how that benefitted or where it benefitted the climate.

In other words, there are some, those of us who have watched it closely had some reservations about how that worked, and it may be that your point, or Adele's,

is correct that a cap and trade has more avenues towards manipulation and special interest didn't work that way in sulfur dioxides, but carbon dioxide is a much more inclusive kind of pollution.

So probably in the long term, a carbon tax might be best, but one shouldn't make the perfect the enemy of the good, really? What we have right now is clean power, and I differ with Adele. I think clean power is a very positive and significant piece of legislation in itself, and one thing at a time. To have tried anything as expansive as she described would have required a statute, and there just was no possibility that the president would get Congress to go along with anything with, you know, redistributive effects, and tax, and all the rest of those that have been desirable.

MR. JONES: Adele.

MS. MORRIS: So probably as the resident supporter of the carbon tax, here's a theory of change that I think make sense even given the poor results from (inaudible) here.

I don't see appetite for stand-alone climate legislation pretty much of any kind whether it's tax credits or anything else. So, really, the idea of how do you embed a carbon tax into a broader fiscal reform because both parties' talking points of success whether it's lowering corporate tax rates, or increasing infrastructure spending, or grants to states, or lower income household benefits, you know, there are a lot of dials you can move when you're talking about this kind of revenue that I think can grease the wheels of a deal.

And so I'm actually pretty optimistic about that. And I realize what the public rhetoric is, but if you have a -- you know, in my private conversations with Republicans, there is an increasing awareness of the political liability of their current position on climate, and the need for a more positive agenda. And given the vilification of EPA and its regulation, I think their positive agenda is gonna look something very market oriented.

A couple words about the tax credit thing. We did some modeling on tax credit for energy efficient household capital, and we compared it to a policy scenario of the carbon tax that had the same fiscal footprint, and we found that the carbon tax reduced emissions by 22 times more than the carbon, than the tax credit for energy efficient household capital, and there's a whole raft of reasons for that. You can see my paper in the Energy Journal.

But the point being that I think the public has to grapple with what is going to be effective. Yeah, you can have this subsidy, or this dog and cat program, but the question is what is the policy that's actually gonna reduce emissions in a meaningful way at the least cost and fairest approach for society.

And, you know, at that point I think the experts have a lot to offer to this discussion to bring the public along. And just to be clear, this is not the only policy area in which we have this challenge between what experts and people who's really studied this think is effective and reasonable, and where the political discourse is.

So we've got this challenge in climate and other areas, and I think like that's why I work at Brookings. Right? This is what we do is to try to contribute to this dialog in a positive way, and provide substance to what is otherwise sometimes a pretty polarized and almost vacuous debate. It really should be the role of us to help bring the public and policymakers along to show what the literature really says, and what could really work if we do it right.

MR. JONES: Nate.

MR. HULTMAN: Okay. Two brief notes. One on the near term, and one on the medium term, and I'm going to try to integrate answers to a couple of the questions here.

A couple of the questions were on how the CPP relates to our target in the near term in regulations versus tax. It's important to remember that CPP is a key

element of our approach to climate change in the near term, meaning, to 2025 or 2030, and that's the near term for climate planning.

There may well be stuff after that. Let me return to that in a sec. In the near term, CPP is very important, but also remember electricity sector is about only a third of our overall U.S. emissions. It's about a third from transportation, about a third from a lot of other stuff.

And the administration, in fact, even predating, this administration has been working on things like energy efficiency standards for, in fact, up to decades if you (inaudible) the data that helped to steer our projectory downwards to kind of reduce the amount of emissions we need to use, need to produce, to generate our economy and to kind of deliver the services we need.

So this administration has been taking very much a portfolio approach. CPP is one of the elements of the portfolio. There are many other regulations that have been promulgated under this administration that will, in fact, be sticking, that are very hard to undo because they are part of regulatory process, a robust process, in our country which any countries, frankly, don't understand on the outside, but we've tried to keep communicating to them about how this process works.

So that's part of what we were doing in advance of Paris, and it's important that we keep doing that communication.

Regulation, by the way, can also produce relatively good reductions in the near term. They're different from a tax, they're different from a pricing approach, but can also produce rapid reductions that's similar to or potentially even faster than a near term tax approach might be.

Now, that said, it's good that people like Adele are out there waving the flag for taxes because there are certainly pricing approaches that will probably be needed in the medium term, so the near term approach is good for now, but I think that we do need some changes in the medium term.

I want to just briefly address the politics question. I think there are some other way to success in the medium term on the politics. The ones I mentioned before are definitely at play. I think you're right. Politics are always unpredictable. I do think, frankly, that if you look at the polling there has been increasing support for action around climate related agenda items, so, again, not the big picture, but on the small picture elements there has been increasing support.

And one of the important things to know which we haven't really linked today is that delivering reductions in the near term both in the U.S. and globally helps deploy new technologies. It drives down cost for those technologies. It makes ambition in the future, frankly, easier. Doesn't make it easy. It just makes it easier because the cost for solar drop, the cost for wind drop, the cost for other technologies drop as you deploy.

So getting the deployment out in the next, you know, near to medium term through the regulatory process or whatever portfolio we can deliver is a key element to insuring that the politics support more ambitious action down the road.

MR. JONES: Steve, final word.

MR. KULL: On the carbon tax issue, the question becomes repeatedly with the public is where's the money gonna go. They want to see earmarking, and just about any earmarking approach makes, brings them on board.

So the public is really not the source of the problem. The source of the problem is that there is a very strong ideological position on the Hill about any kind of increase in taxes going back to Grover Norquist, and so on, and the pledges and all that.

So a lot of members have made this pledge, and so there will be no increases, and that creates a lot of, a lot of trouble. It's not, it's surmountable vis-a-vis the public that they have questions. Some of the earmarkings have been directed funds to highways, or directed funds to dealing, you know, with anything related to the environment, or offsetting the impact on low income people because they are concerned

about it being regressive and so on. So their concerns can be met. But the tough thing is the ideology on the Hill.

There was a question about how things are evolving on this. Now, it's kind of, not easy to explain because there is, when climate first appeared as an issue, there was, oh, okay the scientists are saying that, yeah, something needs to be done.

And then their people encountered or heard all these doubts. Oh, maybe it's not real. Maybe it's not really happening.

And that sort of, the public has this reaction when the grownups are fighting to just sort of back off and wait until they work that out.

And there is still a pretty widespread perception that there isn't a consensus, and the perception that there is a consensus is a big predictor of support for action.

Now, that doesn't mean that there are a lot of people out there who don't believe in climate change. And there are some questions where you can ask people, you know, should we act based on that assumption, and they say, well, we should wait 'til we really should.

But the number of people who go I really believe there's no such thing as climate change is about 4 or 5 percent.

So basically, confusion questions get injected into the discourse, but you see though with time, it tends to decrease the effectiveness of those challenges, and then there's a kind of renewal of those people go, well, it didn't go away. People are still talking about it. Maybe there really is something.

So the real question to look at is are people ready to take action. And even people who say, well, I'm not sure it's really happening will say, well, okay, let's take action because it's a risk. You know, if we don't take action, it could be a real negative long-term effect.

Now, one other thing that people, that politicians focus on a lot is intensity. They note that you give people, you know, ask people what's the most important issue on your mind, you know, climate change hardly ever comes up. And if you give people a list of even environmental issues, climate tends to be pretty low, intensity quite low.

But that appears to be changing. You do now see these trend line questions that Gallup has been asking. You now have climate right up there kind of in the middle ever since, recently the concern about drinking water is at the top of the list, but climate is really up there with general air and water and rivers and things like that. So there you do see some evolution.

But I want to come back to what I think is really the key point which is the public is not the problem. The public is amenable. It's receptive to the information. It's concerned. Is it out there? You know, do you see a lot of people marching the streets? No. So it's something that is going to have to be worked out from the top down.

But we see receptivity, and I'd saying growing receptivity to the sense that some action does need to be taken, and a willing to accept some costs, and when the costs are presented to them, they go, oh, that's not so bad. They hear about horrible costs, but when the actually, when its quantified for them, they go, oh, that's not so bad.

When you ask them straight up, what are you willing to accept as an increased cost of energy, people say things like \$20, \$25 a month of increase energy cost which is way beyond anything that's really in the picture right no.

So there's the, I just come back to the key point. The public's not the problem. When they're introduced into it, they truly deliver the environment where there's not just screaming and yelling, complaining, but where people are thinking through the options and costs and benefits.

MR. JONES: Quick question for information Steven. You said 4 to 5 percent of the public does not believe in climate --

MR. KULL: I don't believe it, right. Weathermen, weather forecasters, and farmers have been polled, and have said, well, they fully, they deal with the weather all the time, they depend on it. They fully get the kind the climate is changing. They don't believe necessarily in majority numbers that humans are having any influence on it. Do you know what that number is?

MR. HULTMAN: Yes. That's something that been injected into the discourse, and it's kind of peculiar because if you take some poll questions, you go, oh, that's, you know, if you say how sure are you that humans are causing this, or that it's not some kind of natural thing, and people aren't really sure.

They don't have a crystalized conclusion that it's not.

MR. KULL: So there's no hardcore statement that it's not humans?

MR. HULTMAN: The number of people who really believe that it's not, that there nothing, there's no human factor is small, but there are a lot of people who go, gee, I don't know. Maybe. Maybe we shouldn't, that kind of lessens my motivation to take action. Yeah. So it does produce a kind of interference effect in terms of people crystalizing, right, but it's not the crystalizing support for action.

But it's not really crystalized in many people. There's so many people who will say, well, probably it's more nature than humans, right, which is a poll question that's (inaudible).

Those same people will say, well, it's, yeah, let's take some action. Let's reduce greenhouse gases. Why? They don't know, and it's a gamble. Right?

And so as insurance, yeah, let's take some action. So the idea that the public is divided into those who go I don't believe that it's real, or I don't believe it's human causes, therefore, I don't want to do anything, right, that's a very small number.

But you can construct a number. You could take this question and that question, and create the impression that it's much bigger than it is because most people it's I don't know, and given the uncertainty, I'm willing to takes some steps of limited cost, and the kind of costs that are being presented in the context of something like the Clean Power Plan do not look unacceptable to most people even if they're not completely sure that it's a problem.

MR. JONES: Well, I'm very struck by it. I'm struck by your conclusion earlier, or your observation earlier that a lot of the public will wait for the, as you put it, the grownups to reach a consensus. So now all we need is some grownups. I think we'll be in good shape.

So thank you for this. Thanks to my panel.

(Applause)

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