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OVERSIGHT HEARING: EXAMINING EPA'S PROPOSED CARBON DIOXIDE EMISSIONS RULES FROM NEW, MODIFIED, AND EXISTING POWER PLANTS

HEARING

BEFORE THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS UNITED STATES SENATE

ONE HUNDRED FOURTEENTH CONGRESS

FIRST SESSION

FEBRUARY 11, 2015

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OVERSIGHT HEARING: EXAMINING EPA'S PROPOSED CARBON DIOXIDE EMISSIONS RULES FROM NEW, MODIFIED, AND EXISTING POWER PLANTS

WEDNESDAY, FEBRUARY 11, 2015

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
Washington, DC.

The committee met, pursuant to notice, at 9:03 a.m. in room 406, Dirksen Senate Building, Hon. James Inhofe (chairman of the committee) presiding.

Present: Senators Inhofe, Vitter, Barrasso, Capito, Crapo, Boozman, Wicker, Fischer, Rounds, Sullivan, Boxer, Carper, Cardin, Whitehouse, Merkley, Gillibrand, Booker, and Markey.

OPENING STATEMENT OF HON. JAMES INHOFE, U.S. SENATOR FROM THE STATE OF OKLAHOMA

Senator INHOFE. Let me get the unpopular stuff out of the way first. Let me assure my friends on the Democratic side that Senator Boxer did everything she could to change the minds of the Majority on opening statements.

Quite often, I can remember going as long as 2 hours on opening statements while our witnesses came from far away, had to sit and wait. Instead of that, we are going to have longer time for questions so if individuals want to combine that with opening statements, they can do that.

We are using the early bird rule. I will start with an opening statement.

Administrator McCabe, it is very nice to have you here and we are looking forward to working with you.

By mid-summer, your office plans to finalize three separate rules to reduce carbon dioxide emissions at power plants, which according to your own testimony before the House Energy and Power Subcommittee on June 19, 2014, does nothing to save us from global warming.

That is a quote I will use when it is my turn for questions so that people won't question the accuracy of that.

No one should be surprised. We have been here before. NASA's Dr. James Hansen, the father of global warming theory, said the Kyoto Protocol will have a little effect on global temperatures in the 21st century and it would take 30 Kyotos, his words, not mine, to reduce warming.

Even when Secretary Chu contradicted Lisa Jackson in July 2009, she was the director of the EPA at that time, she honestly testified that U.S. action would not impact world CO_2 levels.

You don't have to go back to that time because I asked her that question sitting right here. I said, we if we are to pass any of these cap and trade bills at that time, would this have the effect of reducing CO_2 emissions worldwide? She said no, it would not because this isn't where the problem is. The problem is China, India and so forth. We all know that.

I am going to try to go through this and try to get these points across. Then we will hear from Senator Boxer.

Also, by mid-summer, Ms. McCabe, your office plans to complete the Small Business Advocacy Review, issue a model Federal Implementation Plan and evaluate literally over 5 million public comments to your proposed rules.

The agency has already missed its first statutorily required deadline to finalize its new source proposal by January 8, 2015. I am interested to learn how the EPA expects States to comply with an expedited timeline the agency could not meet.

It should not be a surprise that 31 States have now opposed the Clean Power Plan. Today is EPA's day but we will be inviting these 31 State representatives, the ones paying for all this stuff, the stakeholders, the ones who have to comply, to a hearing.

In the meantime, we have number of problems with the proposals. I am concerned that your agency intends to impose the most expensive regulations in history, yet failed to achieve your own goals.

According to the economic consulting and analysis firm, NERA, the Clean Power Plan alone, on existing power plants, would cost $73 billion a year and upwards of $469 billion over the next 15 years.

It is hard to say on the new source because no one is going to be building a new coal plant. Those are the actual words of the President. He said, "If someone wants to build a coal power plan, they can. It is just that it will bankrupt them." That is clearly the intent of this.

What we are trying to do with regulation is what they have tried to do since 2002 through legislation. The first, we might remember, was the Byrd-Hagel rule in 1997. The vote on the Senate floor was 95–0 not to adopt a Kyoto type.

Then we had the McCain-Lieberman bill in 2002, another McCain-Lieberman bill in 2005, and another bill with Lieberman in 2008. Every one of them went down in defeat in the Senate. These were all Senate bills. They went down in defeat by a greater margin.

I think you are looking at something now that we want to hear how EPA is steamrolling ahead requesting billions of dollars in proposals which States reject, which ignores the will of Congress, which relies on unreasonable assumption, costs billions of dollars, will increase our energy bill, and not impact global warming.

Senator Boxer.

[The prepared statement of Senator Inhofe follows:]

STATEMENT OF HON. JAMES M. INHOFE, U.S. SENATOR
FROM THE STATE OF OKLAHOMA

Acting Administrator McCabe, thank you for taking the time to be here today. By mid-summer, your office plans to finalize three separate rules to reduce carbon dioxide emissions at power plants. According to your own testimony before the House Energy and Power Subcommittee on June 19, 2014, these rules do nothing to save us from global warming.

No one should be surprised; we've been here before.

• NASA's Dr. James Hansen—the father of global warming theory—said himself that the Kyoto Protocol will have little effect on global temperature in the 21st century and that it will take 30 Kyotos to reduce warming.

• Lisa Jackson honestly testified that U.S. action would not impact world CO_2 levels, even after Secretary Chu had contradicted her at a July 7, 2009, EPW hearing.

• According to two recent analyses of the President's Clean Power Plan, it's been demonstrated that the initiative will only reduce the earth's temperature by 0.02 degrees Celsius by 2100. Another study demonstrates that CO_2 concentrations will be reduced by less than 0.5 percent, global temperature rise will be reduced by 0.016 degree F, and sea level rise will be reduced by a 0.3 millimeter—or the thickness of three sheets of paper.

Similarly, your office plans to complete a Small Business Advocacy Review, issue a model Federal Implementation Plan, and evaluate literally over 5 million public comments to your proposed rules by mid-summer,

The agency has already missed its first statutorily required deadline to finalize its new source proposal by January 8, 2015. I'm interested to learn how the EPA expects states to comply with an expedited timeline the agency itself couldn't even meet.

It should not be surprising that 31 States now oppose your Clean Power Plan. Today is EPA's day to testify, but we will invite these states to have their day before this Committee to explain their problems.

In the meantime, I have a number of problems with these proposals. I am concerned that your agency intends to impose the most expensive regulation in history yet fail to achieve your goals. According to the economic consulting and analysis firm, NERA, the Clean Power Plan alone would cost as much as $73 billion per year and upwards of $469 billion over the next 15 years. It's difficult to know what the new source performance standards would cost, however, because no one will build a new coal plant. We'll have to take the President at his word from his interview with the San Francisco Chronicle in January 8, when he said, "So if somebody wants to build a coal power plant, they can. It's just that it will bankrupt them." Under the Clean Power Plan, at least 43 states will face double digit electricity price increases. The President is delivering on his campaign promise that under his Administration "electricity prices would necessarily skyrocket."

Additional impacts of the existing source rule include interruptions to the reliability of our nation's electrical grid. The Southwest Power Pool, which includes Oklahoma, reports the rule would result in "cascading outages" and "voltage collapse." The Clean Power Plan would also force the early retirement of coal-fired plants where operators have already made significant investments to install emissions control equipment in order to comply with other EPA regulations. Finally, this rule is an unprecedented attempt by the EPA to greatly expand its section 111 authority. This results in a Federal takeover of how we plan, develop, and consume energy in this country.

Democrats may want to criticize him for submitting comments on behalf of Peabody Energy, but even Lawrence Tribe wrote in comments and in a Wall Street Journal op-ed, that he "concluded that the agency is asserting executive power far beyond its lawful authority."

The Byrd/Hagel vote in 1997 was 95–0, 2003 McCain-Lieberman, 2005 McCain-Lieberman, and 2008 Warner-Lieberman all failed. Waxman-Markey was simply DOA in the Senate in 2009. I'm eager to hear why EPA is steamrolling ahead and requesting billions of dollars on these proposals. Not only do states reject them, but they ignore the will of Congress, rely on unreasonable assumptions, cost billions, increase our energy bills, and do nothing to impact global warming.

Senator BOXER. Mr. Chairman, before we start the clock, I want to respond to this idea that nobody can make opening statements except you or me.

I just think it is wrong. For 15 years, we all listened to each other. I want to lodge official opposition of the Democratic minority

to limiting opening statements to the Chairman and the Ranking Member.

With the goodwill we have, I hope we can continue to talk.

Senator INHOFE. Let me respond to that before we start your clock rolling.

We talked about that in our conference. We are the majority now. I recall you saying at one time that elections do have consequences, so some of these things are subject to change.

My problem has always been many of the committees, such as the Senate Armed Services Committee, only have the Chairman and the Ranking Member making opening statements. These are large committees.

I can remember sitting as long as 2 hours listening to each one of us talk and we have people coming in from California and long distances away. With 8 minute rounds, which are what we will have, I think each member can take half of that and use that if the member wants to. That is going to be the policy. I know you don't like it.

Senator BOXER. No, we don't like it and don't like gagging members of this committee. I am sad about it. We have done it for 15 years. Also, part of it is, you and I get to question first.

You speak 5 minutes, I speak 5 minutes, the witness speaks, you get 8 minutes, and I get 8 minutes. By the time we get to our members, it is noon.

Senator INHOFE. I would probably not speak first, but go ahead.

Senator BOXER. Good. Let us start the clock.

Senator CARDIN. Mr. Chairman, can I ask consent that my opening statement be included in the record?

Senator INHOFE. Sure.

[The prepared statement of Senator Cardin follows:]

STATEMENT OF HON BENJAMIN L. CARDIN, U.S. SENATOR FROM THE STATE OF MARYLAND

Mr. Chairman, thank you for holding today's hearing on the EPA's proposed Clean Power Plan. In Maryland we are already seeing costly and destructive effects of Climate change and I fully support regulating carbon from existing power plants.

With bi-partisan support, Congress passed the Clean Air Act that President Richard Nixon signed into law on the last day of the year in 1970. The Clean Air Act came about in response to devastating air pollution that made it nearly impossible to see the sky during certain times of the year in cities like Los Angeles, New York and my home town of Baltimore.

After almost 45 years, the Clean Air Act has effectively helped cleanup the air in most major cities. The proof is in the decline of bad-air days we experience, particularly in the Mid-Atlantic and Northeast during the hot summer months. It used to be that in the DC-Baltimore metropolitan area during the 1970's, 1980's and 1990's, that anytime the temperature soared into the nineties we'd inevitable have ground level ozone levels so high that the National Weather Service would issue "red alerts" for air quality advising seniors, young children and persons with respiratory diseases like asthma to stay indoors.

The Clean Air Act is working. The number of "red alert" and "orange alert" days have been in decline in recent years, despite our region experiencing some of the hottest summers on record since the start of this century.

The U.S. economy has grown exponentially in the decades since the Clean Air Act was enacted, despite what the doomsayers have said with each regulation promulgated under the Act. The chorus of concerns and fear mongering with this rule is no different than any of the Clean Air Act rules that have preceded it, in every instance, just as this one, the U.S. has grown its economy and improved our environment, proving time and time again that a healthy environment and robust economy are not exclusive choices that we must make—we can and will have both.

It's time to turn a new chapter in the Clean Air Act and I am proud of this administration's recognition to take bold action where others failed to do so.

EPA's authority to regulate CO_2 under the Clean Air Act has been affirmed by the Supreme Court in two landmark Clean Air Act cases: Massachusetts v. EPA (2007), which affirmed EPA's standing to regulate GHGs under the Clean Air Act pending EPA's promulgation of an "endangerment finding" for GHGs.

American Electric Power Company v. Connecticut (2011) was a unanimous SCOTUS decision which held that corporations cannot be sued for GHGs emissions under Federal common law, because the Clean Air Act delegates the management of GHGs emissions to the EPA—setting the stage for yesterday's rule.

On remand from Massachusetts v. EPA, EPA found that six greenhouse gases, emitted from the combustion of carbon based fuels, "in the atmosphere may reasonably be anticipated both to endanger public health and to endanger public welfare."

In Coalition for Responsible Regulation v. EPA, the petitioners sought judicial review of EPA's determination in the U.S. Court of Appeals, D.C. Circuit. On June 26, 2012, the court issued an opinion which dismissed the challenges to the EPA's endangerment finding and the related GHG regulations.

The three-judge panel unanimously upheld the EPA's central finding that GHGs such as CO_2 endanger public health and are likely responsible for the global warming experienced over the past half century.

The statutory authority granted under the 1970 Clean Air Act, and three Federal court decisions including two Supreme Court decisions, laid the legal groundwork for a commonsense approach to regulating carbon pollution under Section 111 of the Clean Air Act.

Sec. 111 authorizes EPA to establish baseline performance standards for power plants, which in the case of this rule we are talking about achieving a 30 percent net reduction in carbon pollution from power plants, using 2005 as the baseline, by 2030.

Moreover, the rule is flexible in how these "performance standards" are met by applying these standards broadly across each states' fleet of power plants, rather than demanding these reductions from each individual power plant.

This approach to regulation puts states in control of how it's fleet of power generation facilities will these reduction targets. The performance standard is applied across all power generation facilities, including carbon intensive facilities like coal power plants, and zero emission power like nuclear, hydro and wind.

Through this rule, solutions can be sought outside the fence, it may be possible for states to meet these standards through increased in-State development of renewable energy and improved energy efficiency standard, without having to shutdown or drastically change the operations of its coal power plants.

The point is, states will be in control of how they will meet these standards and there are a wide variety of tools in the toolbox for states to use to meet these standards.

Former Governor Martin O'Malley positioned Maryland to thrive under this rule through the State's participation in the Regional Greenhouse Gas Initiative (RGGI).

Using RGGI as its model and approach for compliance with the rule, RGGI generates more than $200 million annually in revenues for Maryland, meaning compliance with this rule through will continue to bring needed revenues into the state. Moreover, electricity rates have stabilized in Maryland providing price certainty for ratepayers which would be unchanged under this rule so long as Maryland remains a RGGI state. Last, MD's regulated community understands and appreciates the regulatory certainty the RGGI has provided.

That's why our state's largest electricity generator has submitted comments that support the goals of the proposed rules, while at the same time suggest how the rule may be improved to better accommodate nuclear power generation. I applaud Exelon's constructive participation and approach to the rulemaking process.

I'm proud that Maryland's energy companies, like Constellation/Exelon are making investments to reduce the carbon output of its power generation fleet in Maryland and in the other states they are operating in.

These early adopters made the correct investments and assumptions about where regulation was headed all based on information that everyone in the power generation sector had available. These leaders in the industry will thrive under the new certainty these rules will provide the industry.

The actions taken by Maryland's power sector and State regulators show an understanding of how important addressing climate change is to Maryland. After all, it makes good business sense in Maryland for power providers to their part to reduce the causes of climate change, because 70 percent of the state's population, also known as ratepayers, lives in the coastal regions of the state.

This gets to how climate change is impacting Maryland's economy and our way of life.

Poultry is Maryland's number one agricultural product. Poultry dominates the Eastern Shore economy. Feed costs comprise more than 75 percent of the input cost of raising birds to market. 2012's record drought severely reduced our nation's corn supply.

The drought, combined with the RFS's ethanol production mandate, pushed feed prices to record highs. The increased risk of drought that climate change presents adds instability to Maryland's poultry industry.

At a recent event in Dorchester County, farmers remarked that they are noticing a change in their growing season and they feel their way of life is threatened by climate change.

Another fixture of Maryland's economy is Maryland's watermen, who are continuing the centuries' old traditions of harvesting the bounty of the Chesapeake Bay. Lately though, the quality of the Bay's bounty in a constant State of flux as warmer waters and increased intensity of storms is changing the ecology of the Bay.

Eelgrass, which provides important habitat for the Bay's iconic Blue Crabs, died out almost completely during the record-hot summers of 2005 and 2010. This year crab population projections are anticipated to be low, due in large part to this winter's series of polar vortexes, caused by instability in the upper atmosphere that normally keeps massive cold air masses better centered to the North in the Winter.

When Blue Crab populations suffer Maryland's watermen suffer, our coastal communities suffer and Maryland's seafood industry more broadly suffers.

Moreover, the Port of Baltimore is an economic engine in the State of Maryland and the Mid-Atlantic region on the whole. The Port supports thousands of dockside jobs in Baltimore, and the commerce going in and out of the port supports tens of thousands of jobs across the Eastern United States. Sea level rise threatens the productivity of the Port and the safety and utility of the harbor infrastructure at the Port of Baltimore.

The tourism industry is directly affected by climate change. People love to come to our State to hunt and fish. One of the most valuable assets we have along the bay is the Blackwater National Wildlife Refuge.

The recovery of the American Bald Eagle is no more evident than at Blackwater National Wildlife Refuge where there are more than 100 resident Bald Eagles in the refuge.

Blackwater is at risk. It is important for tourism, and it is important for our environment. It is also the land in which Harriet Tubman led freedom seekers along the Underground Railroad, so it has a tremendous historic significance as well. Yet, between 1938 and 2006, the refuge has lost 5,000 acres of marshland to open water, and that is accelerating. It is not slowing down. If we don't reverse the impacts of climate change, we are going to see a more dramatic impact on those types of treasures in Maryland and nationally.

There is no denying that carbon gases in our atmosphere trap heat which has helped make our planet hospitable to life for billions of years. The carbon in the atmosphere that keep our planet hospitable is the same carbon that is emitted into the atmosphere from tailpipes and smokestacks.

As a global society we have burned billions of tons of carbon based fossil fuels over the decades, while also shrinking the size of natural carbon sinks like forests. As a result the natural balance of carbon in our atmosphere is out of sync.

The average atmospheric and surface temperatures on Earth are rising. More heat is being trapped and we are seeing the effects of these changes in our atmosphere in changing weather patterns and the increased intensity of weather events, and weather driven events, like wild fires, droughts, floods, and super cell storm systems.

The overwhelming scientific consensus, 97 percent of climate scientists, among experts doing field research have come to determine that climate change is real and manmade.

In the media and in Congress there is an inherent interest in presenting a balanced view point on issues.

Each side gets its witnesses and advocates, which is fine and good for a political debate, but we're not debating politics. We are debating scientific findings in which there an overwhelming, 97 percent, consensus among scientists agree that the data shows climate change is real.

U.S. leadership on reducing global carbon pollution is long overdue. While it is unfortunate that Congress will continue to bicker over this sentinel issue facing generations to come, at least we will know show other leaders around the world that the U.S. is a serious partners in tackling this threat.

I am encouraged by the prospect of new economic growth potential from clean energy development and stand ready to make Maryland and the U.S. a leader into the future.

The Chair. All opening statements will be made a part of the record.

Senator BOXER.

OPENING STATEMENT OF HON. BARBARA BOXER, U.S. SENATOR FROM THE STATE OF CALIFORNIA

Senator BOXER. Mr. Chairman, today's oversight hearing will examine the critically important steps that the Obama administration is taking to address climate change by reducing dangerous carbon pollution from the biggest source, power plants.

They account for 40 percent of all carbon pollution released into the air and we are seeing the consequences. Let us look at the trends across the Country.

It is official. The year 2014 was the hottest year in recorded history and was earth's warmest year on record. How hot was it, 2014 was earth's warmest year on record as data shows.

Everyone can say whatever they want. They can say it is cold and it is snowing. We all know all the facts. For goodness sakes, how out of step can people be with the scientists and the people of this Country who are so far ahead?

NASA and NOAA found that in 134 years of recordkeeping, no year has been hotter around the globe than 2014. The President's proposal will enable America to lead the way to avert the most calamitous impacts of climate change such as sea level rise, dangerous heat waves and economic disruption to our farmers, to our businesses, to our tourist industry and to our people.

I often say if people cannot breathe, they cannot work or go to school. We know this particular proposal will avoid up to 3,700 cases of bronchitis in children, 150,000 asthma attacks, 3,300 heart attacks, 6,600 premature deaths and 490,000 missed days at school.

Who are we working for, the people of this Country or the polluters? I think that is the question. The Obama administration gets it and so do the American people.

Let us look at a new Stanford University poll which found that 83 percent of Americans, including 61 percent of Republicans, say if nothing is done to reduce carbon pollution, global warming will be a serious problem into the future. Seventy-seven percent of Americans of all political stripes say the Federal Government should be doing a substantial amount to combat climate change.

Last year, this committee heard from four former EPA Administrators, all Republicans who served under Presidents Nixon and George W. Bush. They all agreed that climate change requires action now and it should not be a partisan issue. I thought for sure that would change some minds on my Republican side. Not one mind was changed.

The President's plan relies on the authorities under the Clean Air Act, which was created with an overwhelming bipartisan consensus that I yearn for today. In 1970, the Clean Air Act passed the Senate by a vote of 73 to zero, passed the House by 375 to 1, and was signed into law by President Nixon.

The Clean Air Act has a proven track record of success. President Obama is building on that success. I often say in all the years I have been in office, a long time, no one ever complained that the air was too clean. Oh, gee, Barbara, the air is just clean enough; don't do anything more. They want us to keep cleaning up the air.

My home State has been a leader in proving you can reduce carbon pollution and grow this economy. California households pay the ninth lowest electricity bills and the per person carbon footprint is among the lowest in the Country.

We also added 491,000 jobs in the first year of the State's cap and trade system, a job growth rate of 3.3 percent, better than the national rate of 2.5 percent. Over the last 4 years, we have turned a $26 billion budget deficit into a projected $4 billion surplus.

Do not tell me that if you move forward on clean air, you destroy the economy or destroy your budget. It is quite the opposite.

Climate change is happening now. We cannot afford to wait. I commend the President and the EPA for taking action to protect our families and our children from the worse impacts.

In the time remaining, I ask unanimous consent to place into the record, the article in today's Washington Post.

Senator INHOFE. Without objection.

Senator BOXER. Thank you, Mr. Chairman.

[The referenced information follows:]

The Washington PostThe Washington Post

Energy And Environment

Elite science panel calls on U.S. to study climate modification

By Chris Mooney February 10 at 11:05 AM

The first thing to understand about geoengineering – intentional modification of the climate system to counter the effects of global warming – is that we shouldn't even be having a conversation about geoengineering.

Just convening that conversation — which has gained a new megaphone, thanks to a report just released by an expert panel assembled by the National Research Council of the U.S. National Academy of Sciences — in a sense means that we've failed to reduce carbon dioxide emissions enough to prevent the risk of dangerous climate change. And thus, we've also failed to take geoengineering off the table.

The committee was chaired by Marcia McNutt, the editor-in-chief of Science and formerly the director of the U.S. Geological Survey, who said in a released statement, "That scientists are even considering technological interventions should be a wake-up call that we need to do more now to reduce emissions, which is the most effective, least risky way to combat climate change."

The National Research Council recommends — very reluctantly, and only for purposes of increasing our knowledge — government-sponsored research into so-called albedo modification, sometimes also called solar radiation management (a term the committee preferred not to use).

"Albedo" is a scientific term that refers to reflectivity — in this context, how much the Earth bounces light away and back to space. Thus albedo modification means altering reflectivity of the planet, for instance by injecting large volumes of sulfate particles into the middle atmosphere, so as to deflect sunlight away before it gets to us here at the surface, and thereby induce a global cooling.

In effect, this would be like installing an artificial thermostat to turn down the Earth's dangerously rising temperature — last year was the hottest on record — by banishing some of the energy streaming to us from the sun. We know that it would work, researchers say, because we know that large volcanic eruptions cool down the planet by physically similar means.

Tens of millions of tons of sulfate aerosol, for instance, could offset a doubling of carbon dioxide in the atmosphere. But there would be unknown knock-on effects, ranging from changing global precipitation patterns to ozone depletion. And they would be unevenly distributed across the world, the panel noted, potentially sparking controversy over inequitable consequences, much as global warming itself does now.

Here's a visualization of some possible strategies for albedo modification:

"They don't want any deployment right now, but the fact that they think there's a need to do the research, and get organized, to me is the most important thing," says Rafe Pomerance, a former Clinton administration State Department official on environment and development and a current member of the National Academies' Polar Research Board. "The issue is getting a lot more attention."

The scientists make clear that they would consider any deployment of geoengineering techniques like albedo modification to be reckless, given inadequate knowledge of the downstream consequences. Indeed, they write, artificially changing the Earth's reflectivity at all would be "irrational" without trying to cut down on carbon dioxide, as well. That is

especially the case in that albedo modification is only a bandage that doesn't make the underlying problem — carbon dioxide — go away. If you were to ever stop geoengineering after starting it, global warming would snap right back.

Nonetheless, the committee did recommend U.S. government-sponsored research on the matter to learn more about its "risks and benefits." It pivoted toward doing so with a crucially hesitant sentence that bears parsing and rereading: "The Committee argues that, as a society, we have reached a point where the severity of the potential risks from climate change appears to outweigh the potential risks from the moral hazard associated with a suitably designed and governed research program."

For a long time, even discussing geoengineering had been considered a "moral hazard" by some, because it could undermine actions to address the root causes of the problem — carbon dioxide emissions.

Overall, the report represents a "big tent" approach, notes Raymond Pierrehumbert, a geophysicist at the University of Chicago who served on the committee, suggesting a range of views among the participating scientists (there were 16 committee members).

"One of the best things that could come out of the NRC report is to just alert people to the fact that unrestrained emissions could make the world so bad that we might do something like albedo modification just out of desperation," says Pierrehumbert.

Reasoning that there are many scenarios in which we would need to know more about artificially changing the Earth's reflectivity – for instance, if a rogue state decides to try it — the committee recommended that the U.S. Global Change Research Program head up studies on the matter, and that the research be performed in such a way as to simultaneously increase our basic knowledge of the climate system.

The recommendation includes conducting "small-scale field experiments" with

"controlled emissions" — provided it is clear that they are too localized and minuscule in scale to have any significant climatic effect. All of this would need to occur, notes the committee, under the aegis of a deliberative process about how to govern geoengineering research, to ensure ethical considerations are weighed and to balance risks and benefits.

The National Research Council report was sponsored by a number of U.S. science agencies and also the U.S. intelligence community. In a separate report, the National Research Council explored the subject of carbon dioxide removal, which is considerably less controversial, and is mainly held back at the moment by technological and cost considerations. Here, the idea is deploying technologies to actively remove the carbon dioxide that is in the atmosphere as a result of human emissions, which would also induce a cooling effect if deployed at adequate scale:

The two reports arrive following a dramatic growth in scientific publications and discussion about geoengineering over the past decade — fanned by climate concerns. The British Royal Society also recommended government-sanctioned and organized research into geoengineering in a report in 2009.

Up until now, the research studies on geoengineering published in scientific journals have generally relied upon computer simulations to study the hypothetical effects of various kinds of interventions. True outdoor experiments that change the world, rather than a simulacrum of it, are another matter — but if the framework outlined by the National Research Council were to be adopted, they could go carefully forward.

Advertisement

One researcher who has been thinking about such experiments is Jane Long, who was an associate director at the Lawrence Livermore National Laboratory and co-chaired the Bipartisan Policy Center's study of geoengineering in 2011. In particular, she has considered small-scale experiments to explore marine cloud brightening, another albedo

modification technique.

The idea here is that if clouds over the ocean were more white in color, they'd bounce back more solar radiation. So how would you conduct a field study of this idea?

"You might inject some salt particles in a coastal cloud belt and try to measure a change in albedo," says Long. This modification could be done from shore, and then the cloud changes could be measured by aircraft from above.

Long, like the authors of the new report, is motivated by climate change concern. "We pretty accurately know that things are going to potentially be very bad in mid-century if we don't get on top of the problem," she says.

Chris Mooney reports on science and the environment.

Senator BOXER. It says, Studies on Modifying Climate Urge, Geo-engineering Would Be a Risky Last Resort Scientists Say. I urge everyone to read this.

We don't need this brave new world of geo-engineering. We can move forward on the policies the President has put forward and that Republican Presidents have put forward. Let us move ahead and do the right thing for our children, our families and our Nation.

[The prepared statement of Senator Boxer follows:]

Senator INHOFE. Thank you.

We will now turn to our witness, Janet McCabe, Acting Assistant Administrator for the Office of Air and Radiation, U.S. Environmental Protection Agency.

STATEMENT OF JANET MCCABE, ACTING ASSISTANT ADMINISTRATOR, OFFICE OF AIR AND RADIATION, U.S. ENVIRONMENTAL PROTECTION AGENCY

Ms. MCCABE. Thank you, Chairman Inhofe, Ranking Member Boxer and members of the committee. Thank you for the opportunity to testify today.

Climate change is one of the greatest challenges of our time. It already threatens human health and welfare and economic wellbeing, and if left unchecked, it will have devastating impacts on the United States and the planet.

The science is clear, the risks are clear and the high costs of climate inaction are clear. We must act. That's why President Obama laid out a Climate Action Plan and why this summer the EPA will be taking flexible, common-sense steps to cut carbon pollution from the power sector.

These steps will help build a more resilient nation, and lead the world in our global climate fight. Beginning in January 2014, EPA has issued three proposals to address CO_2 emissions from power plants.

These rules will set standards for CO_2 emissions from new, existing and modified and reconstructed fossil fuel-fired power plants. As we announced in January, the EPA intends to finalize these three rules by mid-summer 2015.

EPA's stakeholder outreach and public engagement in preparation for these rulemakings has been unprecedented and has resulted in an unprecedented amount of public input. We are currently reviewing the roughly two million comments received on the proposal for new sources and the more than 3.5 million comments we received on the proposals for existing, modified and reconstructed sources.

As we work our way through the comments, what is completely apparent is not only the time and effort the States and our many stakeholders have put into developing their input, but the importance we, as a country, place on moving forward to address climate change. This input is especially important given the important role the States will play in this program.

We have received comment on a range of crucial issues from the investments these rules might require to maintain reliability, a consideration we view with the utmost importance in implementing all clean air protections, to costs, the right levels of stringency, and

establishing a workable glide path that will bring about success in moving to a less carbon intensive energy production while safeguarding a reliable and affordable supply of electricity for all communities, businesses and consumers.

Many comments identify opportunities to drive investment in innovative clean technologies and energy efficiency, as well as reiterating the importance of the emissions reductions in addressing climate change and improving air quality and public health.

We are addressing and accounting for all of the information and ideas received on the three separate proposals and we are confident that the final rules will be improved as a result of this input.

While EPA is firmly focused on the work needed over the next few months to finalize rules that take into account all of the input we received, we remain deeply committed to continuing our engagement with States, tribes, utilities, stakeholders, other Federal agencies, resource planning organizations and others.

As part of this process, we know that States are beginning to think about the very real task of drafting and developing State plans that will be used to implement the final Clean Power Plan when it is issued. We are preparing to provide States the assistance they will need as they begin to develop their State plans.

That is why we are also starting a rulemaking process to develop a rule that both would set forth a proposed Federal plan and, by providing a model, could help States to think about their plans.

I want to be clear that EPA's strong preference, as is always, is that States will submit their own plans, tailored to their specific needs and priorities. We believe States will want to do that here, but we also know that setting out a Federal plan is an important step to ensure that our Clean Air Act obligations are fulfilled.

At the same time, we believe that many States will find it helpful to be able to examine a Federal plan proposal as they begin to develop their own compliance plans. Indeed, they have told us so. That is why we are aiming to issue the Federal plan proposal in mid-summer as well.

When fully implemented, the Clean Power Plan is expected to help deliver 730 million tons of reduction in CO_2 emissions, a substantial reduction of harmful pollution. Moreover, it will also lead to thousands of fewer heart attacks and tens of thousands fewer asthma attacks and other health benefits as well.

These reductions will deliver tens of billions of dollars in public health and climate benefits that far outweigh the estimated annual costs of the plan. The soot and smog reductions that will be achieved along with reductions in carbon pollution alone will yield $7 in health benefits for every dollar we invest in meeting the standards.

Because energy efficiency is such a smart, cost effective strategy, we predict that, in 2030, average electricity bills for American families will be 8 percent cheaper than they are projected to be without the Clean Power Plan.

When he unveiled his Climate Action Plan in June 2013, President Obama made clear that among his goals was not only achieving meaningful reductions in domestic greenhouse gas emissions, but also asserting leadership in the international effort to combat climate change.

We believe that the Clean Power Plan will fulfill our obligations under the Clean Air Act to protect communities from dangerous air pollution. At the same time, it is a significant component of the Administration's broad-based set of actions that have achieved and will continue to achieve significant reductions in greenhouse gas emissions.

There is evidence that the Clean Power Plan has spurred progress and commitment from other countries and has advanced the international discussion as a whole. We are confident that all o this can be achieved in a way that strengthens the economy and creates new jobs here at home.

I look forward to your questions. Thank you very much.

[The prepared statement of Ms. McCabe follows:]

Opening Statement of Janet McCabe
Acting Assistant Administrator
Office of Air and Radiation
U.S. Environmental Protection Agency

Hearing on EPA's Proposed Clean Power Plan

Committee on Environment and Public Works
United States Senate
February 11, 2015

Chairman Inhofe, Ranking Member Boxer, members of the Committee: Thank you for the opportunity to testify today.

Climate change is one of the greatest challenges of our time. It already threatens human health and welfare and economic well-being, and if left unchecked, it will have devastating impacts on the United States and the planet.

The science is clear. The risks are clear. And the high costs of climate inaction are clear. We must act. That's why President Obama laid out a Climate Action Plan and why this summer the EPA will be taking flexible, common-sense steps to cut carbon pollution from the power sector. These steps will help build a more resilient nation, and lead the world in our global climate fight.

To date, EPA has issued three proposals—the first, issued in January 2014, addresses CO2 emissions from new power plants, and the second and third of these proposals, both issued in June 2014, address CO2 emissions at existing power plants and at modified and reconstructed power plants, respectively.

As we announced in January, the EPA intends to issue the final Clean Power Plan for existing sources and final standards for new, modified and reconstructed sources by mid-summer 2015.

EPA's stakeholder outreach and public engagement in preparation for these rulemakings was unprecedented. This outreach has continued, and has included hosting public hearings on the proposals during the open comment periods. Now we are reviewing and considering both the roughly 2 million comments received on the Carbon Pollution Standards for New Power Plants, and also the more than 3.5 million comments we have received on the proposed Clean Power Plan and the proposed Carbon Pollution Standards for Modified and Reconstructed Sources.

As we work our way through the comments, what is completely apparent is not only the time and effort the states and our many stakeholders have put into developing their input, but the importance we, as a country, place on moving forward to address climate change. Thanks to the volume and quality of the comments, we are benefiting from a public comment process that is working in exactly the way it should.

We have received comment on a range of crucial issues, from the investments these rules might require to maintain reliability – a consideration we view with the utmost importance in implementing all clean air protections – to costs, the right levels of stringency, and establishing a workable glide path that will bring about success in achieving the required reductions while safeguarding a reliable and affordable supply of electricity for all communities, businesses and consumers. Many comments are supportive of the proposal; these comments often identified opportunities to drive investment in innovative clean technologies and energy efficiency, as well as reiterating the importance of the emissions reductions in addressing climate change and improving air quality and public health.

We are addressing and accounting for all of the information and ideas received on the three separate proposals and we are confident that the final rules will be improved as a result of the contributions made to the effort by stakeholders and commenters.

And while EPA is firmly focused on the work needed over the next few months to finalize rules that take into account all of the input we received, we remain deeply committed to continuing our engagement with states, tribes, utilities, stakeholders, other federal agencies, resource planning organizations and others. As part of this process, we know that states are beginning to think about the very real task of drafting and developing state plans that will be used to implement the final Clean Power Plan when it is issued. And we are preparing to provide states the assistance they will need as they begin to develop their state plans.

That is why we are also starting a rulemaking process to develop a rule that both would set forth a proposed federal plan and, by providing a model, could help states starting to think about their plans.

I want to be clear that EPA's strong preference, as is always the case, is that states will submit their own plans, tailored to their

specific needs and priorities. And we believe states will want to do that here. But we also know that setting out a federal plan is an important step to ensure that our Clean Air Act obligations are fulfilled. At the same time, we believe that many states will find it helpful to be able to examine a federal plan proposal as they begin to develop their own compliance plans. Indeed, they have told us so. That is why we are aiming to issue the federal plan proposal in mid-summer as well.

When fully implemented, the Clean Power Plan will lead to thousands of fewer heart attacks and tens of thousands fewer asthma attacks: important health benefits that will deliver tens of billions of dollars in public health and climate benefits. These climate and health benefits far outweigh the estimated annual costs of the plan. The soot and smog reductions that will be achieved along with reductions in carbon pollution alone will yield $7 in health benefits for every dollar we invest in meeting the standards. And because energy efficiency is such a smart, cost-effective strategy, we predict that, in 2030, average electricity bills for American families will be 8 percent cheaper than they are projected to be without the Clean Power Plan.

When he unveiled his Climate Action Plan in June of 2013, President Obama made clear that among his goals was not only achieving meaningful reductions in domestic greenhouse gas emissions but also asserting leadership in the international effort to combat climate change. We believe that the Clean Power Plan will fulfill our obligations under the Clean Air Act to protect communities from dangerous air pollution. At the same time, it is a significant component of the Administration's broad-based set of actions that have achieved significant reductions in greenhouse gas emissions, and there is evidence that the Clean Power Plan has spurred progress and commitment from other countries and has advanced the international process as a whole. We are confident that these results can be accomplished in a way that strengthens the economy and creates new jobs.

I look forward to your questions. Thank you.

RESPONSES BY JANET MCCABE TO ADDITIONAL QUESTIONS FROM SENATOR INHOFE

Question 1. In 2013, four nuclear reactors prematurely closed. One of those reactors was the Kewaunee plant in Wisconsin. When EPA set the reduction target for Wisconsin, it did so based on electricity production in 2012, a year in which Kewaunee was still operating.

a. This means Wisconsin will be forced to meet a more stringent target, correct?

Response. Nuclear power is part of an all-of-the-above, diverse energy mix and provides a reliable, base load source of low-carbon power. Nuclear energy can help the U.S. meet its goals to reduce carbon pollution and meet clean air standards. The EPA is currently reviewing the more than 4.3 million comments received on the proposal, including comments about specific nuclear units and specific Electric Generating Units (EGUs), and will continue to consider this and other comments raised as we develop the requirements for the final Clean Power Plan.

Question 2. There are currently five nuclear reactors under construction, in Georgia, South Carolina and Tennessee. Since they are under construction, they clearly did NOT produce electricity in 2012. However, the congressional Research Service found that EPA's plan "substantially lowers" the targets in those states to account for their investments in nuclear power, making their targets more stringent and harder to achieve.

a. Did EPA similarly penalize states with wind projects under construction, assuming their existence in setting targets for those states, making those states' targets harder to achieve?

b. Why does nuclear energy receive such arbitrary treatment?

c. Shouldn't EPA treat hydropower, nuclear power, and other sources of zero-emission electricity the same?

d. If states rely upon new reactors in their State Implementation Plans under the proposed rule, will EPA penalize the states if the NRC refuses to allow those reactors to begin operating?

Response. Nuclear power is part of an all-of-the-above, diverse energy mix and provides a reliable, base load source of low-carbon power. Nuclear energy can help the U.S. meet its goals to reduce carbon pollution and meet clean air standards. In the proposal, we requested comment on approaches to nuclear power, including considering five under-construction nuclear units at three plants and providing an incentive to preserve nuclear power generation at existing plants across the country. Many commenters have provided information, including that they would like equitable treatment of the Best System of Emission Reduction (BSER) requirements across states and in particular would like similar treatment among the low-and zero-emitting sources of power. We have engaged in outreach to numerous stakeholders about nuclear power, renewable energy, and other low-and zero-emitting sources of power to better understand issues raised in their comments and we are giving careful consideration to all comments received as we develop the requirements for the final Clean Power Plan.

Question 3. Economic modeling of climate legislation by EPA, EIA, and others has consistently shown that dramatic growth in nuclear energy is necessary to reduce carbon emissions and that constrained development of nuclear energy dramatically increases the costs of compliance. If fact, in 2008, EPA determined that 44 new reactors would be needed by 2025 to satisfy the requirements of S. 2191, known as the Lieberman-Warner bill. In 2009, EIA determined that 96 gigawatts of new nuclear capacity would be needed by 2030 under H.R. 2454, the Waxman-Markey bill.

a. How many new reactor licenses are actively being reviewed by the NRC?

b. How many new reactors, in addition to those currently under construction, are necessary to enable compliance under EPA's base case for the proposed rule?

c. How does EPA plan to meet its carbon emission reductions without increasing the use of nuclear energy or even replacing the units that currently provide the bulk of our carbon-free electricity?

Response. Nuclear power is part of an all-of-the-above, diverse energy mix and provides a reliable, base load source of low-carbon power. The requirements of the proposed Clean Power Plan differ to a great extent from the elements that constituted both the Lieberman-Warner bill and the Waxman-Markey bill. In the Clean Power Plan proposal, we considered the impact of nuclear power as part of the energy mix for consideration of the proposed elements of the rule and requested public comment. The five nuclear units that commenced construction prior to issuance of the proposal were considered existing plants at the time of proposal and we have received several comments on this determination. New nuclear units were not projected or incorporated into the setting of the proposed BSER.

The EPA also notes that the proposed Clean Power Plan builds on what states are already doing to reduce carbon pollution from existing power plants. The Clean Power Plan empowers states to chart their own, customized path to meet their goals in a manner that is sensitive to each state's unique circumstances. We are aware of six applications for new licenses under active review at the Nuclear Regulatory Commission. In addition, we have met with Georgia, South Carolina, and Tennessee on several occasions to discuss the proposed requirements for facilities under construction and we are giving careful consideration to all comments received as we develop the requirements for the final Clean Power Plan.

Question 4. For states that do not submit a State implementation plan, what mechanisms of enforcement will the EPA rely to impose a Federal plan under the Clean Power Plan proposal? Please provide the statutory cite by which EPA will rely for each enforcement mechanism. Will EPA depend on 3d party environmental groups to file suits against the states to push enforcement? Would EPA make compliance with the Clean Air Act a requisite for Federal permits? If so, what permits?

Response. Under Section 111(d) the EPA is proposing a two-part process where the EPA sets state-specific goals to lower carbon pollution from power plants, and then the states must develop plans to meet those goals. States develop plans to meet their goals, but EPA is not prescribing a specific set of measures for states to put in their plans. This gives states flexibility. States will choose what measures, actions, and requirements to include in their plans, and demonstrate how these will result in the needed reductions. The Clean Air Act provides for EPA to write a Federal plan if a State does not put an approvable State plan in place. In response to requests from states and stakeholders since the proposed Clean Power Plan was issued, EPA announced in January 2015 that we will be starting the regulatory process to develop a rule that would set forth a proposed Federal plan and could provide an example for states as they develop their own plans. EPA's strong preference remains for states to submit their own plans that are tailored to their specific needs and priorities. The agency expects to issue the proposed Federal plan for public review and comment in summer 2015.

Question 5. In response to a question from Sen. Wicker about stranded assets, Acting Assistant Administrator McCabe testified that EPA is being careful "not to put plants in a position of stranding assets." Please explain what specific steps EPA has proposed—or is contemplating—to avoid stranding assets and investments existing facilities have made to comply with Clean Air Act and other environmental requirements.

Response. The EPA's proposed State goals do not impose specific requirements on any individual source. Instead, states have the flexibility to choose their own compliance pathways, including avoiding stranded assets. Following publication of the proposed rule, EPA published a Notice of Data Availability [79 FR 64543, October 30, 2014] that provided additional information on certain issues that had been consistently raised by a diverse set of stakeholders, including ideas about the glide path of emission reductions from 2020–2029 and other topics that have been identified as potentially related to the remaining asset value of existing coal-fired generation.

Question 6. Acting Assistant Administrator McCabe also testified that EPA is working with State regulators to see whether there is flexibility "to provide a path" for avoiding stranding assets. Please identify which states you are working with on this issue, and describe the "potential paths" being discussed.

Response. The outreach to and response from the public on the Clean Power Plan has been unprecedented, including outreach to and feedback from stakeholders from all 50 states. More than 4.3 million comments have been submitted and EPA is examining and carefully considering all the issues raised in those comments.

Question 7. Please provide a detailed explanation of the flexibility afforded to states by the Clean Air Act and EPA's 111(d) implementing regulations (40 C.F.R. part 60, subpart B) to grant variances to specific facilities allowing for different emission standards and longer compliance periods without increasing the burden on other facilities within the state.

Response. The proposed Clean Power Plan builds on what states are already doing to reduce carbon pollution from existing power plants. It does not require that the states actually use each of the building blocks as they develop their plans for meeting the State goal. Instead, it empowers the states to chart their own, customized path to meet their goals. Under the proposal, the states have a flexible compliance path that allows them to design plans sensitive to their needs, including requiring different standards from different individual sources.

Question 8. Please identify with specificity the factors, other than plant age, location, design, or remaining useful life, that states may consider under 40 C.F.R. 60.24(f)(3) in determining when a less stringent standard or final compliance time

is "significantly more reasonable." Would the fact that a plant recently made significant capital expenditures to install pollution controls to comply with Clean Air Act programs qualify for relief under 40 C.F.R. 60.24(f)(3)? If so, under what circumstances? If not, why?

Response. The proposed Clean Power Plan builds on what states are already doing to reduce carbon pollution from existing power plants. It does not require that the states actually use each of the building blocks as they develop their plans for meeting the State goal. Instead, it empowers the states to chart their own, customized path to meet their goals. Under the proposal, the states have a flexible compliance path that allows them to design plans sensitive to their needs, including requiring different standards from different individual sources.

Question 9. In the preamble to the proposed Clean Power Plan, EPA states that "the flexibility provided in the State plan development process adequately allows for consideration of the remaining useful life of the affected facilities and other source-specific factors and, therefore, that separate application of the remaining useful life provision by states is unnecessary." In other words, EPA appears to be saying that because EPA has provided flexibility in State plans, states are prohibited from further consideration of remaining useful lives and other factors for facilities within their state. Please explain with specificity EPA's legal authority for limiting State flexibility in this way, including why such a restriction is not inconsistent with Clean Air Act section 111(d)(1), which provides that EPA "regulations shall permit the State in applying a standard of performance to take into consideration, among other factors, the remaining useful life of the existing source." (Emphasis added).

Response. Along with the proposed rule, the EPA included in the docket a Legal Memorandum providing background for the legal issues raised by the rule. In addition to the preamble, that Legal Memorandum details the EPA's understanding, at the time of proposal, of the legal issues in the State planning process. That document can be found using Docket ID Number EPA-HQ-OAR–2013–0602–0419. The EPA is currently reviewing the more than 4.3 million comments received on the proposal, including the comments on the issues addressed in the Legal Memorandum, and will respond to the issues raised in those comments when we issue a final Clean Power Plan.

Question 10. EPA further provides in the preamble to the proposed rule that, 'to the extent that a performance standard that a State may wish to adopt for affected EGUs raises facility-specific issues, the State is free to make adjustments to a particular facility's requirements on facility-specific grounds, so long as any such adjustments are reflected (along with any necessary compensating emission reductions) as part of the state's CAA section 111(d) plan submission." Please explain with specificity EPA's legal authority for conditioning states' variance authority in this way. Also, please explain how such a restriction is not inconsistent with CAA section 111(d) and would not restrict a state's flexibility to avoid stranding assets.

Response. Along with the proposed rule, the EPA included in the docket a Legal Memorandum providing background for the legal issues raised by the rule. In addition to the preamble, that Legal Memorandum details the EPA's understanding, at the time of proposal, of the legal issues in the State planning process. That document can be found using Docket ID Number EPA-HQ-OAR–2013–0602–0419. The EPA is currently reviewing the more than 4.3 million comments received on the proposal, including the comments on the issues addressed in the legal memorandum, and will respond to the issues raised in those comments when we issue a final Clean Power Plan.

Responses by Janet McCabe to Additional Questions from Senator Booker

Question 1. Nuclear power plants currently provide 60 percent of the nation's emissions-free power generation, and are especially important in states like New Jersey. Many of these existing power plants are under market pressures that could lead them to be replaced with emitting generation. The Clean Power Plan proposal attempts to address existing nuclear power by factoring 6 percent of emissions-free nuclear generation into each state's target. In most states, including New Jersey, this provides a negligible incentive to avoid replacing this generation with gas.

a. What changes are the EPA exploring to ensure the Clean Power Plan strongly encourages states to maintain nuclear generation as a critical resource?

Response. Nuclear power is part of an all-of-the-above, diverse energy mix and provides a reliable, base load source of low-carbon power. Nuclear energy can help the U.S. meet its goals to reduce carbon pollution and meet clean air standards. The EPA is currently reviewing the more than 4.3 million comments received on the proposal, including comments about specific nuclear units and specific EGUs, and will

continue to consider this and other comments raised as we develop the requirements for the final Clean Power Plan.

Question 2. After the Clean Power Plan is finalized this year, states will be able to comply with it by designing state-specific plans that are responsive to State and local needs.

a. As states design their implementation plans, what flexibility will they have to support existing nuclear power beyond any mechanisms or crediting specifically included in the proposed rule?

b. Will there be ways states can specifically encourage nuclear units to operate beyond their initial licensing periods, to the extent units can do so safely?

Response. Nuclear power is part of an all-of-the-above, diverse energy mix and provides a reliable, base load source of low-carbon power. Nuclear energy can help the U.S. meet its goals to reduce carbon pollution and meet clean air standards. In the proposal, the EPA proposed to determine that finalizing construction of five new nuclear units at three plants and preserving nuclear power generation at existing plants across the country could be two cost-effective ways to avoid emissions from fossil fuel-fired power plants. One of the goals of the Clean Power Plan is to afford states the flexibility they require to meet the goals. The Clean Power Plan empowers the states to chart their own, customized path to meet their goals in a manner that is sensitive to the unique circumstances in each state. States may employ strategies, if they so choose, to encourage nuclear power. The EPA is currently reviewing the more than 4.3 million comments received on the proposal, including the comments on the treatment of nuclear power, and will respond to the issues raised in those comments when we issue a final Clean Power Plan.

Question 3. I have heard concerns about unintended consequences that could arise from the Clean Power Plan as proposed. Specifically, the dramatic early reduction requirements proposed in the rule may render several coal plants uneconomic, and therefore encourage states to turn to the rapid deployment of new natural gas combined cycle generation to satisfy their energy needs. Large amounts of new natural gas power plants have the potential to disincentivize construction of renewable and other clean energy technology for decades because states can comply with the Plan from the reduced carbon emissions from natural gas power plants. This has the potential to tilt the playing field in the power sector toward new natural gas fired power plant at the expense of renewable energy.

a. Can the EPA avoid the potential prioritization of power from natural gas power plants and encourage states to adopt renewable and clean energy technology?

b. Can you please provide me with an update on some of the modifications EPA is considering to ensure that the final Plan incentivizes the use of renewables to the maximum extent possible?

Response. The proposed Clean Power Plan builds on what states are already doing to reduce carbon pollution from existing power plants. It does not require that the states actually use each of the building blocks as they develop their plans for meeting the State goal. Instead, it empowers the states to chart their own, customized path to meet their goals.

Following publication of the proposed rule, EPA published a Notice of Data Availability [79 FR 64543, October 30, 2014] that provided additional information on certain issues that had been consistently raised by a diverse set of stakeholders, including ideas about the glide path of emission reductions from 2020–2029.

Question 4. Minority communities, including communities of color, are disproportionately affected by pollution. With President Clinton's 1994 Executive Order 12898, and President Obama's continued support for that executive order, the environmental justice movement has grown in the past couple of decades. The EPA, with the Clean Power Plan, has a unique platform to tackle issues of environmental justice and equity.

a. Is the EPA contemplating requiring states to consider the environmental justice impacts of their State implementation plans in order to comply with the Clean Power Plan?

b. If not, why not?

c. If so, will the EPA offer states guidance on ways to measure compliance for the environmental justice impacts of states' implementation plans?

Response. During our extensive outreach process, EPA met with environmental justice advocates and community leaders. The EPA is currently reviewing the more than 4.3 million comments received on the proposal, including comments about the proposal's consideration of environmental justice issues, and will respond to the issues raised in those comments when we issue a final Clean Power Plan.

RESPONSES BY JANET MCCABE TO ADDITIONAL QUESTIONS FROM SENATOR FISCHER

BUILDING BLOCK 1 (COAL PLANT EFFICIENCY)

• During our discussion at the hearing regarding Building Block 1 and the achievable heat rate improvements at coal-fired plants, you stated that EPA's assumption in going into the proposal "was not that every single source would be able to achieve exactly the amount of reductions [you] identified in each building block[you] believed that some can do more in one area and some may choose to do less in other areas." In Nebraska, there are no coal-fired power plants that are capable of achieving a heat rate improvement of 6 percent. Did EPA receive public comment from any utilities or State departments of environmental quality that identified any plant of being able to achieve this rate improvement? Or a rate that is more than the target identified by EPA?

• Do you acknowledge that EPA misused the Sargent & Lundy study in setting the heat rate improvement goals for Building Block 1?

• Installation of additional pollution control equipment will degrade a unit's heat rate performance. Given that regulations such as MATS and Regional Haze are driving the installation of more control equipment on coal-fired units, what type of adjustments will be made in the rule to account for such EPA-driven degradations?

Response. In the proposed Clean Power Plan, the EPA proposed four Building Blocks that make up the "best system of emission reduction adequately demonstrated" (BSER) that, in turn, serves as the basis for the State CO_2 emissions goals. The EPA discussed its justification for why those measures, including the heat rate improvement you mentioned which we identified as Building Block 1, qualify as part of the BSER to reduce emissions at regulated sources at length in the preamble for the proposed rule (79 Fed. Reg. 34,830, 34,878—34,892), the GHG Abatement Measures Technical Support Document (http://www2.epa.gov/sites/production/files/2014–06/documents/20140602tsd-ghg-abatement-measures.pdf), and the accompanying Legal Memorandum (Docket ID Number EPA-HQ-OAR–2013–0602–0419, pages 33–93). The EPA is currently reviewing the more than 4.3 million comments received on the proposal, including the comments on the issues addressed in the Technical Support Documents and the Legal Memorandum, and will respond to the issues raised in those comments when we issue a final Clean Power Plan.

BUILDING BLOCK 2 (NATURAL GAS CC UTILIZATION)

• Nebraska DEQ stated in its public comments that a 70 percent utilization rate at natural gas plants is neither sustainable, nor achievable. Nebraska does not have adequate natural gas supplies or pipeline infrastructure to sustain a 70 percent utilization rate of existing natural gas combined-cycle plants, particularly during colder months.2 FERC memos indicate that last April, FERC's Office of Electric Reliability told EPA that its assumptions in building block 2 overestimated natural gas combined cycle capacity factors and that FERC "had doubts about the ability to expand the pipeline infrastructure as quickly as the emission targets implied."3 Why didn't EPA go back and fix those assumptions based on FERC's feedback?

Response. In the proposed Clean Power Plan, the EPA proposed four Building Blocks that make up the "best system of emission reduction adequately demonstrated" (BSER) that, in turn, serves as the basis for the State CO_2 emissions goals. The EPA discussed its justification for why those measures, including the natural gas capacity factor you mentioned, qualify as part of the BSER to reduce emissions at regulated sources at length in the preamble for the proposed rule (79 Fed. Reg. 34,830, 34,878—34,892), the GHG Abatement Measures Technical Support Document (http://www2.epa.gov/sites/production/files/2014–06/documents/20140602tsd-ghg-abatement-measures.pdf), and the accompanying Legal Memorandum (Docket ID Number EPA-HQ-OAR–2013–0602–0419, pages 33–93). The EPA is currently reviewing the more than 4.3 million comments received on the proposal, including the comments on the issues addressed in the Technical Support Documents and the Legal Memorandum, and will respond to the issues raised in those comments when we issue a final Clean Power Plan.

BUILDING BLOCK 3 (RENEWABLES)

• The Nebraska Department of Environmental Quality thinks that its "disingenuous" to require states to undertake measures that the EPA itself may not have the authority to implement. What authority does EPA or the Nebraska DEQ have to mandate renewables?

Response. In the proposal, the EPA estimated the potential renewable energy available to states as part of BSER by developing a scenario based on Renewable Portfolio Standard (RPS) requirements already established by a majority of states. The basis for Building Block three is discussed at length in the preamble to the proposal (79 FR 34830–34950) and the GHG Abatement Measures Technical Support Document (http://www2.epa.gov/sites/production/files/2014–06/documents/20140602tsd-ghg-abatement-measures.pdf). EPA does not propose to require the inclusion of any particular type of measures as plans are developed for meeting the State goal. Instead, states are empowered to chart their own, customized paths to meet their goals.

Under Section 111(d) the EPA is proposing a two-part process where the EPA sets state-specific goals to lower carbon pollution from power plants, and then the states must develop plans to meet those goals. States develop plans to meet their goals, but EPA is not prescribing a specific set of measures for states to put in their plans. This gives states flexibility. States will choose what measures, actions, and requirements to include in their plans, and demonstrate how these will result in the needed reductions.

INTERIM TARGETS

• In December, I led a group of 23 Republican Senators in writing to EPA regarding key concerns with the proposed Clean Power Plan. Senator McCaskill led a parallel letter that was sent by a group of Democrat Senators raising the same concerns, including the unrealistic interim targets (known as the "2020 cliff"). The consequences of these front-loaded targets have been echoed by many stakeholders. Will you commit to removing these interim targets?

Response. The EPA's proposed State goals do not impose specific requirements on any individual source. Instead, states have the flexibility to choose their own compliance pathways. Following publication of the proposed rule, the EPA published a Notice of Data Availability [79 FR 64543, October 30, 2014] that provided additional information on certain issues that had been consistently raised by a diverse set of stakeholders, including ideas about the glide path of emission reductions from 2020–2029. The EPA is currently reviewing the more than 4.3 million comments received on the proposal, including the comments on the issues addressed in the Technical Support Documents and the legal memorandum, and will respond to the issues raised in those comments when we issue a final Clean Power Plan.

RFS

• As you know, renewable fuels like ethanol and biodiesel are an important economic driver in my state. Unfortunately, the EPA has yet to release their yearly volumes for both 2014 and 2015. When do you plan to release this rule? Will it no longer contain methodology that artificially limits the market access of biofuels producers?

Response. EPA has issued a proposed rule to establish renewable fuels volumes for 2014, 2015, and 2016, as well as biodiesel for 2017; the proposal was published in the Federal Register on June 10, 2015.

RESPONSES BY JANET MCCABE TO ADDITIONAL QUESTIONS FROM SENATOR SESSIONS

Question 1. In your written testimony, you State that if climate change is left unchecked, it will have "devastating impacts on the United States and the planet." You write further that "the costs of inaction are clear. We must act. That's why President Obama laid out a Climate Action Plan."

a. Does the United States Constitution authorize the executive branch to act unilaterally and impose regulatory mandates due to "inaction," or the absence of a valid authorization from Congress?

b. Bjorn Lomborg—who testified before the Clean Air and Nuclear Safety Subcommittee last Congress—wrote in the Wall Street Journal earlier this month about studies which have showed that in recent years, there have been fewer droughts, decreased hurricane damage, and a rise in temperatures that is 90 percent less than what many climate models had predicted. Mr. Lomborg's July 2014 testimony to the Subcommittee also indicated that the cost of climate "inaction" by the end of the century is equivalent to an annual loss of GDP growth on the order of 0.02 percent.

Given that recent temperature rises have been significantly less than what many climate models predicted, does it remain EPA's position that climate "inaction" will have "devastating impacts on the United States and the planet"? Does the agency agree or disagree with Mr. Lomborg's testimony regarding the minimal loss of GDP

growth due to climate "inaction"? Please provide all information, data, and studies used to support EPA's conclusion.

c. You are advocating dramatic action at great cost to the American people to avert "devastating impacts" of global warming. Before such costs are imposed on the people, it is essential that you lay out in detail the "devastating impacts on the United States" that EPA anticipates due to climate inaction. Please provide in detail these impacts as well as a timeline for when these impacts are expected to occur.

d. If the latest and best available science demonstrates that the climate impacts projected by EPA are not occurring, or are less than anticipated, would the agency be willing to reconsider its climate action policy?

Response. The EPA is acting pursuant to Section 111(d) of the Clean Air Act, which provides for the establishment of standards of performance for categories of stationary sources that contribute to dangerous air pollution. In the preamble to the proposed rule, we discussed the scientific basis for our action at page 79 FR 34841.

Question 2. EPA's Clean Power Plan is based in part on a "building block" which assumes states will achieve a 1.5 percent annual increase in demand-side energy efficiency.

a. Please provide the provisions in the United States Constitution and Clean Air Act which authorize EPA to base its Clean Power Plan on consumers increasing their energy efficiency. How does EPA intend to implement this particular "building block"? b. Please provide the peer-reviewed or technical studies which EPA used to establish the "building block" for a 1.5 percent annual increase in demand-side efficiency. c. To what extent did EPA account for population growth in establishing a "building block" whose purpose is to reduce aggregate demand on power plants?

Response. The basis for EPA's fourth Building Block, demand-side energy efficiency, is the proposed conclusion that over time states can achieve electricity savings of 1.5 percent annually. This Building Block is one of four that make up the "best system of emissions reduction adequately demonstrated" (BSER) that, in turn, serves as the basis for the State CO2 goals. The basis for Building Block four is discussed at length in the preamble to the proposal (79 FR 34830–34950) and the GHG Abatement Measures Technical Support Document (http://www2.epa.gov/sites/production/files/2014–06/documents/20140602tsd-ghg-abatement-measures.pdf). EPA does not propose to require the inclusion of any particular type of measures, including demand-side energy efficiency, as plans are developed for meeting the State goal. Instead, states are empowered to chart their own, customized paths to meet their goals. The EPA is currently reviewing the more than 4.3 million comments received on the proposal, including the comments on the issues addressed in the Technical Support Documents and the Legal Memorandum, and will respond to the issues raised in those comments when we issue a final Clean Power Plan.

Question 3. EPA claims that the Clean Power Plan's "timing flexibility" will allow municipally owned utilities and some electric cooperatives to "use both short-term dispatch strategies and longer-term capacity planning strategies to reduce GHG emissions." However, these providers often purchase power from dedicated units, sometimes crossing State lines, on long-term contracts. Long-term contracts in many circumstances yield the most reliable pricing. How does EPA reconcile the interim goals contained in the Clean Power Plan with the need of municipally owned utilities and some electric cooperatives to enter into long-term contracts in order to provide reliable pricing for their customers?

Response. The EPA's proposed State goals do not impose specific requirements on any individual source. Instead, states have the flexibility to choose their own compliance pathways. Following publication of the proposed rule, EPA published a Notice of Data Availability [79 FR 64543, October 30, 2014] that provided additional information on certain issues that had been consistently raised by a diverse set of stakeholders, including ideas about the glide path of emission reductions from 2020–2029. The EPA is currently reviewing the more than 4.3 million comments received on the proposal, including the comments on the issues addressed in the Technical Support Documents and the Legal Memorandum, and will respond to the issues raised in those comments when we issue a final Clean Power Plan.

Question 4. During a recent taxpayer-funded trip to the Vatican, Administrator McCarthy indicated that it is important to look after the well-being of persons living in poverty. What has EPA done to evaluate the adverse wage and employment impacts that have fallen on middle-class workers?

Response. Consistent with statute, Executive Order, and OMB guidance, the EPA conducted a Regulatory Impact Analysis that shows the benefits and costs of illustrative scenarios states may choose in complying with the proposed Clean Power Plan. Because states have flexibility in how to meet their goals, the actions taken to meet the goals may vary from what is modeled in the illustrative scenarios. Spe-

cific details, including information about how costs and benefits are estimated are available in the RIA (http://www2.epa.gov/sites/production/files/20 1 4–06/documents/20 140602ria-clean-powerplan.pdf).

Question 5. In recent years, the U.S. Army Corps of Engineers has proposed operational changes that would diminish the amount of hydropower available to communities in Alabama. Please explain how EPA's proposed carbon dioxide emissions rules account for Army Corps decisions which may adversely affect the ability of Alabama communities to rely on hydropower as a low-carbon source of energy.

Response. The proposed Clean Power Plan builds on what states are already doing to reduce carbon pollution from existing power plants. It does not require that the states actually use each of the building blocks as they develop their plans for meeting the State goal. Instead, it empowers the states to chart their own, customized path to meet their goals. The EPA is currently reviewing the more than 4.3 million comments received on the proposal, including comments about the proposal's consideration of existing zero-emitting energy sources, and will respond to the issues raised in those comments when we issue a final Clean Power Plan.

Question 6. President Obama has stated that "we need to increase our supply of nuclear power," and that we should be "building a new generation of safe, clean nuclear power plants in this country." How many new reactors, in addition to those currently under construction, are necessary to enable compliance under EPA's base case for the proposed rule?

Response. Nuclear power is part of an all-of-the-above, diverse energy mix and provides a reliable, base load source of low-carbon power. New nuclear units were not projected and incorporated into the setting of the proposed Best System of Emission Reduction (BSER). The proposed Clean Power Plan builds on what states are already doing to reduce carbon pollution from existing power plants. The Clean Power Plan empowers the states to chart their own, customized path to meet their goals in a manner that is sensitive to the unique circumstances in each state.

Question 7. In its 2012 decision remanding the Nuclear Regulatory Commission's Waste Confidence rule, the DC Circuit Court observed:

> *"At this time, there is not even a prospective site for a repository, let alone progress toward the actual construction of one. The lack of progress on a permanent repository has caused considerable uncertainty regarding the environmental effects of temporary [spent nuclear fuel] storage and the reasonableness of continuing to license and relicense nuclear reactors."*

The Administration's actions to shut down the Yucca Mountain program caused a Federal court to question the reasonableness of licensing nuclear plants, triggering a 2-year licensing moratorium at the NRC. The NRC has since revised its rule, which has once again been challenged by the NRDC, a proponent of the Clean Power Plan.

Response. Given that nuclear energy generates nearly two-thirds of our nation's carbon-free electricity, how does EPA envision achieving carbon reductions if our largest source of carbon-free electricity is threatened based on the Administration's decision to illegally abandon the Yucca Mountain project?

Nuclear power is part of an all-of-the-above, diverse energy mix and provides a reliable, base load source of low-carbon power. New nuclear units were not projected and incorporated into the setting of the proposed BSER. The proposed Clean Power Plan builds on what states are already doing to reduce carbon pollution from existing power plants. The Clean Power Plan empowers the states to chart their own, customized path to meet their goals in a manner that is sensitive to the unique circumstances in each state.

RESPONSES BY JANET MCCABE TO ADDITIONAL QUESTIONS FROM SENATOR SULLIVAN

Question 1. Has the EPA conducted any analysis specific to Alaska that proves the Proposed Rule on existing plants can be reasonably implemented and would not impair electricity reliability in Alaska? Do you have modelling or cost information specific to Alaska? Do you have any analysis specific to Interior Alaska? Please provide all relevant data.

Response. Consistent with statute, Executive Order, and OMB guidance, the EPA conducted a Regulatory Impact Analysis that shows the benefits and costs of illustrative scenarios states may choose in complying with the proposed Clean Power Plan. Because states have flexibility in how to meet their goals, the actions taken to meet the goals may vary from what is modeled in the illustrative scenarios. Specific details, including information about how costs and benefits are estimated are

available in the RIA (http://www2.epa.gov/sites/production/files/20 1 4–06/documents/20 140602ria-clean-powerplan.pdf).

Question 2. How much flexibility is the EPA prepared to provide states if efficiency upgrades to power plants, building new generation sources, new or upgraded transmission lines or new natural gas pipelines are slowed down or stopped because of environmental reviews or litigation?

Response. The proposed Clean Power Plan builds on what states are already doing to reduce carbon pollution from existing power plants. It does not require that the states actually use each of the building blocks as they develop their plans for meeting the State goal. Instead, it empowers the states to chart their own, customized path to meet their goals. Under the proposal, the states have a flexible compliance path that allows them to design plans sensitive to their needs, including considering the time it will take to put in place the necessary infrastructure.

Question 3. Alaska's grid is quite limited, and most of our utilities are not interconnected. Also, Alaska is islanded, as we are not connected to the North American power grid. Does the Proposed Rule for existing plants contemplate this scenario?

The Clean Power Plan proposal contemplated that some aspects of the four building blocks might apply differently in particular locations, including Alaska and Hawaii. One example of this is on 79 FR 34867, where we proposed to treat Alaska and Hawaii as separate regions in estimating the reductions they could achieve by increasing renewable energy generation under Building Block 3.

4) Alaska has a single transmission line north and south of Anchorage with limited transference capacity. One of the presumptions of EPAs "building blocks" is the notion that more efficient combined-cycle gas generation can be substituted for coal-fired generation. Will there be exceptions made for states where the grid does not allow the transfer of sufficient quantities of energy to replace local coal-fired generation?

Response. The proposed Clean Power Plan builds on what states are already doing to reduce carbon pollution from existing power plants. It does not require that the states actually use each of the building blocks as they develop their plans for meeting the State goal. Instead, it empowers the states to chart their own, customized path to meet their goals. Under the proposal, the states have a flexible compliance path that allows them to design plans sensitive to their needs, including considering the time it will take to put in place the necessary infrastructure.

In the proposed Clean Power Plan, the EPA proposed four Building Blocks that make up the "best system of emission reduction adequately demonstrated" (BSER) that, in turn, serves as the basis for the State CO_2 emissions goals. The EPA discussed its justification for why those measures, including the increased utilization of existing natural gas capacity which we identified as Building Block 2, qualify as part of the BSER to reduce emissions at regulated sources at length in the preamble for the proposed rule (79 Fed. Reg. 34,830, 34,878—34,892), the GHG Abatement Measures Technical Support Document (http://www2.epa.gov/sites/production/files/2014–06/documents/20140602tsd-ghg-abatement-measures.pdf),and the accompanying Legal Memorandum (Docket ID Number EPA-HQ-OAR–2013–0602–0419, pages 33–93). The EPA is currently reviewing the more than 4.3 million comments received on the proposal, including comments on the availability of transmission to deliver energy where there are dispatch changes, and will respond to the issues raised in those comments when we issue a final Clean Power Plan.

Question 5. Currently, natural gas powered electricity generation is not available in Interior Alaska, and due to geographical challenges, natural gas may not be an economical option for electricity generation in the near future. How much flexibility is EPA prepared to provide based on geographic challenges such as those faced in Interior Alaska?

Response. The EPA's proposed State goals do not impose specific requirements on any individual source or sub-region. The proposed Clean Power Plan builds on what states are already doing to reduce carbon pollution from existing power plants. It does not require that the states actually use each of the building blocks as they develop their plans for meeting the State goal. Instead, it empowers the states to chart their own, customized path to meet their goals. Under the proposal, the states have a flexible compliance path that allows them to design plans sensitive to their needs, including considering the time it will take to put in place the necessary infrastructure. The proposal discussed the availability of new natural gas capacity at 79 FR 34857.

Question 6. EPA's Legal Memorandum accompanying the Proposed Rule for existing plants states, "Central to our Best System of Emission Reduction (BSER) determination is the fact that the nation's electricity needs are being met, and have for many decades been met, through a grid formed by a network connecting groups of

Electric Generating Units (EGUs) with each other and, ultimately, with the end users of electricity Through the interconnected grid, fungible products—electricity and electricity services—are produced and delivered by a diverse group of EGUs operating in a coordinated fashion in response to end users' demand for electricity." How does this rationale apply to Alaska? Please explain.

Response. Along with the proposed rule, the EPA included in the docket a Legal Memorandum providing background for the legal issues raised by the rule. In addition to the preamble, that Legal Memorandum details the EPA's understanding, at the time of proposal, of the legal rationale for our proposed determination of BSER. That document can be found using Docket ID Number EPA-HQ-OAR–2013–0602–0419. The EPA is currently reviewing the more than 4.3 million comments received on the proposal, including the comments on the interconnected nature of the electric grid and comments on specific locations where there may be more localized needs, and will respond to the issues raised in those comments when we issue a final Clean Power Plan.

Question 7. What consultation occurred with states during the rulemaking process? Were any State of Alaska officials involved in the drafting of the proposed rules?

Response. The outreach to and response from the public on the Clean Power Plan has been unprecedented, including outreach to and feedback from stakeholders from all 50 states. EPA has met with and heard from both government and utility stakeholders in Alaska. More than 4.3 million comments have been submitted and EPA is examining and carefully considering all the issues raised in those comments.

Question 8. Do you think the resources that will be spent in Alaska complying with the Proposed Rule on existing plants could be better spent helping our bush communities move away from expensive diesel generation and toward more cleaner and inexpensive options?

Response. The proposed Clean Power Plan builds on what states are already doing to reduce carbon pollution from existing power plants. It does not require that the states actually use each of the building blocks as they develop their plans for meeting the State goal. Instead, it empowers the states to chart their own, customized path to meet their goals. Under the proposal, the states have a flexible compliance path that allows them to design plans sensitive to their needs.

Question 9. Fairbanks is reliant on coal fired power. A recent University of Alaska study determined that coal fired technology is the only viable affordable option for Interior Alaska's electric generation. Fairbanks is also in a PM 2.5 nonattainment area. If our Interior coal plants shut down, or the rates increase even higher than they are already, more Fairbanks residents will begin heating their homes with wood stoves and further aggravate the PM 2.5 issue. Have you given any thought to how the EPA will help mitigate the social and economic impacts on communities if these rules are finalized? Has the EPA conducted any analysis on unrelated consequences of this Proposed Rule on existing plants, such as the PM2.5 issue?

Response. The EPA's proposed State goals do not impose specific requirements on any individual source. The proposed Clean Power Plan builds on what states are already doing to reduce carbon pollution from existing power plants. It does not require that the states actually use each of the building blocks as they develop their plans for meeting the State goal. Instead, it empowers the states to chart their own, customized path to meet their goals. Under the proposal, the states have a flexible compliance path that allows them to design plans sensitive to their needs, including considering the time it will take to put in place the necessary infrastructure.

Consistent with statute, Executive Order, and OMB guidance, the EPA conducted a Regulatory Impact Analysis that shows the benefits and costs of illustrative scenarios states may choose in complying with the proposed Clean Power Plan. Because states have flexibility in how to meet their goals, the actions taken to meet the goals may vary from what is modeled in the illustrative scenarios. Specific details, including information about how costs and benefits are estimated are available in the RIA (http://www2.epa.gov/sites/production/files/20 1 4–06/documents/20 140602ria-clean-powerplan.pdf).

RESPONSES BY JANET MCCABE TO ADDITIONAL QUESTIONS FROM SENATOR VITTER

FOCUSING ON NRDC RELATIONSHIP WITH EPA

Under the Clean Air Act § 307(d), EPA is required to post all written comments and documentary information received in the docket, including information obtained through emails, phone calls, and meetings with Agency officials. Documents obtained by the Committee pursuant to a request for communications regarding the

ESPS and NSPS rules between EPA and NRDC reveal a significant amount of correspondence that EPA did not post to the rulemaking docket. While the requirement does grant the Agency discretion over what information is material to the rule, the fact more than a dozen phone calls and meetings on the rules were excluded from the docket raises questions over EPA's level of transparency in developing the rules.

Question 1. Ms. McCabe, as you are aware, I submitted requests for documents on these rules last Congress. While I understand the Agency is still producing documents to the Committee, a review of those in the Committee's possession reveal a pattern of frequent meetings and phone calls between EPA and NRDC. Not only am I concerned by the increased access NRDC had to EPA officials developing these rules, but there is a real concern over a number of meetings and calls that EPA did not include in the rulemaking docket. Ms. McCabe, are you aware of such correspondence not being posted to the docket? Why do you think some correspondence with NRDC over others was excluded from the docket? Will you commit to correcting the docket?

Response. Any rule we finalize will comply with all applicable statutory public participation requirements, including posting documents to the docket.

Question 2. In one of the emails you released last fall as part of your investigation into EPA's relationship with NRDC. One email in particular is important given the fact that many states are just going to refuse to implement a rule they view as illegal and an inappropriate usurpation of power.

Response. ESPS requires states to submit a State implementation plan (SIP) for EPA's approval, which demonstrates how the State will meet emission goals. Under 111(d), EPA has the authority to issue a Federal implementation plan (FIP) for states that do not submit a SIP or submit an unsatisfactory SIP. While the EPA has said ESPS encourages State flexibility in developing SIPs, evidence suggests EPA is being disingenuous and is inclined to issue a backstop FIP. An email obtained by the Committee reveals that the idea of a Federal takeover of states through ESPS FIPs may have come from the NRDC. In the email, NRDC attorney Dave Hawkins advises senior EPA air official Joe Goffman how EPA can tamper with State compliance dates and issue backstop FIPs.

Question 3. Ms. McCabe, documents obtained by the Committee suggests that NRDC helped develop the Agency's strategy for issuing a model FIP to circumvent State implementation challenges. [SHOW POSTER] Specifically, in June 2013—before the rule was proposed—NRDC attorney Dave Hawkins advised senior EPA air official Joe Goffman, "as long as the compliance date for the FIP 111(d) emission limits is a few years after the SIP submission deadline, it appears that EPA can promulgate backstop FIP limits even in advance of the June 2016 SIP submission date." Why was NRDC providing such detailed advice to EPA before the rule was even proposed? Prior to the email, had EPA considered issuing a model FIP? Did NRDC's advice have any bearing on the model FIP EPA is currently developing? Is EPA in fact planning to issue its model FIP before the SIP deadline?

Response. The Clean Air Act provides for EPA to write a Federal plan if a State does not put an approvable State plan in place. In response to requests from states and stakeholders since the proposed Clean Power Plan was issued, EPA announced in January 2015 that we will be starting the regulatory process to develop a rule that would set forth a proposed Federal plan and could provide an example for states as they develop their own plans. EPA fully expects that, as contemplated by the Clean Air Act, states will want to submit their own plans, and will use that as an opportunity to tailor their plans to their specific needs and priorities. The agency expects to issue the proposed Federal plan for public review and comment in summer 2015.

Question 4. Ms. McCabe, I think EPA is delusional if the agency believes there isn't going to be a serious problem with a number of states refusing to implement the ESPS and put forward a State implementation plan. Has EPA begun developing a litigation strategy with NRDC to force compliance or otherwise enter into settlement agreements? And has NRDC, which is perhaps America's largest environmental law firm, discussed options for NRDC to help pay for energy price increases. In other words, NRDC is worth hundreds of millions of dollars, if they're so comfortable increasing energy prices on America's poor and elderly have they discussed with you options for using some of their endowment to help the consumers they plan on hurting

Response. The EPA is not coordinating with outside organizations in the manner you suggest.

SOCIAL COST OF CARBON

EPA's regulatory impact analysis for ESPS is primarily based on climate benefits derived from the convoluted 2013 social cost of carbon (SCC) estimates, as well as of course the PM benefits that EPA's now infamous fake CIA agent John Beale worked on. You have made several requests, along with other Members of Congress, for information on the Interagency Working Group (IWG) that developed the estimates. None of the Administration's responses have been fully responsive to such requests. There is still zero transparency over who participated and the extent of their participation.

Question 1. Ms. McCabe, you may recall I previously asked whether or not you participated in the Interagency Working Group developing the social cost of carbon (SCC) estimates, and I know at that time your answer was no. I also know that despite congressional requests for information, the SCC remains stuck in a black box. There is still zero transparency. And since we last spoke on this topic, the EPA proposed the ESPS—one of the most expansive and expensive regulations—which relies on climate benefits from the flawed and secretive SCC. That said, what was your role in developing the cost-benefit analysis for ESPS which relied on the SCC? Have you had any interaction with the SCC Interagency Working Group? Why have you not provided my office with the names and titles of those officials under your supervision in the Office of Air Radiation that have participated in the Interagency Working Group?

Response. Consistent with the Office of Management and Budget's guidance, the SCC estimates are used in the EPA's analyses of regulations subject to benefit-cost analysis under E.O. 12866 and 13563 to estimate the welfare effects of quantified changes in carbon dioxide (CO_2) emissions. The SCC estimates were applied in the benefit-cost analysis for the proposed Clean Power Plan in the same way they are for other EPA regulatory actions subject to E.O. 12866 and 13563.

As noted in the EPA's response to previous letters from you on this topic, EPA officials from both the Office of Policy (OP) and the Office of Air and Radiation (OAR) participated in the interagency SCC discussions, including technical staff (economists and climate scientists) from the National Center for Environmental Economics in OP and the Office of Atmospheric Programs in OAR. The EPA staff provided technical expertise in climate science and economics to the broader workgroup as needed. For example, the professional economic staff used the modeling input parameters developed by the interagency group and oversaw the primary modeling and calculations for both the 2010 and the 2013 SCC estimates. Consistent with the Administration's commitment to transparency, the EPA has, upon request, provided to researchers and institutions more detailed output than is presented in the 2010 or 2013 Technical Support Document (TSD), as well as instructions, input files, and model source code.

GAO completed a review of the process the Interagency Working Group (IWG) used to develop the SCC estimates and published a report in 2014, "Regulatory Impact Analysis: Development of Social Cost of Carbon Estimates," that discusses the participating entities, and processes and methods the IWG used to develop the 2010 and 2013 SCC estimates. After interviews with scientists and officials who participated in the development of the SCC, along with reviews of relevant technical documents, the GAO concluded that the IWG (1) used consensus-based decisionmaking, (2) relied on existing academic literature and modeling, and (3) took steps to disclose limitations and incorporate new information by considering public comments and revising the estimates as updated research became available. The GAO also highlighted the various opportunities for public input on the SCC in general and the interagency estimates, including public comments received in response to numerous rulemakings. The GAO concluded that the level of documentation for this interagency exercise was equivalent to those from other comparable interagency exercises.

Finally, while I do not attend IWG meetings, I am aware that the Office of Management and Budget (OMB) recently responded to public comments received through OMB's solicitation for comments on the SCC. The OMB comment solicitation was conducted independently from, and in addition to, multiple opportunities for comment on individual agency rulemakings. As explained in the response document, after careful evaluation of the full range of comments, the IWG believes the SCC estimates continue to represent the best scientific information on the impacts of climate change available for incorporating the impacts from carbon pollution into regulatory analyses and continues to recommend their use until further updates can be incorporated into the estimates. Therefore, EPA will continue to use the current SCC estimates in the analysis of the Clean Power Plan.

TECHNICAL QUESTIONS

Question 1. In his Presidential Memorandum directing the Agency to undergo this rulemaking process, President Obama explicitly directs EPA to take "into account other relevant environmental regulations and policies that affect the power sector" and to "tailor regulations and guidelines to reduce costs". In the event that a coal-fired power plant has invested hundreds of millions of dollars to comply with EPA rules such as the Mercury Air Toxics Standard and the Cross State Air Pollution Rule, how does EPA's Clean Power Plan ensure that such an entity will be able to meet its financial obligations due to these investments?

Response. The EPA's proposed State goals do not impose specific requirements on any individual source. Instead, states have the flexibility to choose their own compliance pathways, including avoiding stranded assets. Following publication of the proposed rule, EPA published a Notice of Data Availability [79 FR 64543, October 30, 2014] that provided additional information on certain issues that had been consistently raised by a diverse set of stakeholders, including ideas about the glide path of emission reductions from 2020–2029 and other topics that have been identified as potentially related to the remaining asset value of existing coal-fired generation.

Question 2. Beyond achieving a certain level of efficiency gains, there are no commercially available technologies to reduce CO2 emissions from coal-fired power plants. According to EPA's regulatory impact analysis, the Clean Power Plan will increase electricity rates. For certain coal plants operating in organized electricity markets, this increased cost is likely to reduce plant production to the extent that alternative lower emitting sources of production are less expensive and hence will operate at higher utilization rates. Thus, the financial impact on the generating unit will be a combination of lower revenues associated with lower production and lower earnings associated with higher costs not being offset by higher sales revenues. As CO_2 emission standard compliance costs increase, reductions in production will increase.

These increased costs will lead to different outcomes for certain coal-dominated entities, including rural electric cooperatives, municipals, and merchant power producers. Higher electricity costs will be either (1) borne directly by ratepayers, in the case of a cooperative or municipal; or (2) result in decreased financial operating margins, in the case of a generator dependent solely on the wholesale market for revenues. Do you agree with these conclusions? If not, please explain why. Please further explain how EPA plans to address these disproportionate impacts, and how a State in a SIP would be allowed to deal with them.

Response. The EPA's proposed State goals do not impose specific requirements on any individual source. Instead, states have the flexibility to choose their own compliance pathways, including avoiding stranded assets and maintaining electric reliability. Consistent with statute, Executive Order, and OMB guidance, the EPA conducted a Regulatory Impact Analysis that shows the benefits and costs of illustrative scenarios states may choose in complying with the proposed Clean Power Plan. Because states have flexibility in how to meet their goals, the actions taken to meet the goals may vary from what is modeled in the illustrative scenarios. This assessment found that nationally, in 2030 when the plan is fully implemented, average electricity bills would be expected to be roughly 8 percent lower than they would been without the actions in State plans. That would save Americans about $8 on an average monthly residential electricity bill, savings they wouldn't see without the states' efforts under this rule. Specific details, including information about how costs and benefits are estimated are available in the RIA (http://www2.epa.gov/sites/production/files/20 1 4–06/documents/20 140602ria-clean-powerplan.pdf).

EUROPEAN DISASTER QUESTION

Question 1. Fortunately last Congress we had some really great witnesses that were able to testify on the State of climate science, and the fact that our climate always has been and always will be changing, as well as to the impacts policies similar to what EPA is trying to implement have had on the citizens and economies of European countries that have adopted similar requirements. Can you provide for me your thoughts on how Germany, Spain, France and the U.K. have benefited from their global warming polices and energy mandates? Specifically, can you walk me through how the changes in energy prices have impacted the poor and elderly as well as the economies and investment in those countries? And of Germany, Spain, France and the U.K., which ones do you think stand out as a good model for what EPA wants to do with the ESPS and regulating CO_2 ?

The EPA did not use any European country as a model in designing the Clean Power Plan.

SCIENCE QUESTIONS

Question 1. Is carbon dioxide critical to the process of photosynthesis and life on earth?

Response. Yes.

Question 2. As EPA moves forward with regulating carbon dioxide will carbon dioxide be the first gas regulated under the Clean Air Act that humans exhale at a higher rate than they inhale?

Response. No.

Question 3. What percent of CO_2 in the atmosphere is emitted by humans?

Response. Approximately 30 percent of the CO_2 level in earth's atmosphere today is a result of emissions caused by human activities, primarily the combustion of fossil fuels.

Question 4. In earth's geologic history is their evidence that CO_2 2 in the atmosphere has been higher than it is today?

Response. Response. Yes, though not for at least 800,000 years.

Question 5. In 2009 Al Gore predicted "The entire north polar ice cap will be gone in 5 years." Did this prediction come true?

Response. I am not familiar with the quote you mention. When referencing Arctic sea ice trends, the EPA relies on the major scientific assessments and standard sources like the National Snow and Ice Data Center. Arctic sea ice has continued to decline, at an average of 13 percent per decade in September over the satellite era. The Arctic sea ice minimum in September •12 was the lowest extent ever observed, at 49 percent below the 1979 to 2000 average.

Question 6. Stephen Schneider, who authored The Genesis Strategy, a 1976 book warning that global cooling risks posed a threat to humanity, later changed that view 180 degrees when he served as a lead author for important parts of three sequential IPCC reports. In an article published in Discover, he said: "On the one hand, as scientists we are ethically bound to the scientific method, on the other hand, we are not just scientists, but human beings as well. And like most people, we'd like to see the world a better place, which in this context translates into our working to reduce the risk of potentially disastrous climatic change. To do that, we need to get some broad-based support, to capture the public's imagination. That, of course, entails getting loads of media coverage. So we have to offer up scary scenarios, make simplified, dramatic statements, and make little mention of the doubts we might have. Each of us has to decide what the right balance is between being effective and being honest." Does EPA agree with these statements?

Response. The EPA is committed to using sound science and data as the foundation for protecting human health and the environment. For climate change, we rely primarily on the scientific assessments of the U.S. Global Change Research Program (USGCRP), the United Nations Intergovernmental Panel on Climate Change (IPCC) and the National Research Council (NRC) of the National Academies. These assessments synthesize and assess research across the entire body of scientific literature, including consideration of uncertainty, in their development of key scientific findings.

Question 7. Timothy Wirth, former U.S. Senator (D-CO) and former U.S. Undersecretary of State for global issues, at the first U.N. Earth Climate Summit Rio de Janeiro stated: "We have got to ride the global warming issue. Even if the theory of global warming is wrong, we will be doing the right thing in terms of economic policy and environmental policy." Does EPA agree with these statements?

Response. I am not familiar with the statement you mention. That said, as the National Research Council of the National Academy of Sciences has stated, "there is a strong, credible body of evidence, based on multiple lines of research, documenting that climate is changing, and that these changes are in large part caused by human activities."

Question 8. Speaking at the 2000 U.N. Conference on Climate Change in the Hague, former President Jacques Chirac of France explained why the IPCC's climate initiative supported a key Western European Kyoto Protocol objective: "For the first time, humanity is instituting a genuine instrument of global governance, one that should find a place within the World Environmental Organization which France and the European Union would like to see established." Does EPA support reaching a treaty in Paris so that there can be a "global governance" of U.S. economic policy?

Response. No.

Question 9. On November 14, 2010, Ottmar Edenhofer, a U.N. IPCC Official, stated, "First of all, developed countries have basically expropriated the atmosphere of

the world community. But one must say clearly that we redistribute de facto the world's wealth by climate policy. Obviously, the owners of coal and oil will not be enthusiastic about this. One has to free oneself from the illusion that international climate policy is environmental policy. This has almost nothing to do with environmental policy anymore . . .'' Does EPA agree with these statements?

Response. I am not familiar with the statement you mention. The EPA's analysis of the Clean Power Plan proposal makes clear that there is a significant role for coal and natural gas in our electricity generating mix going forward.

Question 10. Attorney David Sitarz, a key editor of the UN's Agenda 21 document, stated at the UN's 1992 Conference on Environment and Development in Brazil, ''Effective execution of Agenda 21 will require a profound reorientation of all human society, unlike anything the world has ever experienced—a major shift in the priorities of both governments and individuals and an unprecedented redeployment of human and financial resources. This shift will demand that a concern for the environmental consequences of every human action be integrated into individual and collective decisionmaking at every level.'' Does EPA agree with these statements?

Response. I am not familiar with the statement you mention. The proposed Clean Power Plan builds on what states are already doing to reduce carbon pollution from existing power plants.

OTHER

Question 1. Section 111 of the Clean Air Act provides EPA the authority to regulate new and existing ''stationary sources'' which it defines under subsection (a) as ''any building, structure, facility, or installation which emits or may emit any air pollutant''. That seems pretty straight forward, and yet you propose a rule for existing sources that would force states to significantly increase renewable—which do not emit any air pollutants. What percent of the claimed reductions under your proposed rule does EPA anticipate will come from increases in renewable energy? Given the plain meaning of the statute, how can you set a standard that in essence relies on such an increase in renewable power—a non-emitting source of electricity not covered by Section 111?

Response. Along with the proposed rule, the EPA included in the docket a Legal Memorandum providing background for the legal issues raised by the rule. In addition to the preamble, that Legal Memorandum details the EPA's understanding, at the time of proposal, of the legal issues in the proposal. That document can be found using Docket ID Number EPA-HQ-OAR–2013–0602–0419. The EPA is currently reviewing the more than 4.3 million comments received on the proposal, including the comments on the issues addressed in the legal memorandum, and will respond to the issues raised in those comments when we issue a final Clean Power Plan.

Question 2. Section 111(d), the authority for the Clean Power Plan, regulates existing sources. However, your proposed rule seeks comment on including new sources in a state's 111(d) plan. What new sources do you think should be included in a state's plan for existing sources. Isn't it true that Section 111 has a separate subsection for the regulation of new sources under subsection (b)—not (d). Why do you think you have the authority to regulate new sources under section 111(d)?

Response. Along with the proposed rule, the EPA included in the docket a Legal Memorandum providing background for the legal issues raised by the rule. In addition to the preamble, that Legal Memorandum details the EPA's understanding, at the time of proposal, of the legal issues in the proposal. That document can be found using Docket ID Number EPA-HQ-OAR–2013–0602–0419. The EPA is currently reviewing the more than 4.3 million comments received on the proposal, including the comments on the issues addressed in the Legal Memorandum, and will respond to the issues raised in those comments when we issue a final Clean Power Plan.

Question 3. Your proposed rule for NEW units would require CCS for new coal units despite the fact that CCS has not been adequately demonstrated and is not considered to be commercially viable. In fact a recent DOE authorized study just concluded in January that ''CCS does not yet meet this best system of emission reduction (BSER) standard, because it has not yet been adequately demonstrated.'' (pg 103 of http://insideepaclimate.com/sites/insideepaclimate.com/files/documents/jan2015/epa20 15—0144.pdf) What will happen to your existing plant rule if your new rule is overturned in Court? Do you believe you have the authority under Section 111 to issue an existing plant rule if your rule for new units is vacated?

Response. Along with the proposed rule, the EPA included in the docket a Legal Memorandum providing background for the legal issues raised by the rule. In addition to the preamble, that Legal Memorandum details the EPA's understanding, at the time of proposal, of the legal issues in the proposal. That document can be found using Docket ID Number EPA-HQ-OAR–2013–0602–0419. The EPA is currently re-

viewing the more than 4.3 million comments received on the proposal, including the comments on the issues addressed in the Legal Memorandum, and will respond to the issues raised in those comments when we issue a final Clean Power Plan.

Question 4. There are many coal plants out there that have just spent millions of dollars to comply with the MATS rule. And yet, under your proposed rule, these units will likely be allowed to run only at very low capacity levels that make the units uneconomical. Has there ever been a major rulemaking by EPA where the standard was not based on specific control technologies but rather a limit on how often a unit can be run? Do you believe the CAA allows you to establish regulations that can force the closure of existing coal plants by establishing de-facto limits on how often they can run?

Response. The EPA's proposed State goals do not impose specific requirements on any individual source. The proposed Clean Power Plan builds on what states are already doing to reduce carbon pollution from existing power plants. It does not require that the states actually use each of the building blocks as they develop their plans for meeting the State goal. Instead, it empowers the states to chart their own, customized path to meet their goals.

Question 5. If you are forced to issue a Federal implementation plan, which entities do you have enforcement authority over in the context of this rulemaking? Do you believe EPA can enforce renewable energy targets or demand side management programs in a State that fails to submit an implementation plan? Does your authority extend to the states directly or just to the existing stationary sources as defined by the Clean Air Act? If your answer is that you are working through these issues now—how EPA can propose a rule without knowing the limits of its own regulatory authorities?

Response. Under a State plan approved under Clean Air Act (CAA) § 111(d), all measures that a State adopts into the plan and submits to EPA for approval, and that EPA approves, become federally enforceable. Under the proposed rule, the states have significant discretion in determining what types of measures to adopt and submit to EPA for approval. The EPA will approve a State plan if it meets the State goal. EPA discussed the concept of Federal enforceability, including the availability of citizen suits, in the preamble to the proposed rule (79 Fed. Reg. 34,830, 34,902–34,903) and the accompanying legal memorandum (Docket ID Number EPA-HQ-OAR–2013–0602–0419, PAGE 4) and the agency will review any comments we receive on this issue.

Senator INHOFE. Thank you very much, Ms. McCabe.

We are going to be using the early bird rule. It is my understanding that Senator Markey is under a time constraint. I think the Ranking Member is going to let you have her time. It is my understanding that also Senator Fischer has some time constraints. I would be very happy to yield my time to her for questions.

We are going to have 8 minute rounds. Senator Fischer.

Senator FISCHER. Thank you, Mr. Chairman, for your courtesy. Thank you, Ranking Member.

Thank you, Ms. McCabe, for being here today. I am glad to have the opportunity to talk with you about the impacts of your power plant rules on my home State of Nebraska.

As you know, Nebraska is the only State in the Nation with a wholly, publicly owned utility power sector. Public power utilities are cost-based entities with no profit motivation or obligation to provide stakeholder dividends.

That is vitally important, I believe, to keep in mind as EPA considers these proposed rules. The compliance costs will be directly borne by Nebraska residents through their electric rates.

Today, I would like to touch on some of the concerns raised in the public comment period by my State's public power utilities and by the Nebraska Department of Environmental Quality regarding the mandates for carbon emission reductions from existing power plants.

Our State has written that the building blocks contain "inaccurate assumptions and unrealistic expectations that will result in emission goals that may be unattainable regardless of the emission reduction strategies employed."

Let us start with building block ONE. The Nebraska DEQ states, "Heat rate improvements of 4 to 6 percent are not achievable at Nebraska coal-fired plants. Nebraska utilities are required by law to deliver least cost reliable electricity. As such, they have already implemented most if not all achievable heat rate improvements at existing facilities.

As you know, as a basis for setting the building block 1 level, EPA relied on a 2009 study by Sargent and Lundy. It is now widely known that EPA misconstrued this study, hypothesizing heat rate improvements discussed in the study on a cumulative basis when this was not indicated by the study.

In fact, the Sargent and Lundy has explicitly stated that "the ranges presented in the report "do not support the conclusion that any individual, coal-fired, EGU or any aggregation of coal-fired EGUs can achieve 6 percent heat rate, improvement through implementation of best practices and equipment upgrades as estimated by the EPA."

Our State DEQs say that building block one is unachievable. Sargent and Lundy say that you got it wrong. Is this an area that EPA plans to correct before finalizing the rule? How can EPA justify emission reduction targets based on building blocks if the building blocks themselves are so very flawed?

Ms. MCCABE. Thank you for your question, Senator. This gives me the opportunity to start saying something I think I will be saying a lot today.

We have received many, many comments on the proposed rules and are looking very closely at all of them. This is just one area where we received significant comment. We expected we would. That is what the public process is about.

Let me also mention that in designing the proposal and setting up the building blocks, EPA looked across the range of activities currently in use by the power sector that have the result of reducing carbon emissions. They are numerous and go way beyond the four we identified and included in our building blocks.

Our assumption in going into the proposal was not that every single source would be able to achieve exactly the amount of reductions we identified in each building block. In fact, we believe some can do more in one area and some may choose to do less in other areas.

The types of comments we are getting that suggest in some States in particular one approach is more suitable than another is exactly the type of comment we expected. That being said, of course we are looking very closely at any comments that suggest our factual conclusions need to be rethought.

We will be looking at that very closely and making adjustments as appropriate, as we always do after reviewing comments on a rule.

Senator FISCHER. I appreciate hearing that, because sometimes the statements that I hear from EPA, my constituents and our pub-

lic power in Nebraska, the DEQ in Nebraska, what we hear from EPA is that things are pretty well set.

We hear that while there is a public comment period, we haven't felt there will be much accommodation to the concerns that we have in our State with these specific concerns. You give me some hope here. I hope you will follow through with that as well.

According to Sargent and Lundy, even with the best maintenance practices in place, performance of many of the heat rate improvement methods included in the 2009 report will degrade over time.

EPA did not take into consideration the normal heat degradation when it applied the heat rate improvement ranges across the coal-fired fleet. Nor did it consider the units are the most efficient at full load and their efficiencies decrease with decreasing loads and with frequent load changes.

Don't you think those are significant oversights by the EPA and an overestimation of the real heat rate improvements that can be achieved and sustained across a coal-fired fleet?

Ms. MCCABE. These are important issues people have raised that we are reviewing very closely, Senator.

Senator FISCHER. Do you feel that you can work with States in trying to really address that over estimation?

Ms. MCCABE. We spend a lot of time talking with States and with the utilities which have raised these kinds of issues with us as well. We have one-on-one conversations with States and we are meeting with groups of States to talk about a whole range of issues.

In particular, States have been very forthcoming with us about particular concerns in their States as have utilities. As I say, when there are needed one-on-one conversations, we have them and then look at these issues as they apply across the whole spectrum of the rule.

I do want to emphasize that in the final rule, we very much want to maintain the flexibility of the States to have choices as to how they comply.

Senator FISCHER. Would you commit to me that when you are contacted by our public utilities in Nebraska or State government in Nebraska that you will respond to their concerns and let me know that you have done so?

Ms. MCCABE. I can certainly commit that we will converse with anybody who calls us from Nebraska and will certainly keep you up to date on those conversations. To the extent that we have already had those, we will be certain to give you information about that.

Senator FISCHER. I think you will be getting a lot of calls.

Ms. MCCABE. We are happy to get them.

Senator FISCHER. Thank you very much.

Thank you, Mr. Chairman.

Senator INHOFE. Senator Boxer, did you want to yield your time?

Senator BOXER. I do. I yield to Senator Markey.

Senator MARKEY. I thank the Senator from California.

I apologize, the policemen and firemen who captured the bombing suspect after the marathon bombing in Massachusetts in 2013 are about to be honored at the White House and they were in my

congressional district as well. Through your graciousness, I am going to be able to make that ceremony. I thank you so much.

I might also make this point. I think, from my perspective, if each member was given at least 1 minute to make an opening statement, because of the busy schedules of Senators and then have the remainder for questions, at least each Senator would be allowed in the opening to make their main point, if only for 1 minute. I just make that suggestion, Mr. Chairman.

In the House, if you wanted to, you could waive your opening statement and then just add it to the question period that you had but only that each member would at the beginning of the hearing, if they are there, to be able to make their point if only for 1 minute.

I would just make that suggestion. I think it might be helpful given the busy schedule of the members.

Senator INHOFE. Thank you, Senator.

Senator MARKEY. Mr. Chairman, it is fitting that we are holding this hearing today. Fifty years ago Sunday, Lyndon Johnson became the first President to warn about the increase in carbon dioxide in the atmosphere.

In a special message to Congress on that day in 1965, he included the emissions of carbon dioxide, the main cause of global warming, in his warning on the impacts of air pollution.

Fifty years later, global temperatures are increasing. Glaciers around the world are melting. Sea level is rising. Heat waves are hotter. Rainfall and snowfall are more extreme. As daunting as the challenges seem, we have solutions available that can reduce pollution, create jobs and inspire new technology.

Just months before his death, President Kennedy proposed the Clean Air Act in February 1963. In December of that year, it became the second law President Johnson signed as President. The original Clean Air Act created a program in the Public Health Service to address air pollution, establishing a public health foundation that has supported the strengthening of the law over the years.

The Clean Air Act has succeeded. Smog, soot, other pollutants have dropped an average of more than 70 percent since 1970, even as America's GDP grew by 219 percent.

Now President Obama is using the Clean Air Act to reduce carbon pollution from power plants. The same Kennedy-Johnson skyward vision that inspired an era of space exploration can spark a new clean energy revolution.

Since the inception of America's space program, solar panels have been a critical power source for missions throughout the solar system. That same technology is now landing on rooftops and fields across the Country. The solar industry now employs more than 170,000 people across our Country and is adding workers nearly 20 times faster than the general economy.

This connection that exists between lowering pollution while increasing employment is pretty steady throughout the years.

Let me turn to Massachusetts and the Regional Greenhouse Gas Initiative States. Those are Massachusetts, Maine, New York, Maryland, Connecticut, Delaware, New Hampshire, Rhode Island and Vermont. Since 2005, those States have reduced their green-

house gas emissions by 40 percent while continuing to see gross domestic product growth in their economies. Do you believe that is a model which is going to be used by other States under the proposed regulations which the Obama administration is considering right now?

Ms. MCCABE. Senator, as you just described, the REGGI approach has been quite successful, both in terms of environmental improvements and economically and very good investments for those States. We certainly think it is one model that States might want to look at.

I cannot speak to whether other States would go down the same path but I think the REGGI approach has laid the groundwork and shown other States how this can be done in a way that is locally successful.

Senator MARKEY. I think it is obvious that the model is already there. I am sure many States are going to use it.

Let me move on to the question of reliability. There is criticism that the proposed rules of the Administration are going to cause a reduction in reliability of the system, but we already know that extreme weather, climate change, is, in fact, impacting the reliability of our electricity grid in our Country.

Could you deal with the issue of these proposed rules and the reliability of the electrical grid system in the United States?

Ms. MCCABE. We agree that the worst thing to do for reliability is to do nothing. Keeping reliability very much in mind as the President directed us and as the Administrator always reminds us, we looked at how to design the proposed plan in a way to make sure reliability would not be put at risk and would, in fact, be enhanced.

There are a number of things built into the proposal in order to make sure that will happen. One is the length of time that we put into the proposal for the reductions to be achieved. There is a 15-year trajectory before the final compliance date.

That was intended to be quite consistent with the request that we have always received from utilities, reliability agencies and others that utilities need a long planning horizon.

Senator MARKEY. Do you think the proposed rules will actually drive the electricity system to become more resilient and stronger?

Ms. MCCABE. We do think the planning activities that will be going on and are going on now are intended to assure a reliable electricity system.

Senator MARKEY. I think that is very helpful.

Finally, the American Gas Association comments on the proposal were complimentary of the EPA's outreach efforts but they ask whether or not there could be more flexibility in terms of the planning at the State level in order to comply with the carbon reduction goals that will be set for State after State.

Could you deal with that in terms of the flexibility beyond the four building blocks that are in the EPA's plan that the States might be able to rely upon?

Ms. MCCABE. Yes. I will emphasize again that the building blocks were intended to be a starting point. States have ultimate flexibility to decide on just what approach they want to take. If

they want to rely more on natural gas than our proposal suggests they might, they would have every opportunity to do so.

Senator MARKEY. I think it is pretty clear that it is going to be possible to reduce carbon, to increase the GDP, to enhance the reliability of the system while engaging in significant job growth in our Country.

I thank you so much.

I thank you, Senator Boxer, for your courtesy.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Markey.

I want to use about half of my time and save some to accommodate some of my members.

First, we will hear over and over again what science says and all that. We are going to have a hearing and we are going to have scientists at a hearing. I think when you don't have science on your side, if you keep saying science is settled, science is settled, science is settled, there is this assumption that is the case.

That is not the case. When you stop and realize what we are doing today, we are talking about doing, through regulation, what we have not been able to do through legislation. In other words, those of us who are accountable to the people—talking about members of the House and the Senate—we have resoundingly rejected the very thing we are talking about today on CO_2 on five different occasions in the last 13 years.

Each time there has been a vote, it has been even more strongly rejected. What they are trying to do right now is do through regulation what they have not been able to do through legislation. I want to mention a couple things here today.

The recent analysis finds that China emits 800 million tons of CO_2 in 1 month. According to EPA's proposal, the maximum amount of CO_2 reduction under the Clean Power Plan is around 550 million tons in 1 year.

A question I would have for you, Ms. McCabe, is how will the Clean Power Plan impact global CO_2 emissions when China is producing more CO_2 in 1 month than the Clean Power Plan could potentially reduce in 1 year, even if it is implemented?

Ms. MCCABE. The Clean Power Plan will certainly result in less CO_2 emissions as well as our clean car rules and other measures we are looking at. There will be less domestic CO_2 from the U.S. as a result of the Clean Power Plan.

This is why it is important for the United States not only to be working domestically but to be working internationally. We recognize this is a global problem and that other countries are emitting CO_2. That is why we have been very aggressive and involved with China.

Senator INHOFE. You don't disagree with this chart, do you? This chart is an IPCC chart, a United Nations chart, right?

Ms. MCCABE. I don't know, Senator.

Senator INHOFE. What we have in the global greenhouse gases is a total figure. The green over here is what you are proposing. This is the reductions we have had. I want everyone to use a little common sense and look at this.

If your projections are correct, they are going to continue to have these emissions and we would only be able to reduce the emissions in 1 year. I appreciate your honesty in saying there is the problem.

Are you operating on some kind of a delusion that somehow China is going to change their behavior? Is that what it is predicated on?

Ms. MCCABE. We have been working with China. Recently an announcement of certain actions China has committed to take was made.

Senator INHOFE. Let me tell you what those were. I am going from memory so you can correct me if I am wrong.

They had the meeting. China said, if you want to do this, if you want to have these reductions, you can go ahead and have them but we are going to increase our emissions of CO_2 until 2030. They amended that downward to 2020.

One, if you believe China is going to do something, that would not happen. They are still going to increase as they are doing right now until 2020.

I have talked to the people from China. They sit back and smile. The thing they would love to have us do in this Country is make our reductions so we will be chasing our manufacturing base over there.

I would like to confine it to this. If you don't disagree with this, where is the logic here? What do you think is going to happen to change that green two tons a year?

Ms. MCCABE. For the first time, China has agreed to curb its growth in CO_2.

Senator INHOFE. Is there a document they have signed saying they are committed to doing that?

Ms. MCCABE. I don't know if there is a document, Senator, but they have made that announcement, they have made that commitment in conjunction with the United States.

Senator INHOFE. The commitment is that they will start reducing it by 2020?

Ms. MCCABE. That they will peak emissions and that they will invest significantly in 20 percent of non-fossil fuel generation in the coming years which is a very significant commitment as well.

Senator INHOFE. I will retain my 3 minutes.

Senator BOXER.

Senator BOXER. I am going to yield to Senator Merkley.

Senator MERKLEY. Thank you very much.

Thank you, Ms. McCabe. It is a pleasure to have you here to address such an important issue.

Part of the conversation we are having, as initiated by the Chair, was how the U.S. changes operate in the context of a global challenge. This really is a global tragedy of the commons. We all share in the atmosphere on this planet.

The gases we put in the atmosphere travel everywhere. It is only in the sense that there is an international strategy that we have some sense or opportunity to take on this issue.

What happens if each nation, among the nations of the world—India, China and the U.S. are the major carbon dioxide polluters—if each of those nations says, let's not act until the other two na-

tions act and then we will come along later. What happens to the planet in that situation?

Ms. MCCABE. This is the dilemma, the tragedy of the commons, Senator. We all have to act. If everybody says we are not going to act because we don't think anybody else will act, then CO_2 emissions will continue to increase, temperatures will continue to rise, and the oceans will get more acidic.

We will have more droughts, we will have more heat waves, and we will have more suffering around the globe and in this Country as a result of the impacts on the climate.

Senator MERKLEY. Is there some possibility that by the U.S. taking this issue seriously and engaging in dialog with all the nations of the world but also with India and China, that we can accelerate action among all three nations?

Ms. MCCABE. We absolutely believe so. We believe it is essential for the United States to be asserting and showing leadership.

Senator MERKLEY. When we look at this, we look at the total carbon dioxide production but much of the world looks at it in the context of individual footprint, if you will, per capita carbon dioxide.

In that sense, is it the Chinese, the Indians or the Americans who have the largest per capita footprint?

Ms. MCCABE. I believe it is the United States that has the largest footprint in carbon dioxide.

Senator MERKLEY. Do you have a sense of the proportion with the other nations?

Ms. MCCABE. I don't off the top of my head but I would be glad to get that information for you.

Senator MERKLEY. If I was to tell you that the footprint here in America is more than three times larger than that of China, would that sound in the ballpark?

Ms. MCCABE. I think that could well be in the ballpark.

Senator MERKLEY. If I was to tell you the most recent statistics who that our footprint is 12 times per capita that of India, does that sound about right? It is right. Thank you for confirming that.

Certainly we have benefited, if you will, from utilizing fossil fuels on a scale much larger than individual citizens in China or India. In some sense, that gives us an obligation to help be leaders in the world in taking this on.

China has obligated itself to proceed to produce, by 2030, renewable energy, non-fossil fuel energy, that is equal to the amount of electric energy produced in the United States from all sources as of this moment. Were you aware of that commitment?

Ms. MCCABE. Yes.

Senator MERKLEY. That is pretty phenomenal. In other words, all of our fossil fuel energy from coal, from natural gas, from solar, from wind, all combined together, China is going to match that amount with renewable energy in the next 15 years. That is a pretty extraordinary commitment that we didn't have in the previous year.

Ms. MCCABE. That is correct.

Senator MERKLEY. That commitment came out of a dialog with China about the need for all the nations of the world to proceed to take on this issue?

Ms. MCCABE. That is correct.

Senator MERKLEY. We are all going to suffer if the planet continues on its warming pace?

Ms. MCCABE. Yes.

Senator MERKLEY. Currently, we are on a path where our carbon pollution has gone up to 400 ppm, up from about 270 ppm for the industrial revolution, and the pace has doubled in the last few decades. That is, we were going up about 1 ppm on this planet.

We are at 2 ppm now, which means that within the time many members on this panel will serve in the U.S. Senate, we are going to see carbon levels that go up from 400 ppm where we are now quite possibly through 450 ppm and higher.

With that comes a global challenge in which we will surpass the point where we have a 50 percent possibility of keeping temperature rise from under 2 degrees. Is that something we should be concerned about?

Ms. MCCABE. We absolutely should be concerned.

Senator MERKLEY. Does that help drive the current policy of saying this is why we need to look at the most efficient ways. You have laid out a plan which says basically each State should find the most efficient ways to tackle carbon pollution. That makes a lot of sense economically.

I am seeing that carbon pollution is having a huge impact in Oregon. Our oyster production is faced by a challenge where oysters are having trouble forming their shells because the ocean is 30 percent more acidic.

If the ocean is 30 percent more acidic now than before the industrial revolution and oysters are having trouble forming their shells, what else is going wrong in the ocean and the food chain? It could be a lot more, I imagine.

Ms. MCCABE. Right.

Senator MERKLEY. We are having fire season that is several weeks longer now than it was 30 years ago, which is having a devastating impact, not to mention the pine beetle expansion. That is a big economic issue for our State.

We are having substantial droughts, three of the worst ever droughts in the Klamath Basin in just the last decade and a half, three of the worst ever droughts, having a huge impact on our agricultural base. That is an economic issue.

Ms. MCCABE. Yes.

Senator MERKLEY. It isn't just a matter of some theory about some computer model in the future, this is something having a huge impact on our economy, on our rural way of life, on our fishing, our farming and our forests right now.

Ms. MCCABE. Yes.

Senator MERKLEY. Thank you for bringing forward a plan that encourages each State to find the most cost effective, flexible way of taking on carbon dioxide. That makes a tremendous amount of sense. If each State is going to follow a different path, maybe we will learn from each other. Your plan allows partnerships to occur between States as another form of flexibility?

Ms. MCCABE. Yes.

Senator MERKLEY. That also makes a lot of sense.

You have laid out these four building blocks. This is basically one set of ways we can get to these numbers, but go find the best way possible for your State?

Ms. MCCABE. That is correct.

Senator MERKLEY. I thank you for putting forward a plan that helps put the United States in the leadership role of working with the nations of the world to take on this devastating challenge, a challenge that is having a huge economic impact in my State right now and a huge impact on rural America right now.

It is the responsibility of our generation to take it on and of each President who serves in the Oval Office to take it on. Thank you for doing so.

Ms. MCCABE. Thank you, Senator.

The Chair. Thank you, Senator Merkley.

Senator WICKER.

Senator WICKER. Thank you, Mr. Chairman.

Thank you, Ms. McCabe, for being with us today.

I do believe the regulation we are discussing today is EPA's most blatant overreach thus far, and there have been a number of them.

First, let me observe from the poster that the Ranking Member displayed earlier listing three headlines from national newspapers saying it is official, I was reminded of a scene from the movie "The King's Speech" in which the speech therapist, Lionel Logue, is talking to King George. One of the things Lionel says is "You need to quit smoking." King George says, "My doctors tell me smoke relaxes the throat." Lionel says, "They are all a bunch of idiots." The King replies, "They have all been knighted." Lionel replies, "Then it is official."

To say that we have some headlines from the Washington Post and other newspapers and that makes it official, I would just observe these were the smartest people in Britain at the time. They were giving the King of England exactly the wrong advice about what he should be doing with regard to smoking.

It is possibly conceivable that the smartest people of our time might be wrong and that some of the very learned and educated contrarians on the issue of climate change will turn out to be vindicated in the end.

I think you will agree, Ms. McCabe, that when my colleagues on the other side of the aisle talk about carbon pollution, it is a new term that has been coined over the last several years. They are not talking about smog or carbon particles in the air, they are talking about CO_2, carbon dioxide.

It sounds so sinister, pollution, dirty and slimy, carbon pollution, but actually they are talking about carbon dioxide. Carbon dioxide doesn't cause lung disease in children or asthma. Carbon dioxide hasn't been shown to cause children to miss school.

I just want the public and the people listening to this, both in the hearing room and perhaps on television, to understand when we use the term dirty carbon pollution, we are talking about nothing other than carbon dioxide.

Let me ask you about minimum incremental capital costs and the remaining useful life of coal-fired facilities. The Clean Air Act says the agency is supposed to consider the remaining useful life of existing sources they are proposing to regulate.

The Mississippi Development Authority says the minimum incremental capital cost to Mississippi of this rule, if it is implemented as it is written now, will be $14.2 billion. The cost will be mainly constructing generating facilities that we don't need right now under the current law and the current regulations.

Your own impact analysis says over 50,000 megawatts of coal-fired plants across the Country will have to be retired because of the rule. Many of these plants in Mississippi, they have spent billions of dollars to come into compliance with EPA rules and are now in compliance. Yet, because of the new rules, they will have to retire anyway, irrespective of the fact that they have years of remaining useful life.

Tell me how your proposal considers the remaining useful lives of these coal plants if the rule will force them to retire prematurely?

Ms. MCCABE. Of course the rule does not require any particular plant to take any particular action. We looked across the industry, across the Country at the age of plants, and the average age of coal-fired plants is I believe over 40 years, so there are a lot of plants that have certainly lived out or are close to living out their remaining useful life.

We understand business decisions are being made by utilities about how to proceed with those plants. The remaining useful life is absolutely something we are to take into account. We did so in the proposal and will do so in the final, further informed by all the input we have received.

We were very mindful of not putting States in the position of stranding assets, in particular, the types of plants you just mentioned, ones that have recently invested in pollution control equipment and expect to produce electricity in a controlled way into the future.

One of the reasons that we have a long trajectory in the plan is to take into account those sorts of considerations, another reason the plan is so flexible.

Senator WICKER. How long is that trajectory?

Ms. MCCABE. The final compliance date is 2030.

The States, in planning over that period of time, are able to make their own choices about what to do. If they have a plant that has many years of remaining useful life, has been recently upgraded, they certainly have the ability to continue operating that plant.

In fact, our projections are that in 2030, still 30 percent of the power in this Country would be produced by coal plants. We expect and assume that coal plants will continue to operate, even through and after these plans are fully in place.

Senator WICKER. But if the only way my State of Mississippi can achieve the CO_2 emission targets is to close these coal plants, are you saying we will be able to work with your agency to avoid this and keep those coal plants in use during their remaining useful life?

Ms. MCCABE. I don't know whether that is the situation in your State, but we certainly would be happy to have that conversation with the environmental and utility regulators in your State.

Indeed, we may have already done so. My staff has been spending a lot of time on the phone with States to understand why that is their conclusion, seeing what our reaction to that is, and see whether the flexibilities we have built into the proposal can provide a path for them.

Senator WICKER. It is my understanding that among the numerous items of input that you have received during the time of this is some 3 million comments from around the Country. Among those are comments from people in Mississippi who would have to comply with this.

What they are saying is flexibility sounds great, but if the only way we can achieve this goal is to shut down our power plants, we have no flexibility at all. I have to go back to what the people on the ground in Mississippi are telling me. That is, we are going to have to, in short order, close down the entire current coal-fired production in Mississippi.

I hope what you are saying is true, but it seems to me this is absolutely going to be a regulatory nightmare for electric providers, for users and for working families in the State of Mississippi. I hope we can avoid this with something more reasonable.

Ms. MCCABE. One of the issues that we have heard from many people right in this area is the interim goal the proposed rule set in 2020, a lot of the anxiety is about meeting an interim goal in that time period. That is something we are looking very, very closely at.

The Chair. Thank you, Senator Wicker.

Senator BOXER.

Senator BOXER. I will yield to Senator Cardin.

The Chair. Senator Cardin.

Senator CARDIN. Thank you, Mr. Chairman.

Senator Wicker and I usually agree on many issues. This is not one of them. We do agree on King's Speech being a great movie, but I am afraid King George got too much advice from the tobacco industry on their findings on the use of tobacco rather than from science at the time.

It seems to me also that if you look at the scientific information we have today and exclude some of the information from the fossil fuel industry, it is clear that carbon is a problem.

Senator WICKER. It is official.

Senator CARDIN. It is official. Thank you. We are in agreement then.

Carbon combined in our environment, causing climate change, is real. It is causing serious risks not only to the people in our Country but globally. We have a responsibility to act.

I would also like to point out that the Clean Air Act has been widely hailed as being very successful. Many of us remember all the red alert days have now been declining dramatically. In New York, Los Angeles and Baltimore, we have seen incredible improvements.

Our older people, our younger people and people who suffer from respiratory problems are much safer today. The cost benefit ratios are very clear. We are building on that. I thank you very much, Ms. McCabe.

Power plants are the largest, single source of carbon, 40 percent of all carbon. EPA not only has the legal authority, you have the responsibility to act, to deal with that single largest source of carbon emissions.

In the regulation you issued in June, which is now subject to comment, a 30 percent reduction by 2030 of the 2005 limits, was based upon your best judgment on science where we can achieve that, correct?

Ms. MCCABE. That is correct, Senator.

Senator CARDIN. It didn't just come out of thin air. It was a scientifically based analysis that we could achieve in regards to carbon reductions?

Ms. MCCABE. Correct.

Senator CARDIN. The cost benefit we talked about before, but by achieving those levels, first of all, it is not just by more efficient energy sources, it is also by conserving energy?

Ms. MCCABE. That is correct.

Senator CARDIN. I have heard about the cost to consumers but as we become more efficient, consumer save, don't they?

Ms. MCCABE. Yes, they do, Senator. If you use less electricity, overall your bills can go down. That is what we predicted.

Senator CARDIN. I just want to make that point. The cost benefit analysis that we go through when looking at EPA rules under the Clean Air Act or under the Clean Water Act, there are direct savings as Senator Boxer discussed, the number of premature deaths that will be saved, the number of work days that parents have to stay home because their child can't breathe, or the days lost at summer camp because children can't go to camp. Those are direct savings that we have as a result of implementing these laws.

We also get more efficient use of energy which will also save us money?

Ms. MCCABE. Correct.

Senator CARDIN. We haven't even discussed it to the extent that we do reverse some of the trends we have today on climate change and have less of these extreme weather conditions. We can tell you the billions of dollars these extreme weather conditions are costing the United States.

If you look globally at those who are becoming climate refugees who are being displaced, the cost is incredible.

All that builds into the fact that in Maryland, we have taken steps to deal with our power emissions through our power plants. We have done that and have had a growing economy. It has helped our economy.

The enactment of the Clean Air Act in the 1970's, we have seen tremendous economic growth in our Country. We believe that a healthy environment and a robust economy go side by side. As I understand it, that is the philosophy of the rule you brought forward and the comments you are receiving because you have a dual objective—a clean environment and a robust economy.

I want to talk about local flexibility. Maryland is one of nine States that is part of the regional initiative in the northeast and the mid-Atlantic, the REGGI proposal. We have taken some pretty extreme measures in order to reduce carbon emissions. We are

downwind, so we have to worry about what is going on around the Country.

We want other regions to do their share because it is not only important for our global responsibility, it is important to the people of Maryland that we have clean air. We can only do so much in our own State.

Talk a little bit about the flexibility that we have in our State as part of a regional effort. How have you taken into consideration the numbers based upon States that have joined regional compacts?

Ms. MCCABE. As we mentioned before, REGGI is a great example of States coming together to find very efficient ways, in a regional area, to make reductions in a way that is very helpful to the environmental goal and the economy.

In our rule, we give the States flexibility to do a plan on their own or to join regionally. Our cost analyses show that regional plans tend to be more cost effective because there are more choices.

I think that is what you are getting at, Senator, more choices for States to use different strategies, more choices for utilities, many of whom operate across State lines to have flexibility to make the most cost effective changes available to them and have a broader pool from which to choose.

REGGI has demonstrated that is an effective way to achieve the lower greenhouse gas emission goal.

Senator CARDIN. Mr. Chairman, let me comment on China because there has been a lot of conversation concerning China.

Another responsibility I have in the Senate is as the Ranking Democrat on the East Asia and Pacific Subcommittee. I have been to China. China is leading the world right now on renewable energy. They have invested over $50 billion.

This is not a country that has the same values we have as far as our global responsibilities looking at ourselves in a democratic state; they have done it because the people are demanding it. When you go to China, you see pollution. I was in Beijing for about 4 days, never saw the sun and there were no clouds in the sky.

They also do it because they don't have a lot of fossil fuel sources, so they really need to become less dependent. They recognize that it is in their economic interest to invest in cleaner energy sources.

I applaud the efforts of the Administration to bring China into specific achievable goals as we all work toward our universal responsibilities to deal with climate change. Whereas Maryland cannot deal with the healthy air without the help of our surrounding States, we cannot deal with climate change unless we have global cooperation. That requires U.S. leadership and I applaud the Obama administration for its leadership.

The Chair. Thank you, Senator.

For clarification, put the chart back up, if you would. When Senator Merkley was talking about the greenhouse gas, he was talking about greenhouse gases per capita which obviously India and China are not as industrialized as it is here, and they have millions and millions more people.

I just wanted to make sure that everyone understands that did not refute accuracy of this chart.

Senator SULLIVAN.

Senator SULLIVAN. Thank you, Mr. Chairman.

Ms. McCabe, thank you for your testimony today.

I want to make a few statements. There has been a lot of talk about the Clean Air Act and the Clean Water Act. I think all of us think they have been very successful. I think we all love clean air and clean water.

People are bragging about their States. I can talk a little bit about my State. We have the cleanest air and the cleanest water probably in the world. We have the most pristine environment probably in the world. We have the highest standards on protecting the environment at the State probably in the world.

We have one of the best records in the world of responsibly developing our resources and protecting our pristine environment. These are all very important. We all recognize that.

I also think jobs are important and affordable energy is very important. In my State, ironically, the citizens of Alaska pay some of the highest energy costs in the Country. I also very importantly think the rule of law in the Constitution is important, which I assume you do as well.

There has been a lot of talk about the agreement with China. I certainly don't think that relatively flimsy agreements between the President and China authorize the EPA to do anything that Congress has not authorized.

Do you think agreements with the Chinese give the EPA authority to take any action that Congress hasn't? I am curious because there has been a lot of discussion about these Chinese agreements. We haven't really seen them and it seems you are almost taking action based on an agreement we have with China.

The last time I looked at the Constitution, that wasn't where the EPA derives its authority.

Ms. MCCABE. Absolutely not, Senator. That is not why we are taking action. We are taking action under the Clean Air Act.

Senator SULLIVAN. Let me get to another concern of mine. I just wanted to get that China agreement issue off the record, on the record in terms of where you are deriving your authority.

One of the things I have had a concern about, I think a lot of Americans have had a concern about, is what I call the Obama administration two-step. It goes something like this.

The President and his Administration want to get something done. That is laudable. The elected President can certainly lay out a vision. A lot of these require actions by Congress under the Constitution.

The President will do a head nod to the Constitution, to the statutes with regard to what he wants to get done. If that doesn't work out, he ends up taking executive action anyway. There are numerous examples.

Immigration is one. The President wanted Congress to move on immigration. Congress didn't. That is the way the system works. Twenty-two times he says he can't take certain action, then he reverses himself and says, I can take that action.

Anwar is very important to my State. There is no doubt that the 1002 coastal area, you are probably familiar with it, in Alaska, in

order to designate it wilderness, no doubt that has to be done by Congress.

The President supposedly is going to put forward a bill to do that. It will go nowhere in this Congress. Yet, he has already said, I am going to move forward and designate through Executive Order, I will manage Anwar for wilderness anyway.

The waters of the United States, EPA wanted to expand its authority over the waters of the United States and put forward legislation in 2009 that didn't go anywhere because Congress and the American people didn't want to expand that authority. Through a regulatory action, you expanded the authority.

Now you are doing this. I think the Chairman has already laid out that what you were trying to do was move through Congress. It didn't pass. That is the way our constitutional system works, but it doesn't work for agencies to then say, it didn't pass through Congress, so I will do it anyway through a regulation. That is not how the system works.

Your agency, in my view, has been one of the biggest abusers of this two step approach. It is not just my view. Are you familiar with the recent Utility Air Regulatory Group v. EPA decision by the U.S. Supreme Court?

Ms. MCCABE. Yes, I am.

Senator SULLIVAN. Did you read that decision?

Ms. MCCABE. Yes, I did.

Senator SULLIVAN. It was a decision in which the Supreme Court was also chastising the EPA for taking actions and authority that it clearly said it didn't have. Let me read a provision of that recent Supreme Court decision.

It says, "EPA's interpretation is also unreasonable because it would bring about an enormous transformative expansion of EPA's regulatory authority without clean congressional authorization."

Do you think this rule brings about an expansion of your regulatory authority?

Ms. MCCABE. The rule we are talking about here today?

Senator SULLIVAN. Correct.

Ms. MCCABE. If I could respond?

Senator SULLIVAN. No, just respond to that question.

Ms. MCCABE. I believe the rule we have proposed and that we are going through comment on today is squarely based on our authority in the Clean Air Act.

Senator SULLIVAN. What provision of the Clean Air Act?

Ms. MCCABE. Sections 111(b) and 111(d).

Senator SULLIVAN. Have you read the CRS analysis of your authority?

Ms. MCCABE. I am not sure exactly what you are referring to.

Senator SULLIVAN. The congressional Research Service did an analysis of your authority on this regulation and the questions CRS had with regard to your authority to issue this reg. Have you read that?

Ms. MCCABE. I don't believe that analysis suggests that we don't have the authority to do what we are doing.

Senator SULLIVAN. It did. It looked at a number of areas where it raised questions. I would ask, if you haven't done that, if the EPA General Counsel's Office can respond to the CRS analysis of

this regulation and your authority under the Clean Air Act to issue that. Can you do that?

Ms. MCCABE. We would be happy to do that.

Senator SULLIVAN. Let me get back to what the Supreme Court mentioned. It mentioned when the EPA undertakes a reg that is an enormous and transformative expansion in its regulatory authority, they are very skeptical of your power.

Do you think this regulation dramatically expands your authority?

Ms. MCCABE. I do not.

Senator SULLIVAN. You don't?

Ms. MCCABE. I don't. I don't. I believe that we are following what the Clean Air Act requires. This is a statute Congress enacted to protect the public health from air pollution. The agency over a number of years on a very sound scientific record has made a determination that CO_2 endangers public health and welfare.

That determination was upheld by the U.S. Supreme Court. The EPA then has taken actions based on that finding of endangerment.

Senator SULLIVAN. I think you are doing exactly what the EPA reprimanded you from doing in its recent Supreme Court case where you are taking significant power under the Clean Air Act that is dramatically expanding your powers over the U.S. economy without clear congressional authorization.

As a matter of fact, you tried to get this authorization before and Congress has not passed it. You are not allowed to then move forward with the regulation to do what Congress won't allow.

Let me ask another question. You talked a lot about the States' flexibility. It sounds great. It sounds wonderful. Thirty-two States have raised legal objections to this rule; 12 have already sued you, even though you haven't finalized it.

There was testimony by FERC Commissioner Tony Clark who stated, "The proposed rule on existing plants has the potential to comprehensively reorder the jurisdictional relationship between the Federal Government and the State's, dramatically altering the traditional lines of authority."

He later said, "In spite of EPA's promise of flexibility, States are ceding ultimate authority to the EPA." Do you think that shows flexibility toward the States?

Ms. MCCABE. I don't agree with the way Commissioner Clark has characterized it. The States are clearly in charge of developing plans to reduce carbon emissions under the Clean Air Act and under our proposed rule.

Senator SULLIVAN. Mr. Chairman, my time has expired. I have several additional questions that I will submit for the record, particularly as it relates to interior Alaska communities such as Fairbanks which pay enormously high energy costs and will be severely, negatively impacted by this rule if it goes through.

I would like the EPA to specifically answer questions as relates to communities in Alaska.

Ms. MCCABE. I would be happy to answer your questions.

The Chair. Thank you, Senator Sullivan.

Let me give you an additional minute of my time because you have taken that and it is because you are discussing something I

was going to bring up. The mere fact that 31 States oppose this power plan and more than half believe it is not legal under the Clean Air Act.

I would be asking in my remaining time how are you are going to coerce these people into doing something they don't want to do? You cannot take their highway funds away. Think about that.

Senator BOXER.

Senator BOXER. I yield to Senator Whitehouse.

The Chair. Senator Whitehouse.

Senator WHITEHOUSE. Thank you very much, Chairman.

We always have an interesting discussion in which one side if the committee only looks at one side of the ledge and that is the coal economy and the fossil fuel industry economy. Many of us have different economies that are paying the price of carbon pollution.

My colleagues have heard plenty from me about this over the months and years. Let me bring in a couple of other voices.

In late 2014, fishery regulators announced that for the second consecutive year, there would be no shrimp fishery in the Gulf of Maine this winter. The principal culprit is warming ocean water caused by global climate change.

The author goes on to say, "The lobster has been disappearing from its traditional habitat in southern New England" and described a phenomenon that scientists dubbed an ocean heat wave in the spring of 2012 that led to an early molt and migration of lobsters that caused a supply glut and subsequent price collapse.

The author goes on to say, "The message here is clear. Climate change is taking dollars and jobs away from New England's fishing communities. Generally fish species off the northeast United States are collectively moving to higher latitudes and deeper water in search of the cooler temperatures they require to survive." We certainly see that in Rhode Island.

She adds, "The potential for dramatic storm surge events in which higher sea levels combine with more intense weather activity increase flooding and storm damage." We certainly have seen that in Rhode Island with Sandy.

The author comes to the conclusion what is needed is "honest, fact-based discussion and a genuine bipartisan commitment to solutions." The author of that article is none other than our former Republican colleague in the Senate, Olympia Snowe.

Another voice that has come out recently comes from the Economist Magazine. The Economist Magazine is a very conservative publication but it inhabits the space where it is conservative but not under the control of the fossil fuel industry.

Here is an article they recently posted. "If the coal, electric power and automotive industries had their way in the early 1970's, American cities would look like Chinese cities today. The 1970 Clean Air Act triggered the same kind of hysterical industry denunciations we are seeing today in response to the move to force the electric power industry to reduce greenhouse gas emissions.

"Among them was Ford claiming that the 1970 Act 'could cutoff automobile production in just 5 years, lead to huge price increases for cars, even if the production were not stopped and do irreparable damage to the American economy.'"

Again, in 1972, when the industry was being asked to adopt catalytic converters, General Motors threatened "complete stoppage of the production line and the president of Ford said it could cause Ford to shut down."

In 1974 when we were acting on sulfur emissions, American Electric Power spent $3.1 million on an ad campaign to convince that installing scrubbers on coal-fired power plants would be a disaster.

The article continues, "Needless to say, this was all nonsense. America's GDP has grown 212 percent since then while emissions of traditional air pollutants fell by 68 percent. Adult mortality in the United States would have increased by 160,000 in 2011," that is dead people, adult mortality in 2011 alone. "Over the course of 40 years, the Clean Air Act's pollution reductions have quite literally saved millions of lives."

The author then goes on to describe what he calls "a fairly reliable pattern. Whenever the government considers environmental or safety regulations, manufacturing, energy companies and industry associations put out 'studies' that grossly overestimate the costs and underState the benefits.

"In retrospect, the industry response to environmental regulation in the 1970's can best be described as mendacious, homicidal, greedy, whingeing" which is Brit speak for pointing.

He concludes, "The fact that the carbon, which utility companies turn out is gradually cooking the climate, and when considering the industry response to stronger greenhouse gas limits, one should keep in perspective that in the past they have been laughably wrong and that the positions they have advocated would have led to the deaths of millions."

He continues, "In the struggle for clean air, executives in the power, mining and automotive industries made fools of themselves at the time by cooking up economic and scientific arguments against pollution regulations that turned out to be utterly wrong. It is infuriating to see them now cough up the same, tired, half-baked arguments against carbon emission limits that they have been making wrongly for four decades against the whole slate of government environment and safety regulations, the very regulations that have made America the cleaner, safer Country we know it to be."

I take that statement from a conservative publication. This is not the publication of the Sierra Club; this is the Economist Magazine show that there is room for a principled, conservative position that acknowledges the reality of climate change, that acknowledges the reality of what is happening in my State.

I am keenly aware of what the economic damage could be if we get this wrong in West Virginia, Wyoming, Arkansas and other States. I am willing to work with my colleagues to try to see what we can do to get that right.

I cannot have a situation in which the other side refuses to acknowledge the reality of what is happening in Rhode Island, of what is happening in Maine, of what is happening in Oregon, of what is happening around the world and around the Country because carbon pollution, to use the Economist phrase, is cooking our environment.

That doesn't even get you into what it is doing to our oceans. You can actually measure sea level rise. You do that with the equivalent of a yardstick. You can measure the warming of the ocean. You do that with a thermometer. This stuff is not complicated.

You can measure the acidification. You do that with essentially pH type tests that people use for their aquarium. This is not complicated. When you measure it, you see it happening. It is real. We are in the process of having the ocean acidify at a faster rate than has ever occurred in the history of our species.

If you never want to go near the ocean, if you never want to eat anything from the ocean, if you don't think the ocean provides anything useful in terms of oxygen and cooling for the planet, that may be a matter of no interest to you.

It is pretty significant because when you go back into geologic time to look for the previous occasions, when you have seen that sort of calamitous change in ocean acidification and look at what is happening on the rest of the planet, those were not the high points for planetary habitability.

I wholeheartedly support this rule. I urge my colleagues to look at both sides of the ledge, not just the fossil fuel industry side and with any luck, in a reasonable amount of time, we will be able to do the job in Congress that if we had done it in the first place, you might not be here having to answer these questions.

Because of our failure, you have had to proceed. I don't think it is fair to blame you for having to proceed when we are the ones who failed.

The Chair. Senator Barrasso.

Senator BARRASSO. Thank you, Mr. Chairman.

Ms. McCabe, are you aware of the new source performance standard in the existing source performance standard rules for coal-fired power plants as a result of the 2010 EPA Sioux and Settlement Agreement with the National Resources Defense Council and others?

Documents obtained by the committee reveal that this agreement was reached in close coordination with the NRDC above all other petitioners, above all over interested parties such as the States.

One document in particular suggests that these rules were crafted to please the NRDC with Gina McCarthy going so far as to tell the NRDC climate advisor David Doniger, "This success is yours as much as mine." That was on the day the settlement agreement was made public.

Yet, it doesn't appear that the rule is a success to any of the real affected parties like the States or the American people who are facing high electricity bills and job loss. Do you believe that these rules are a success of the NRDC?

Ms. MCCABE. No, Senator. These rules have come about because the EPA made an endangerment finding about the fact that CO_2 was harming public health and welfare and that we have a responsibility and an authority under Congress' Clean Air Act to move forward to set standards for new sources of carbon dioxide as appropriate for existing sources of carbon dioxide and we have methodically looked at the most emissive sectors, starting with transportation and now fossil-fired utilities with 40 percent of the Country's CO_2 emissions.

Senator BARRASSO. Would you say that Wyoming, West Virginia or any of the other States of this committee had the same input and access to the EPA officials as the lobbyists and attorneys from the NRDC in reaching this settlement agreement?

Ms. MCCABE. I speak with States all the time. They have very good access to discuss all of these issues with us. They certainly know how to reach us and do.

Senator BARRASSO. Actually, 32 States did submit legal objections to the rule in the form of comments, including my home State of Wyoming. When a majority of States object to a rule, I think you have done something wrong.

I want to move on to the way you evaluate benefits. Most of the benefits claimed by the EPA in the 111(d) proposal for existing power plants come from reducing conventional pollutants like PM 2.5 and not carbon.

Why is the EPA justifying a carbon rule with benefits from PM 2.5?

Ms. MCCABE. There actually are significant benefits associated with the effects of reducing carbon. Those are all laid out in our IRA.

Senator BARRASSO. Once again, it does seem most of the benefits claimed by the EPA in the proposal for existing power plants comes from reducing conventional pollutants like PM 2.5 and not from carbon.

I wonder if the EPA is double counting PM 2.5 benefits that it is also taking credit for in other rules. I would ask how you justify counting the health benefits which misleads the American people to the actual health benefits of the rule?

Ms. MCCABE. First of all, we certainly are not double counting. We are very careful in all of our regulations to make sure that we don't do that. In addition, it is a standard and an accepted approach to acknowledge when there are co-benefits associated with the reductions that are happening as a result of the rule.

It would not make sense to not acknowledge those additional public health benefits and that they have value to the American people.

Senator BARRASSO. So you double count the co-benefits where you count them both over here and then both over there?

Ms. MCCABE. No.

Senator BARRASSO. The DOE announced this week that after 10 years of work, it was canceling the FutureGen, the CCS Project, "in order to best protect taxpayer interests." That was the reason given.

How can the Federal Government require the private sector to build CCS power plants under your proposed rule when it can't even build a CCS power plant on its own?

Ms. MCCABE. The rule in no way requires anybody to build anything in particular, including CCS.

Senator BARRASSO. DOE advisors released a study requested by Secretary Moniz that concluded that CCS is not "adequately demonstrated and should not be required under 111(b) of the new sources." The energy experts are telling DOE that CCS isn't adequately demonstrated. My question is, is the EPA really listening?

Ms. MCCABE. We are paying attention to all the input that we have gotten on 111(b) as well as 111(d). I will note that since last fall there has been a plant operating using CCS at 90 percent capture. That is moving along as everybody expected.

The technology is out there in use. That is certainly not the only example. As I said, we will, of course, pay attention to all the input we get on this issue.

Senator BARRASSO. On November 12, the U.S. announced a U.S.-China joint climate change agreement. The announcement stated that the President of the United States and China had stated their respective post-2020 actions on climate change.

According to the State Department, the agreement states the United States "intends to achieve an economy-wide target of reducing its emissions by 26 to 28 percent below its 2005 level in 2025." According to the State Department the same agreement says that China intends to achieve the peaking of CO_2 emissions around 2030.

We have to do all these things and there is not even peaking until 2030 and to make the "best efforts" to peak early and tends to increase the share of non-fossil fuels and primary energy consumption to around 20 percent by 2030.

The State Department has stated in Capital Hill meetings that the EPA actions, such as your proposed rule for new and existing power plants, will achieve the reductions of 26 to 28 percent. What role did the EPA play in setting these big targets for the U.S. in the U.S.-China agreements and what role do you see Congress playing in setting this policy, of which the economic impact is sweeping?

Ms. MCCABE. I may have misheard you, Senator, but to the extent that you suggested that the Clean Power Plan was intended to achieve the 26 to 28 percent all by itself, that is certainly not correct.

Senator BARRASSO. It is a big part of it, not all by itself but a significant part of it.

Ms. MCCABE. It is significant reductions as are the clean car rules, as are other things.

Senator BARRASSO. The question is, what role did the EPA play in setting these targets in the U.S./China agreement?

Ms. MCCABE. We have, as have many agencies, participated in conversations and discussions about what types of approaches would be feasible within our authorities to reduce carbon dioxide.

Senator BARRASSO. What role do you see Congress playing in setting this policy?

Ms. MCCABE. This is a matter for the President as he is discussing these targets in the international community. I am sure that he is paying attention.

Senator BARRASSO. Is the Administration's position that Congress has no role, responsibility, obligation or opportunity in all of these things?

Ms. MCCABE. Senator, I don't want to speak to that today. That is not really my responsibility. I would defer that to others to speak about. I am focused on the Clean Air Act and our authorities under that.

Senator BARRASSO. Senator Whitehouse, who has left, was quoting The Economist on some issues. Regarding the specific deal between the United States and China, The Economist said that the costs to the United States are much more real than they are to China.

It is something many of us here oppose and are going to continue to try to dismantle.

Thank you, Mr. Chairman.

The Chair. Thank you, Senator Barrasso.

Senator BOXER.

Senator BOXER. Thank you, Mr. Chairman.

First, I want to put in the record a PolitiFact that when Mitch McConnell says U.S./China climate deal means China won't have anything to do for 16 years, PolitiFact found that mostly false. I want to put that in the record, if I can.

The Chair. Without objection.

[The referenced information follows:]



The climate-change agreement between the United States and China "requires the Chinese to do nothing at all for 16 years."

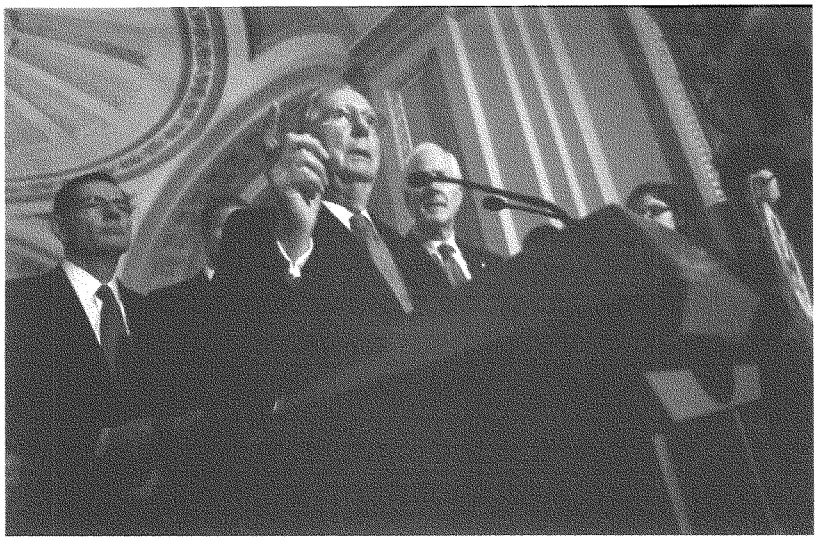
— Mitch McConnell on Wednesday, November 12th, 2014 in a media availability

Mitch McConnell says U.S.-China climate deal means China won't have to do anything for 16 years

By Louis Jacobson on Wednesday, November 19th, 2014 at 10:29 a.m.



President Barack Obama and President Xi Jinping of China greet children during the State Arrival Welcome Ceremony at the Great Hall of the People in Beijing, China, Nov. 12, 2014. (White House photo)



Sen. Mitch McConnell, R-Ky., answers questions following the weekly Republican policy luncheon at the U.S. Capitol on Nov. 13, 2014.



Smoke rises from the Colstrip Steam Electric Station, a coal-burning power plant in in Colstrip, Mont.

During a recent visit to China, President Barack Obama and Chinese President Xi Jinping announced a potentially landmark climate change agreement between the two countries, which are among the world's biggest economies and biggest emitters of greenhouse gases.

Greenhouse gases, and notably carbon dioxide, are produced when burning fossil fuels such as coal and oil for energy. When these gases build up in the atmosphere, most scientists say, they trap heat and raise surface temperatures, leading to changes in climate such as climbing sea levels.

For years, one of the key arguments made by opponents of U.S. efforts to cut carbon emissions has been that rising emissions from other big and fast-growing economies, such as China, could swamp any reductions the United States makes. The agreement with China potentially weakens that argument.

But congressional Republicans, including incoming Senate Majority Leader Mitch McConnell, R-Ky., weren't pleased with the terms of the accord. McConnell, who represents a coal-producing state, said so on Nov. 12, 2014, while talking to reporters covering a meeting with newly elected members of his Republican conference.

"The president continues to send a signal that he has no intention of moving toward the middle," McConnell said. "I was particularly distressed by the deal he's reached with the Chinese on his current trip, which, as I read the agreement, it requires the Chinese to do nothing at all for 16 years, while these carbon emission regulations are creating havoc in my state and other states across the country."

Several readers asked us to check whether McConnell is right that the bilateral agreement "requires the Chinese to do nothing at all for 16 years."

We turned to the announcement released by the White House on Nov. 12. Here's the relevant portion:

> "Today, the presidents of the United States and China announced their respective post-2020 actions on climate change, recognizing that these actions are part of the longer range effort to transition to low-carbon economies, mindful of the global temperature goal of 2℃. The United States intends to achieve an economy-wide target of reducing its emissions by 26%-28% below its 2005 level in 2025 and to make best efforts to reduce its emissions by 28%. China intends to achieve the peaking of CO2 emissions around 2030 and to make best efforts to peak early and intends to increase the share of non-fossil fuels in primary energy consumption to around 20% by 2030. Both sides intend to continue to work to increase ambition over time."

Boiled down, the key tasks for China in this deal are: 1.) an intention to max out carbon dioxide emissions around 2030, if not sooner, and; 2.) an intention to increase to about 20 percent the proportion of non-fossil fuels, such as renewables, in China's energy mix.

When we asked for backup on his claims, McConnell's office made two reasonable

points.

First, his office noted that the agreement is based on intentions, rather than on ironclad promises with enforcement mechanisms. They pointed to a column by Robert A. Manning, a senior fellow at the Atlantic Council, an international-affairs think tank, and a veteran of President George W. Bush's State Department. Manning wrote that "this is not a binding agreement and includes no benchmarks to measure progress or penalties to encourage it."

The second point McConnell's office makes is that China may already have been planning to make these emissions cuts anyway.

According to a report in Reuters, the 2030 peak date was "in line with forecasts already made by several state-backed think-tanks, with the China Academy of Social Sciences saying in a study last week that slowing rates of urbanization would likely mean that industrial emissions would peak around 2025-2030 and start to fall by 2040."

In theory, China could "simply shut down a lot of plants on Dec. 31, 2029," Jonathan R. Nash, a law professor at Emory University, told PolitiFact. "In that case, the agreement itself doesn't obligate China to take action before 2030."

Experts said this is theoretically possible, but, in the real world, unlikely.

It will take "significant work" for China to reach the 2030 target, said Ann Carlson, an environmental law professor at UCLA. "You can't stop your emissions immediately. Imagine if China said they would stop emissions today. That would require massive changes to implement -- no increases in driving unless cars were cleaner, no new economic growth without cutting emissions elsewhere, and so on. For China to achieve a cap in emissions by 2030, they will have to begin to find clean energy replacements very soon or seriously limit economic growth."

Michael Oppenheimer, a professor of geosciences and international affairs at Princeton University, agreed.

"Given the inertia in the economic and energy systems of China and its recent rates of emissions growth, there is absolutely no way that could happen without ... an earlier slowing of emissions growth," he said. "No sensible policy would allow" any different course, he said.

But as questionable as it is to suggest that China could do nothing until Dec. 31, 2029, and still meet the targets, there's still a second task for China -- to increase non-fossil fuels to about 20 percent of the nation's energy mix by 2030. Because no such infrastructure can be created overnight, China will have to start work on this part well before December 2029.

Indeed, such efforts already appear to be under way, said Michael B. Gerrard, a law professor at Columbia University who has studied the issue. "China is engaged in a massive program of building wind, solar and nuclear energy plants," he said.

Our ruling

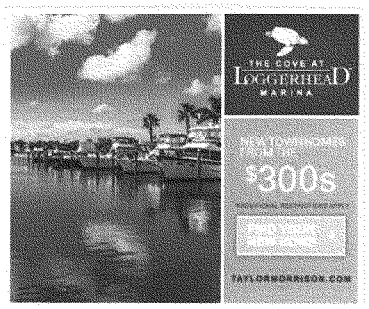
McConnell said the climate-change agreement between the United States and China "requires the Chinese to do nothing at all for 16 years."

McConnell's staff has a point that the agreement isn't binding and may simply be codifying changes China had already planned to make. Still, his claim is at best an exaggeration.

While it's theoretically possible that China could meet its emissions target simply by shutting down major plants on Dec. 31, 2029, experts say it would be much less risky to China's economy to spend the next 16 years working toward the goal, rather than doing it overnight.

But even if China did choose to make a literal overnight shift on emissions, that still doesn't account for China's pledge to increase non-fossil-fuel use to 20 percent of its energy mix. Building that infrastructure cannot be done overnight and will take years to carry out, experts said.

The statement contains an element of truth but ignores critical facts that would give a different impression, so we rate it Mostly False.



About this statement:

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Researched by: Louis Jacobson

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Subjects: China, Climate Change, Environment, Foreign Policy

Sources:

Washington Post, "GOP congressional leaders denounce U.S.-China deal on climate change," Nov. 12, 2014

White House, "U.S.-China Joint Announcement on Climate Change," Nov. 11, 2014 (Nov. 12, Beijing time)

Robert A. Manning, "US-China Climate Deal: Less Than Meets the Eye," Nov. 14, 2014

Reuters, "China, US agree limits on emissions, but experts see little new," Nov. 12, 2014

The Guardian, "Fact check: China pledged bigger climate action than the USA; Republican leaders wrong," Nov. 14, 2014

Email interview with Ann Carlson, environmental law professor at UCLA, Nov. 18, 2014

Email interview with Michael B. Gerrard, law professor at Columbia University, Nov. 18, 2014

Email interview with Michael Oppenheimer, professor of geosciences and international affairs at Princeton University, Nov. 18, 2014

Email interview with Jonathan R. Nash, law professor at Emory University, Nov. 18, 2014

Email interview with Robert J. Brecha, professor of physics and sustainability, energy and the environment initiative coordinator at the University of Dayton, Nov. 17, 2014

Email interview with Don Stewart, spokesman for Mitch McConnell, Nov. 18, 2014.

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Senator BOXER. Thank you.

We are hearing from a couple of my Republican friends, they are my friends, this isn't personal, this is quite important, a series of scare tactics about the results of continuing to implement the Clean Air Act. I want to compliment you, Ms. McCabe, for your very calm presentation.

This is a situation where the Clean Air Act requires you to act. It doesn't require us to act; it requires you to implement the Act unless we repeal the Clean Air Act. I haven't heard anyone say they want to repeal the Clean Air Act. If they do, bring it on.

It is true that since Richard Nixon signed the modern Clean Air Act in 1970—I want to make sure this jibes with your understanding—the U.S. GDP has grown by 219 percent, private sector jobs have grown by 101 percent and common air pollutants have dropped by 72 percent. Is that your understanding?

Ms. MCCABE. That is my understanding.

Senator BOXER. Senator Sullivan, I think in a very aggressive way and good for him, said that Obama is abusing his authority. I want to place into the record how many executive actions the last three Presidents took: Clinton, 364; George W. Bush, 291; and Barack Obama, 200.

Maybe I am wrong but I have not really heard anyone on the other side complain about George W. Bush's 291 executive orders, Nixon's 346 executive orders, or Regan's 381 executive orders. However, with Barack Obama's 200, oh, my God, the sky is falling. Isn't this awful.

I am sorry, the record just disproves your point.

I believe this not an Administration gone rogue. This is an Administration following the Clean Air Act. Don't you agree that is what you are doing?

Ms. MCCABE. That is what we are doing.

Senator BOXER. Don't you agree there have been three Supreme Court decisions that tell you that you need to proceed? The first case was Massachusetts v. EPA, the second case was American Electric Power v. Connecticut; and the third was Utility Air Resources Group v. EPA. Is that correct? Is that your understanding?

Ms. MCCABE. Correct.

Senator BOXER. Don't you have to follow the law?

Ms. MCCABE. We do.

Senator BOXER. Don't you have to follow the Supreme Court?

Ms. MCCABE. We do.

Senator BOXER. The Supreme Court in that last case, which Senator Sullivan quoted, confirmed the Clean Air Act covers carbon pollution. Isn't that correct?

Ms. MCCABE. Correct.

Senator BOXER. If you didn't do your work, you would be sued for not doing it. Am I right?

Ms. MCCABE. In all likelihood, we would.

Senator BOXER. I think so because I know some of the folks that would do it, including me, probably, if I had a chance. We have a lot of people at home who care about clean air. We have the largest number of people. We are up to 38 million people. Cleaning up the air is a primary focus.

With all due respect and admiration, we get along so well, I have to say my Chairman misconstrues the votes in the Senate. I am going to put in the record the actual votes, if I might.

The Chair. Yes.

Senator BOXER. Here is what they are. October 30, 2003, McCain-Lieberman went down. It was McCain's bill and was called The Climate Stewardship Act of 2003. He was right, it went down. We only had four Republicans: Collins, Greg, McCain and Snow, 43 to 55.

On June 22, 2005, the McCain amendment, 826, went down in a worse way, 38 to 60. Then we had Chaffee, Collins, Greg, Lugar, McCain and Snow, Republicans. On June 6, 2008—this is the one I remember—the Lieberman-Warner Climate Security Act of 2008 lost because it was a filibuster. Six people were absent and they asked their intention to vote yes be entered into the record. We actually had 54 votes at that time. We didn't have the 60 but we had a majority.

What I want to say to you is in this recent debate on Keystone, here is what happened: 99 to 1, the White House amendment declaring that climate change is not a hoax passed with the support of the Chairman and 59 to 40, the Hoeven amendment said climate change is caused by human activity won the day, 59 to 40 but was filibustered, so it never got where it should have gotten.

Then the Schatz amendment, which says climate change significantly is caused by human activity, passed 50 to 49.

My colleague from Mississippi went into this whole thing about that great movie, The King's Speech. I didn't quite get the connection but it was cleverly put forward.

The bottom line is he is saying that these two newspapers are confusing the matter. I am going to put into the record all of the news outlets that reported this story. I have 40 and there are many more.

Let me tell you who is included who said the same thing: The Christian Science Monitor, UPI, Chicago Sun Times, Reuters, AP, Financial Times, Politico, USA Today, National Journal, Virginia Pilot, Time Magazine, Newsweek, Kansas First News, National Geographic, Blumberg, Smithsonian Magazine, and Salt Lake City Tribune.

There was no question that all these outlets reported this not because they reported it for any particular reason other than this is the truth.

Unless my colleague from Mississippi has a right to say that he doesn't believe in NOAA and doesn't believe in NASA, this is a fact. You cannot make up this stuff. Would you agree this is accurate reporting?

Ms. MCCABE. That is certainly what I have understood from those agencies you mentioned.

Senator BOXER. Thank you very much.

Climate change is projected to harm human health. I wish my colleague from Mississippi was here because I really would love to get into a debate with him but he is not here because we all have so many obligations and I understand.

We know that climate change increases ground level ozone and particulate matter in some locations. Is that accurate?

Ms. MCCABE. That is accurate?

Senator BOXER. When you cleanup this carbon, you are really helping the health of the people. Isn't that true?

Ms. MCCABE. That is correct.

Senator BOXER. Relying upon substantial scientific evidence, EPA determined that man-made climate change threatens both public health and public welfare. Is that correct? My understanding is that was put forward in Coalition for Responsible Regulation v. EPA? That was the case.

Ms. MCCABE. That was the endangerment finding, correct.

Senator BOXER. In the endangerment finding, you found extreme weather events, changes in air quality, increases in food and water borne pathogens. We know that happens because we know it happened in a lake in Ohio which was devastating. We know these increases in temperature are likely to have adverse effects. Is that correct?

Ms. MCCABE. That is correct.

Senator BOXER. Isn't it clear that those of us who believe that carbon pollution does increase the likelihood that people will have breathing difficulties and heart attacks a proven fact?

Ms. MCCABE. Yes, it is.

Senator BOXER. Thank you.

Thank you, Mr. Chairman.

The Chair. Senator Rounds.

Senator ROUNDS. Thank you, Mr. Chairman.

Thank you for your time this morning.

I would like to read a bit of a summary of what has happened in my State of South Dakota and the challenges that we face. I would then like your response, please.

In the year 2012, the base year, South Dakota's Native electricity production was approximately 74 percent renewable energy and 26 percent from fossil fuels. We have one coal-fired power plant that employs 80 people, the Big Stone plant, and one natural gas combined cycle plant, the Deer Creek Station.

Each of these plants dispatches power into a different regional transmission organization. In your plan, you calculated Deer Creek Station's actual 2012 capacity factor at 1 percent despite the fact that the Deer Creek Station was not commercially operational until August of that year.

Had the EPA considered Deer Creek Station under construction in 2012, the plan would have assigned Deer Creek an assumed capacity factor of 55 percent in the year 2012.

Because of these calculations in your plan, it would require that the Big Stone plant, the coal-fired plant, which now operates approximately 8,000 hours a year to operate at between 2,000 and 2,500 hours per year in order to comply with your targets for the State of South Dakota.

The results of this coal plant running less than half of the time it runs now doesn't work. The Big Stone plant employs approximately 80 people. Under your preferred plan, we simply have to wonder whether or not those jobs would remain in the State or whether the plant would continue to operate.

Further, operating a baseline or a baseload coal unit 2,000 hours per year is literally uneconomical and is basically unfeasible. Big

Stone power plant and Deer Creek Station operate in separate RTOs. The electricity in one RTO cannot be transferred to the consumers in another RTO who depend on the plants to keep on their lights.

Adding an additional layer of complexity to this is the fact that the Big Stone plant is in the middle of a $400 million upgrade in order to comply with the EPA's regional haze rule and South Dakota's 2012 State implementation plan to comply with that rule.

This project isn't completed yet and after a $400 million investment—the largest single private investment our State has ever seen—you are now telling this plant they may not even be able to operate at all in order to comply with your latest regulations.

My question is this. We have a limited number of electric generating resources in South Dakota. Each facility is absolutely vital to meeting the energy needs of my State and our surrounding States.

In light of this, what if any flexibility is built into your proposed rule for a State like South Dakota? What flexibility is there for facilities in the midst of a major upgrade at your direction and are now being told they need to do even more to meet these additional regulations you plan on implementing?

Ms. MCCABE. We certainly welcome conversations at this level of detail from States. We are having many of them. I trust and hope your State has provided that input to us in their comments and that we are having those conversations.

I want to emphasize that the proposal we put out is not proscriptive. We do think States can find ways to reduce carbon in order to meet the targets. We are looking very closely at all of the kinds of issues you are raising with us.

In particular, if States think we got something factually wrong, we have urged them to tell us. Many have. Again, I presume your State is having that conversation with us. If we got something factually wrong, we will address that because we want to make sure the final rule is appropriate and correct and still maintains flexibility.

There are opportunities across the regions and across the States to have investment in clean technologies, energy efficiencies and renewables. I believe your State has been a leader in some of those technologies. We applaud that. That is why we think this can work.

We also appreciate there are complexities. Especially in the west, there are large States who are divided in terms of their energy markets. We are having conversations with States and with the energy regulators about those sorts of issues to make sure the final Clean Power Plan can accommodate all those sorts of considerations.

Senator ROUNDS. To the best of my knowledge, we have received no suggestions of how to fix the problem we share with you today. This is a major proposal. Clearly we think there should be a significant amount of thought put into the original rule to begin with.

Ms. MCCABE. Yes.

Senator ROUNDS. We have no feedback suggesting there is an alternative at this stage of the game. I am curious, are you suggesting that a final rule would be significantly different than the proposed rule based upon the information we have already provided to you?

Ms. MCCABE. I am suggesting, as is usually the case with EPA regulations, the comments we receive may well lead to adjustments in the final rule. In fact, I do not have any experience with an EPA rule where that has not happened.

That is why the public comment process is so important. I would emphasize that even beyond the formal public comment process, the tremendous relationship and discussions we have had with States and stakeholders is to make sure we get this right.

Yes, to the extent that adjustments are appropriate within our authority and needed to make sure the rule can work properly, we certainly will be looking at those kinds of things.

Senator ROUNDS. All of us want clean air. The challenge is how do we get there? How do we maintain what we have already? How can we afford to pick up the costs for making it better in the future?

The United States Chamber of Commerce in a report last year suggested that the cost to the average American family would be approximately $1,400 per year to comply with this particular rule.

Did you have or are you aware of what the estimated costs were when the rule was proposed or what the anticipated costs would be to a family to comply with this rule?

Ms. MCCABE. For every significant rule like this, we do a regulatory impact analysis along with the proposed rule. We did that here. It is all available for everyone to take a look at.

I am not sure about the specific study you cited, but we did do a forward look. I need to make sure everyone knows that because States will ultimately decide exactly what to do, our projections can only be illustrative. We are confident States will make the best choices for the families within their borders and that will take into consideration the costs.

This rule is all built on the things happening now in this industry. Utilities are using less carbon intensive, more economical fuels, investing in renewable energy and investing in energy efficiency. Those things together reduce carbon emissions but overall, because of the tremendous impact energy efficiency can have in the amount of energy we use, we expect bills to go down.

Senator ROUNDS. Mr. Chairman, my time is up. May I just read one sentence into the record?

In July 2014, the South Dakota Public Utilities Commission said "Some South Dakotans will see their electricity rates almost double as a result of the CPP disproportionately impacting the Midwest."

Thank you.

The Chair. Thank you, Senator Rounds.

Senator GILLIBRAND.

Senator GILLIBRAND. Thank you, Mr. Chairman, for this very important hearing.

Thank you, Ms. McCabe, for testifying about the Administration's actions to protect clean air by reducing carbon emissions for power plants.

From my perspective, the science is clear. Climate change is real. The burning of fossil fuels contributes to it significantly and is an immediate threat to families and communities in every corner of this Country and the world.

Industrial activity in the United States has been a major contributor to carbon pollution over the years. Whether we like it or not, our Country has the dubious distinction of having been a leader in creating the problem. Now, thanks to the hard work of this Administration, we are on track to solving this problem.

Something I think is often overlooked by many of the opponents of rules that limit carbon pollution from power plants is the benefit families will see in terms of public health. The Administration's proposed rules are strongly supported by health professionals.

In fact, I am sure you are aware the Academy of Pediatrics, the American Heart Association, the Lung Association, the Thoracic Society, the Public Health Association and several other public health organizations sent a letter to the EPA which stated, "The changing climate threatens the health of Americans alive now and future generations. Consequently, the Nation has a short window to act to reduce those threats."

Given that statement from some of these leading and well respected public health organizations, can elaborate on the public health risks that American families will continue to face if we fail to act to reduce carbon emissions from power plants?

Ms. MCCABE. There are some pretty immediate impacts. As we see temperatures go up, those kinds of conditions are more conducive to ozone formation. Ozone has very well demonstrated immediate impacts on families, including exacerbating asthma, bringing on asthma attacks leading to all kinds of medical expenses as well as missed school and work.

Severe drought which is occurring has significant impact on public health. The changes in temperatures are changing the seasons of various allergens and changing the patterns of various vectors that can lead to disease.

These are the kinds of things that scientists are seeing as a result of occurring climate change impacts.

Senator GILLIBRAND. The northeast has recently experienced a greater increase in extreme precipitation than any other region in the Nation. Sea level rise along New York's Atlantic coast has exceeded 18 inches since 1850.

Recently, the northeast has experienced extreme weather events that are more intense and frequent than we have seen before. While there is much talk of the potential cost of reducing emissions, there are significant costs to the economy if we decide to do nothing.

Has the EPA looked at the cost to other areas of the economy of failing to enact strong carbon emissions reductions? Would you agree that the cost of rebuilding our infrastructure and shorelines, providing billions of dollars in disaster assistance every year from extreme weather and destructed agriculture and fishery production, among other economic effects, far outweigh the cost of comply with the rules?

Ms. MCCABE. I certainly would. The greatest cost is to do nothing. The kinds of impacts you cite are ones scientists say are happening and will happen more in the future. Those are very, very costly events.

Particularly implementing the rule as we have proposed it here, providing flexibility for States to invest in their local communities,

bring jobs, invest in energy efficiency, which will reduce the need for electricity, provides very positive economic benefits.

Senator GILLIBRAND. Thank you, Mr. Chairman.

The Chair. Senator Vitter?

Senator VITTER. Thank you, Mr. Chairman.

Thanks, Ms. McCabe, for being here.

I want to thank my colleagues for letting me jump ahead because I have another commitment in a few minutes. I will be brief.

As you know, I submitted requests for documents on these rules and development of these rules in the last Congress. EPA is still producing some of those documents but from what has been produced, there is a dramatic pattern of very frequent, detailed meetings and phone calls and emails between EPA and NRDC, a leading outside environmental group.

The number of these communications is pretty staggering and unprecedented as far as I can see. In addition, there is some correspondence between EPA and NRDC that has not been produced or posted to the docket. Why is that and will that excluded correspondence and documentation be submitted?

Ms. MCCABE. I am not exactly sure of the answer to that question. I will be glad to get back to you on that.

Senator VITTER. If you could get back to us, hopefully that will be corrected in terms of the docket by including that additional correspondence and documentation.

Some things have been produced by EPA already. It shows a level of communication and detail and consultation that I think is pretty staggering. Let me put up one email of June 2013 before the rule was proposed.

In this, NRDC attorney, Dave Hawkins, advised senior EPA air official, Joe Goffman, "As long as the compliance date for the FIP 111(d) emission limits is a few years after the SIP submission deadline, it appears EPA can promulgate back stop FIP limits even in advance of the June 16 SIP submission date."

There is very detailed advice, direction I would say, before the rule was even proposed. Do you think that sort of thing is appropriate?

Ms. MCCABE. We get a lot of detailed advice from a lot of people and have many meetings with a lot of different stakeholders who weigh in with us. We take all of that input and put it in a proposed rule which is fully open for everyone to look at.

If the rule is not grounded in science and the law, then people tell us. That is how we proceed.

Senator VITTER. Prior to this email, had EPA even considered issuing a model FIP?

Ms. MCCABE. I can't speak to exactly when we would have had those conversations, but I can assure you that the notion of a Federal implementation plan is fully laid out in the Clean Air Act. That is what is motivating us to think about the need for a backstop Federal plan.

Senator VITTER. If you could followup and answer that question directly, whether EPA considered issuing a model FIP prior to the email, that would be useful.

Did NRDC's advice have significant bearing on the model FIP EPA is now developing?

Ms. MCCABE. We have not yet proposed a model FIP. We are going through that process right now. We have gotten a number of comments in the public comment period from a variety of stakeholders urging us to consider doing a model FIP. We will be working our work through the process to figure out what the appropriate proposal is.

Senator VITTER. Is EPA planning to issue its model FIP before the SIP deadline?

Ms. MCCABE. We announced in January that we intended to propose a FIP this summer around the same time that we finalize the 111(b) and 111(d) rules.

Senator VITTER. That would be before the other deadline?

Ms. MCCABE. I am not sure which deadline you are talking about. Are you talking about the deadline for States to submit plans?

Senator VITTER. Correct.

Ms. MCCABE. That deadline has not yet been finalized. That will be finalized in the final rule. We proposed it would be 13 months after the 111(d) rule is finalized. We will have a proposed FIP out in the summer. I would expect we would have that finalized within a year.

Senator VITTER. I just want to point out that it is perfectly consistent with this direction and advice.

My final question is this. I continue to be very concerned with the very secretive work on the social costs of carbon estimates. I asked you previously for the names and titles of those folks under your supervision in the Office of Air and Radiation who have participated in the Interagency Working Group. We haven't gotten that. Can you provide that to us?

Ms. MCCABE. It really has not been a secretive process at all. The GAO has confirmed that it was not an inappropriate process and that agencies across the government participated. It is not a process that the EPA was in charge of. I feel we have been responsive.

Senator VITTER. Can you provide me the names and titles of those folks under your supervision in the Office of Air and Radiation that participated in the Interagency Working Group?

Ms. MCCABE. I will take back that question and we will get you a response to that.

Senator VITTER. So it is not a secretive process but you won't commit to that?

Ms. MCCABE. It is not a secretive process.

Senator VITTER. Will you commit to that?

Ms. MCCABE. I will commit to get back to you.

Senator VITTER. You won't commit to that. Thank you.

The Chair. Thank you, Senator Vitter.

Let me thank both Senators Boozman and Capito who have been very flexible with their time to accommodate the others. I appreciate that very, very much.

Senator CARPER.

Senator CARPER. Thank you, Mr. Chairman.

Ms. McCabe, welcome. It is very nice to see you. Thank you for joining us today. Thank you for your service. You have a tough job. We appreciate your willingness to do it.

For those of us who live in States, there are actually millions of people in States already seeing the impacts of climate change. The EPA's proposal to regulate our Nation's largest sources of carbon pollution has been, frankly, a long time coming.

However, with any substantial regulatory action, there is always room for improvement. While we strive for perfection—I think all of us strive for perfection—we know it is hard to achieve.

I look forward to working with our colleagues on this committee, the Senate and the House, working with the Administration and other stakeholders in trying to make sure this regulation, as good as it is, becomes even better before it is finalized.

One such issue I hope to address is inequities in the State targets. We had some discussion of this before. It is my understanding that different States will have different targets based on feasibility of electrical systems and other variables under the Clean Power Act.

However, as written, I have heard from stakeholders that the proposal requires more of States that have already made substantial carbon reductions. Believe it or not, one of them is my State, Delaware. It would require more of us than States who have not yet acted.

For example, Delaware has already made substantial investments in energy efficiency and cleaning up coal plant emissions compared to a lot of other States. These stakeholders have expressed that if this issue is not addressed, States may be at a competitive disadvantage.

Have you heard similar concerns from other stakeholders? If the answer is yes, is the EPA considering adjusting the State targets to address these inequities? If so, what are those possible actions?

Ms. MCCABE. This certainly is an issue that has been raised in comments from all different directions and from a number of different stakeholders. It is something to which we are paying a lot of attention. In fact, we paid so much attention to it that in the fall we put out a Notice of Data Availability identifying some of the issues people had raised so we could be sure to get as much input as possible on it.

Our final rule has to be founded in our authority under the Clean Air Act to determine the best system of emission reduction for this sector. That is what we will be striving to do but we are looking very closely at all of these things.

While I can't speak to what any final decisions might be, because the rule won't be final until June or mid-summer, I can assure you that we are looking hard at those questions. We certainly don't want a rule that will disincentivize States from moving forward with early actions. That would not be good.

We want to make sure that we make as many adjustments as we can to, as you say, improve the rule while staying within the legal authority that we have.

Senator CARPER. There is a precedence for this—I think it is in Medicaid—for States that acted early in terms of increasing coverage under Medicaid. Under the Affordable Care Act, they were actually put at a disadvantage. I think we managed to fix that. My hope is we can be sure to do the same thing here.

I come to the issue before us today with a unique perspective. As the Senator from West Virginia knows, I was born in a place called Beckley. I don't come from a place called Hope. I come from a place called Beckley, West Virginia. I still have a lot of family in the Mountain State and had the opportunity to go back there as recently as last month.

The importance coal plays in the livelihood of a lot of folks, not just in West Virginia but in other places, is real to me. However, I now live and have the privilege of representing Delaware which is the lowest lying State in the entire United States of America.

I understand if we don't curb our power plan fossil fuel emissions over time, significant portions of my State will be lost to the sea. In fact, some parts of it are already starting to be lost to the sea.

Can you take a few moments to talk with us about how this rule might address both concerns? How does this rule help make sure that my native State, West Virginia, doesn't end up in economic ruin or damaged substantially while at the same time helping to make sure my State remains on the map?

Ms. MCCABE. Let me address those things first, Senator.

As has been discussed this morning by many of the committee members, CO_2 emissions need to be reduced globally in order to addressing the kinds of impacts in Delaware about which you speak.

This is one step that the United States can take which the Clean Air Act authorizes us to take along with others that this Country and others must take in order to address this. We believe that is a responsible and appropriate thing to do.

We are very aware of the impacts occurring in the electricity generating sector today. There are many forces that way beyond what EPA might or might not do in this or any other rule that is changing the way energy is produced in this Country. As we talk with the industry, we understand that from them.

We also understand that can have impacts on local communities built up around certain types of industries. This is not the first time that has happened. We must be very, very sensitive to those impacts as well.

This rule, as we predict, looks to the future. We see a significant portion of power in this Country still being generated by coal, about 30 percent. It will be clean and well controlled coal and investments there are very important.

We see another 30 percent being fueled by natural gas, another very important domestic industry that employs many, many people in this Country. There are other sources of energy, including ones where there is tremendous opportunity for investment in our local communities—thinking of renewable and energy efficiency, particular.

For we are keeping all of those things in mind and fully believe that the flexibility this program allows will allow for that range of types of operations. That is good and healthy.

Senator CARPER. One of the major sources of electricity generation of which I am aware, which does not create any emissions or harm, is nuclear. That provides electricity for about 20 percent of our need in this Country and has for a long time.

My staff and I continue to hear concerns that the EPA is not treating all zero emission resources the same in this proposal. Spe-

cifically, we have heard that the proposal discounts nuclear generation in the State targets as compared to renewable energy putting nuclear energy at a disadvantage to other clean technologies.

Why does the proposal discount nuclear generation? What is the EPA doing to address this issue?

Ms. MCCABE. This rule is about the fossil fuel-fired electricity generation. That is the sector that emits the air pollutants we are authorized to address. Looking at the types of emission reduction approaches that fossil fuel-fired generation fleet can adopt, we identified some key approaches that industry is now taking, shifting to less carbon intensive, energy efficiency, renewable and all that sort of thing.

This rule is not an energy plan. It should not be an energy plan. That is not Administrator McCarthy's job. We understand the significant role nuclear power generation plays in the Country and that it is subject to various pressures and issues.

We want to make sure States who have invested in nuclear energy and wish to do so, that can be a significant compliance option for States. It will be.

We have received a lot of comment on the exact question you asked about how we figured that into the targets. We will be sorting through all that information and resolving that in the final rule. We take the point people are making very seriously on that question.

Senator CARPER. My time has expired. Thank you so much for taking that seriously.

The Chair. Thank you, Senator Carper.

To the last and arguably the most patient members of the Environment and Public Works Committee, I appreciate very much your patience. Senator Capito, you are next.

Senator CAPITO. Thank you, Mr. Chairman.

I would like to thank Ms. McCabe for coming before us today to discuss this extremely important rule.

I hope you know that I represent the State of West Virginia.

Ms. MCCABE. I do.

Senator CAPITO. Thank you.

We have just under 2 million hardworking Americans who receive 95 percent of our electricity from coal power generation. The West Virginia coal industry supports families, strengthens national security and affordably powers not only my State but provides affordable electricity to many of our neighbors. We export over half the electricity that we produce. We could be keeping the lights on in this room.

Like many colleagues, I have some serious concerns about the proposed regulations. I am concerned about the cost to the taxpayer and also to the bill payer. We have already heard today that 32 States have raised serious objections.

A large percentage of our Country's power comes from coal, yet you predict by effectively eliminating one-half of our energy generation, we will reduce electricity prices by 8 percent. This, to me, doesn't simply add up.

In our State, our monthly electrical bills are 23 percent lower than the national average because our coal is cheap, reliable and very plentiful.

I am also concerned that in formulating these regulations, EPA has not considered the impact. You kind of touched on this but I think we need to get into it some more, the reliability of our electricity grid.

You don't really have great track record here because if you look at the max rule, the EPA predicted that regulation would result in the closure of 5,000 megawatts of generating capacity. In reality, the DOE now says that between 50,000 and 60,000 megawatts of generation capacity will be taken offline. That is a ten times mistake.

The cumulative effect of these regulations on our grid cannot be overstated. I think there is concern about the reliability. Looking back to last winter and touring some power stations, First Energy and others in my State, some of these coal-fired power plants to be taken offline were running at near capacity to keep our homes and our seniors warm.

Our hardworking coal miners in West Virginia have made our State the second largest coal producer behind Senator Barrasso's State of Wyoming. We mine it, we transport it, we burn it, our families depend on it. It has a huge economic impact.

You say in your opening remarks that EPA stakeholder outreach, public engagement and preparation have been unprecedented. You talked a lot about, I think you said, the millions of comments. How many comments? A lot?

Ms. MCCABE. A lot.

Senator CAPITO. I am interested in your definition of outreach. This is not just me. Senator Manchin has lodged an invitation for the EPA to come to a coal-producing State like West Virginia—please West Virginia—to talk about these. None of the meetings on this were ever conducted in the coal-producing States, certainly not in the State of West Virginia.

I reached out and invited EPA to come to West Virginia to talk about the economic impacts of this rule and these rules in our State.

Can we count on EPA to come and talk to the people of West Virginia about how this is affecting their livelihood and their electrical bills? Why haven't you come to a State like West Virginia to talk about this with its citizens?

Ms. MCCABE. There is a lot in what you just said. I will do my best to respond. I want to mention a couple things because you raise some very real points. I appreciate your thinking about your State as of course you would.

The estimates and the projections we include in our RIA for this rule are illustrative because we don't know exactly what every State will do. They are also at a national level, so we understand there could be some differences in how regulations impact local or regional areas that might differ from nationally. We are hearing a lot in the comment from people about that. It is important that we hear that.

I also want to mention that in establishing the targets in the rule, somebody mentioned earlier that the targets are different for every State. They are and indeed, the one result of that is that very coal intensive States actually remain coal intensive, even under our proposed rule.

I come from Indiana which is in the 93 to 95 percent. Those States as we looked at the application of these different technologies across the Country, States like yours and mine that are very coal intensive remain that way. Their targets are not as onerous some would say as States that are less coal intensive.

The design of the rule was to take each State where it was in its power generation and acknowledge that. Some of that is what was prompting Senator Carper to note that some States perceive inequities in the rule because of that.

We very much tried to build this into the design of the rule because we recognize there are differences around the Country. It is not reasonable to expect Indiana or West Virginia to suddenly become a Delaware in terms of its energy mix. That just won't happen.

Wherever the State is, whatever its mix is, there are opportunities there. There are opportunities in Indiana, West Virginia and everywhere to reduce the carbon intensity of the power production. That is how the rule lays out the process.

To the extent we haven't got it right, people are telling us how they think we should adjust it in order to get that right.

Senator CAPITO. What about the visit to West Virginia? Why didn't you visit coal producing States?

Ms. MCCABE. We did have a lot of meetings around the Country. We met in many States. When we were scheduling national level meetings, we wanted to have those in locations where people were comfortable coming. We used a lot of EPA offices.

Senator CAPITO. That is not really a great answer. I am not trying to be antagonistic. I don't think it is a great answer. You can get to West Virginia. We are not that isolated. It is a beautiful spot.

This heavily impacts the economics of our State and our ability to compete. All the time we get, you have to transition out of coal, you have to make a change and all these kinds of things. You say we have to use CCS technology or you have to use clean coal technology. It is not economically feasible. It hasn't been proven to be able to be run in a cost efficient way. We are beyond that.

Do I want that? Yes, I want that because that will help my State tremendously. Let's push forward on the research and development.

In the final analysis, of the 32 States that have lodged major objections, what if the States refuse to submit a plan? What is the EPA's reaction to that?

Ms. MCCABE. I would be happy to answer. First, if I could say we got comments from a lot of people. Because this is a proposed rule, everybody always tells us things they we can do better.

Senator CAPITO. It sounds like us. We get that too.

Ms. MCCABE. We welcome that. I am not counting, I don't have States in a tally but to answer your question, the Clean Air Act says if a State does not submit a plan or a State submits a plan that is not approvable, then EPA would put in place a Federal plan to implement the obligations we finalize in the rule.

Senator CAPITO. You mentioned forming regional alliances. I guess there is one in the northeast. If someone was listening to me

say coal provides 95 percent of the electricity in my State of West Virginia, who is going to want to be my regional alliance?

Ms. MCCABE. I think States are having a lot of conversations about that. States will need to find mutual reasons to come together. They also don't have to. I am not sure what conversations West Virginia is having with other States.

Senator CAPITO. Again, because of where we are, what we have, the natural resource we have, we are definitely disadvantaged.

Thank you.

The Chair. Thank you, Senator Capito.

I want to recognize Senator Boxer.

Senator BOXER. On behalf of Senator Sanders, thank you, Mr. Chairman.

He really wanted to be here but he is at a Budget Committee hearing. He wrote a very interesting opening statement where he quotes the Department of Defense saying climate change is an immediate risk to U.S. national security. I ask to put that entire statement in the record.

The Chair. Without objection, so ordered.

[The prepared statement of Senator Sanders follows:]

STATEMENT OF HON BERNARD SANDERS, U.S. SENATOR
FROM THE STATE OF VERMONT

Last month, the National Oceanic and Atmospheric Administration and the National Aeronautics and Space Administration determined that 2014 was the warmest year ever on record.

The determinations by NOAA and NASA highlight a pattern of continued and alarming temperature increases. For instance, the ten warmest years on record have all occurred since 2000, and this past year the months May, June, August, October, and December were the hottest instances of each of those months ever recorded.

For those of us who have been focusing on this crisis, this comes as no surprise. In 2009, the U.S. Senate received a letter signed by virtually every major scientific organization in this country. In that letter, these scientific organizations wrote the following:

"Observations throughout the world make it clear that climate change is occurring, and rigorous scientific research demonstrates that the greenhouse gases emitted by human activities are the primary driver. These conclusions are based on multiple independent lines of evidence, and contrary assertions are inconsistent with an objective assessment of the vast body of peer reviewed science. Moreover, there is strong evidence that ongoing climate change will have broad impacts on society, including the global economy and on the environment. For the United States, climate change impacts include sea level rise for coastal states, greater threats of extreme weather events, and increase risk of regional water scarcity, urban heat waves, western wildfires, and a disturbance of biological systems throughout the country. The severity of climate change impacts is expected to increase substantially in the coming decades."

At least 37 American scientific organizations, 135 international scientific organizations and national academies, and 21 medical associations share these views: climate change is real, it is significantly caused by human activities, and it poses grave risks to the planet.

These risks truly are grave. The Intergovernmental Panel on Climate Change estimates that without any additional efforts to reduce greenhouse gas emissions, "warming is more likely than not" to exceed 7.2 degrees Fahrenheit by the end of the century, and sea levels have already risen by nearly seven inches over the last century, and are expected to rise another 10 inches to more than two and a half feet by the end of this century.

That the scientific community shares an overwhelming consensus about the perils of climate change should be enough to provoke aggressive action on our part to reduce greenhouse gas emissions.

But it isn't just the scientific community. The chorus of those sounding the alarm is already vast and continues to grow: key players in the insurance and financial industries, including Munich Re, Swiss Re, Standard & Poors, and the World Bank;

a wide array of prominent economists and prominent Republicans like former Secretary of State and Treasury George Schultz and former Treasury Secretary Hank Paulson; more than 700 major U.S. companies, including Google, eBay, Intel, and Nike are calling for climate action; and a host of former EPA Administrators appointed by Republican presidents among them.

In fact, even our own national security community is sounding the alarm. Less than 1 week ago, the President released the National Security Strategy. Among its most important conclusions: climate change is one of our country's "top strategic risks."

In October, the Department of Defense called climate change a "threat multiplier" and concluded that it poses an "immediate risk to U.S. national security," amplifying calls by numerous national security experts for assertive climate action, including former National Security Advisor Tom Donilon, former Secretary of State Madeleine Albright, former Secretary of Defense and U.S. Senator William Cohen, and General Wesley Clark, the former Supreme Allied Commander Europe of NATO.

Our challenge, consequently, is to dramatically reduce our greenhouse gas emissions, and the proposal under discussion in today's hearing does exactly that. Power plants are the largest source of the nation's harmful carbon pollution accounting for nearly 40 percent of all carbon released into the air. The Environmental Protection Agency's proposed reductions in carbon pollution focus on the most important source of greenhouse gas emissions among power plants: high-pollution coal-fired generating plants.

The EPA proposed rules for power plants would require any newly constructed power plant to emit roughly 40?50 percent less carbon pollution than a traditional coal power plant, and the proposed carbon pollution standards for existing power plants will reduce U.S. power plant carbon pollution by 30 percent compared to 2005 levels.

The benefits will be considerable. The EPA's Clean Power Plan will put Americans back to work in the clean energy and energy efficiency sectors. Americans' electric bills would drop by roughly 8 percent in 2030, according to an EPA analysis. The reduction in household and business savings across the country would amount to more than 37 billion dollars in 2020, according to an analysis conducted by ICF International.

An NRDC study found that the EPA's proposed carbon pollution limits will create as many as 274,000 energy efficiency jobs. These are good jobs that cannot be outsourced, reducing pollution and saving working families significant amounts of money.

We would dramatically improve America's energy independence and national security. By transitioning away from fossil fuels and toward sustainable domestic energy sources, we will permanently shed our dependency on energy imports.

And perhaps most importantly, the EPA's proposed carbon pollution limits will result in a significant reduction of the greenhouse gas emissions that are causing climate change.

The American public overwhelmingly supports government action to curb global warming, as a New York Times/Stanford University poll just 2 weeks reported. Although an enormous percentage of Democrats hold that view, the poll found that more than half of Republicans shared this view, as well. Nor is there a debate about the science itself, despite the best efforts of the fossil fuel industry to inject doubt into the conversation.

Just as the American public believes in science, the enormous threats posed by climate change, and clear government action to reduce carbon pollution, today I express my strong support for the EPA's proposed carbon pollution limits.

The Chair. Senator Boozman.

Senator BOOZMAN. Thank you, Mr. Chairman.

I want to followup on the Senators from West Virginia and South Dakota in regard to the baselines.

I feel the 2012 baseline is arbitrary. You have a complicated formula to determine the targets the States must meet. In Arkansas, because we have a new coal power plant not online until December 2012, it really doesn't accurately represent where Arkansas is.

We are going to be in a situation where we are six or seven on the list. In reality, because of the formula descriptions, it is really two or three. The bottom line is you talk about opportunities for States to cut emissions. That is true but the reality is, the elec-

tricity bill for the average person in Arkansas, people on fixed incomes, single moms, things like that, is going to significantly increase.

I would like you to look at the 2012 baseline and look at the catch–22 situations you are putting States in, like Arkansas and it sounds like South Dakota is in the same situation. I would like you to commit to work out the targets in that regard. I disagree totally with the rule but at least it could be fair.

Ms. MCCABE. We have had a number of discussions about Arkansas' situation. In particular the 2012 issue has been brought up by a number of States. In our Notice of Data Availability we put out last fall, we included information from 2010 and 2011 so people could take a look at how that might make a difference, looking at different years.

We are very open to hearing those concerns and trying to work them through.

Senator BOOZMAN. The other thing I would like to discuss is reliability. You talk a lot about costs and things. Are you familiar with Southwest Power Pool?

Ms. MCCABE. Yes.

Senator BOOZMAN. For those who aren't, Southwest Power Pool is mandated by FERC to ensure reliable supplies of power, adequate transmission infrastructure and competitive wholesale prices of electricity.

I think you would agree that they are the folks that when you flip the switch, the electricity comes on. As a result of that, if they don't do a good job, if they don't provide reliable power, then they pay fines and are held responsible to the Federal Government.

I think you would also agree they are non-partisan. It is just an agency that is doing its best to make things work. They reviewed your mandates and produced a reliability impact assessment. Have you reviewed that?

Ms. MCCABE. Not that one specifically, Senator, but I am aware they have done that.

Senator BOOZMAN. I really think you should. I think it is important. They found significant new generating capacity not currently planned will be needed to replace the retirements that EPA is predicting, about 9,000 megawatts in our region alone by 2020.

Significant new transmission infrastructure will be needed. It currently takes up to eight and a half years to study, plan and construct transmission and costs up to $2.3 million per mile of new transmission.

Their scenario is such that it is going to be very, very difficult to do as you are proposing without it affecting reliability. They have come up with four things they have asked you to do. I think they are very, very reasonable.

First, they recommend a series of technical conferences jointly sponsored by the EPA and the Federal Energy Regulatory Commission focusing on the impacts on regional markets and power system reliability.

My question to you is, would you agree to do that? To me, that is a very common sense approach. Today, we have heard a lot of talk that we need to do something. We need to do the right thing. Would you actually commit to doing that, getting the groups to-

gether and talking about the unintended consequences we might see?

Ms. MCCABE. Actually, those technical conferences are already scheduled, Senator. The first one will happen next week. There are several more around the Country.

Senator BOOZMAN. Very good.

Second, they recommend a detailed, comprehensive and independent study of the North American Bulk Power System conducted by the North American Electric Reliability Corporation before EPA adopts its final rules.

Again, would you consider going forward with getting a good, independent study to address the potential unintended consequences that Southwest Power Pool and I think several of the other independent systems are concerned about?

Ms. MCCABE. I believe that NAERC is already doing that kind of work and has put out some information.

I want to note that until the States decide what they intend to do by way of compliance, it is really not possible to do a real reliability study. What is good about the conversations that are happening and the work SPP and others are doing is they are doing exactly what you described their job to be, which is thinking ahead, looking ahead, planning, thinking about contingencies, thinking about how things might roll out, whatever the incoming factors are, whether it is an EPA rule, anticipating weather events that could affect the power system, or shifts in use of fuels based on anticipated prices.

Those kinds of conversations are exactly what should be happening and what is happening.

Senator BOOZMAN. To the study of Southwest Power Pool coming up with 9,000 megawatts and the difficulty in construction, I would also add the difficulty in getting easements and all of the hassle that goes with that. One of their recommendations is to extend the compliance schedule by 5 years.

Ms. MCCABE. We have heard that not just from them but from others. We have also heard concerns, as I mentioned earlier, about the interim compliance date of 2020. That is causing a lot of anxiety, less than the ultimate compliance date.

Senator BOOZMAN. Is it causing enough anxiety that you are going to do something?

Ms. MCCABE. We are looking very, very closely at it, Senator.

Senator BOOZMAN. The last thing they recommend is you adopt reliability safety valves recommended by the independent system operators and regional transmission organizations.

Ms. MCCABE. That is an idea that several people and organizations have raised. That is another thing we are looking at very closely.

Senator BOOZMAN. I am very much opposed to the rule but I do think you need to really look at the reliability and the impact it is going to have and the significant impact.

I know you mentioned States will have the ability to reduce their footprint. The reality is at the end of the day, lots of people are going to have significantly increased utility bills as a result of the regulation. I think there is pretty good data to show it is all pain and very limited gain.

Thank you, Mr. Chairman.

The Chair. Thank you, Senator Boozman.

I do have 2 minutes remaining. I want to make a couple comments.

First of all, don't forget not only is it the tax increase, it is the most regressive tax increase that you can have. These are the people who have to have their homes. That seems to have gone unnoticed, the regressive nature of this.

When Senator Capito asked a question about the 32 states, these are the States who are rejecting this. These States have actually said they cannot comply with it and some of them will not. Even Professor Laurence Tribe of Harvard recently stated the proposal is unconstitutional.

Senator Capito asked the question, what happens if they don't do a SIP? Your response was, they would be forced to take a FIP, correct?

Ms. MCCABE. That is what the Clean Air Act says.

The Chair. What enforcement authority do you have to do that? You can't take away their highway funds. What are you planning to do to coerce them to do something that is unconstitutional that they don't want to do?

Ms. MCCABE. First, I would respectfully disagree that the program is unconstitutional. There are a variety of opinions out there. Professor Tribe's is one.

The Clean Air Act says if a State does not go forward with a State plan, then EPA would put in place a Federal plan.

The Chair. It is the enforcement I was asking about. I am running out of time.

Let me conclude with this. There are certain incontrovertible facts that we have dealt with. One, this is a proposal that the States reject. There it is right there. They reject it.

It ignores the will of Congress. You can argue the different times it has come up. It has never passed. The type of regulation that would come through a bill that was introduced—as I mentioned the first was not by a Democrat, it was by a Republican in 2002—it was rejected.

They cannot do it by the support of people who are answerable to the people, so they have to go to the unelected bureaucrats to do it. That is why they are trying to do it through regulation because they cannot do it through legislation.

The third thing is it relies on unreasonable assumptions. You saw the other chart we had up here a minute ago. If you look at it and use common sense, this is not reliable. It will cost millions and increase our energy bills.

Senator Boozman is right, it is going to be on those who can afford it the least. Then, if all of that happens, if all that is correct, in all the hysteria and all the talk about the science, even if that were true, it still is not going to reduce the CO_2 emissions worldwide.

We heard that not from people on my side or any other side except we have heard that from the first director of the EPA in response to our questions and in response to a House member.

These things are out there. I know this has become a religion and I know we will have a lot more discussions about it. We are

going to do what we can to keep my people in Oklahoma from incurring the largest tax increase in history for something that is not going to be corrected.

Senator BOXER. May I put something in the record? May I ask for 30 seconds?

The Chair. Yes, not 30 seconds because I have to have the last word.

Senator BOXER. You can have the last word after I do my 30 seconds.

The Chair. Put something in the record.

Senator BOXER. I will. I am asking unanimous consent that I have 30 seconds and you can have whatever time you want. Is that fair?

The Chair. The answer is no. Go ahead and put that in.

Senator BOXER. Then I will have a press conference immediately afterwards to tell you what he is stifling me from doing.

I want to put in information from the U.S. Energy Information Administration showing that California's electricity bill is far lower than Oklahoma's and that we are prospering because we have taken on climate change and have cheaper costs than they do in many other States.

The Chair. Without objection, that will be made a part of the record.

[The referenced information follows:]

2012 Average Monthly Bill- Residential

(Data from forms EIA-861- schedules 4A-D, EIA-861S and EIA-861U)

State	Number of Customers	Average Monthly Consumption (kWh)	Average Price (cents/kWh)	Average Monthly Bill (Dollar and cents)
New England	**6,203,726**	**634**	**15.71**	**99.64**
Connecticut	1,454,651	731	17.34	126.75
Maine	703,770	531	14.66	77.77
Massachusetts	2,699,141	627	14.91	93.53
New Hampshire	601,697	615	16.07	98.80
Rhode Island	435,448	597	14.40	86.04
Vermont	309,019	565	17.01	96.09
Middle Atlantic	**15,727,423**	**701**	**15.27**	**107.01**
New Jersey	3,455,302	691	15.78	109.10
New York	7,010,740	603	17.62	106.14
Pennsylvania	5,261,381	837	12.75	106.78
East North Central	**19,583,335**	**803**	**12.05**	**96.72**
Illinois	5,098,647	767	11.38	87.20
Indiana	2,755,595	997	10.53	104.93
Michigan	4,250,620	676	14.13	95.50
Ohio	4,869,305	895	11.76	105.23
Wisconsin	2,609,168	703	13.19	92.79
West North Central	**9,096,181**	**942**	**10.59**	**99.75**
Iowa	1,334,596	873	10.82	94.50
Kansas	1,217,256	945	11.24	106.19
Minnesota	2,317,336	793	11.35	90.06
Missouri	2,699,287	1,060	10.17	107.80
Nebraska	806,524	1,000	10.04	100.46
North Dakota	342,549	1,091	9.06	98.85
South Dakota	378,633	980	10.07	98.68
South Atlantic	**26,018,443**	**1,079**	**11.38**	**122.71**
Delaware	399,998	942	13.58	127.92
District of Columbia	231,550	721	12.28	88.51
Florida	8,645,207	1,081	11.42	123.45
Georgia	4,071,478	1,098	11.17	122.73
Maryland	2,212,287	1,005	12.84	129.00
North Carolina	4,230,588	1,077	10.91	117.45
South Carolina	2,113,144	1,119	11.77	131.64
Virginia	3,248,518	1,117	11.08	123.72
West Virginia	865,673	1,078	9.85	106.15
East South Central	**8,053,112**	**1,185**	**10.32**	**122.25**
Alabama	2,150,977	1,187	11.40	135.26
Kentucky	1,924,644	1,130	9.43	106.54
Mississippi	1,256,392	1,193	10.26	122.49
Tennessee	2,721,099	1,217	10.10	122.98
West South Central	**14,809,221**	**1,171**	**10.30**	**120.62**
Arkansas	1,332,154	1,120	9.30	104.14
Louisiana	1,995,661	1,254	8.37	104.99
Oklahoma	**1,679,296**	**1,132**	**9.51**	**107.60**
Texas	9,802,110	1,168	10.98	128.27
Mountain	**9,048,794**	**874**	**10.94**	**95.58**
Arizona	2,585,638	1,061	11.29	119.84
Colorado	2,149,637	706	11.46	80.94
Idaho	673,368	1,010	8.67	87.52

2012 Average Monthly Bill- Residential

(Data from forms EIA-861- schedules 4A-D, EIA-861S and EIA-861U)

State	Number of Customers	Average Monthly Consumption (kWh)	Average Price (cents/kWh)	Average Monthly Bill (Dollar and cents)
Montana	473,033	842	10.08	84.88
Nevada	1,080,583	935	11.83	110.58
New Mexico	859,281	656	11.37	74.62
Utah	966,063	793	9.93	78.70
Wyoming	261,191	867	9.85	85.35
Pacific Contiguous	**17,597,091**	**684**	**12.94**	**88.55**
California	13,101,887	573	15.34	87.91
Oregon	1,642,444	957	9.80	93.80
Washington	2,852,760	1,037	8.53	88.46
Pacific Noncontiguous	**695,017**	**587**	**28.76**	**168.97**
Alaska	275,405	654	17.88	116.89
Hawaii	419,612	544	37.34	203.15
U.S. Total	**126,832,343**	**903**	**11.88**	**107.28**

2014 Hottest Year on Record
Headline from Across the United States
January 2015

It's Official: 2014 Was The Hottest Year On Record, NOAA Says – NPR

It's official: 2014 was the hottest year in recorded history –Washington Post

2014 hottest year on record according to NOAA, NASA –Christian Science Monitor

NASA, NOAA proclaim 2014 hottest year on record –UPI

2014 was Earth's warmest year on record: NASA, NOAA – Chicago Sun Times

It's official: 2014 was the hottest year ever recorded – Vox

Last year was Earth's hottest on record, U.S. scientists say –Reuters

2014 warmest year on record, say US researchers – BBC

How hot was it? 2014 was Earth's warmest year on record, data show – LA Times

The heat is on; NOAA, NASA say 2014 warmest year on record – AP

World just had hottest year on record – Financial Times

2014: Earth's hottest year on record -- Politico

Record! 2014 was Earth's warmest year – USA Today

2014 Was the Hottest Year on Record, According to NASA – National Journal

According to NOAA & NASA 2014 Was The Warmest Year On Record, So Now What? – Boston.com

Record-breaking 2014 was hottest in modern history: US – AFP

2014 was warmest year on modern records according to NASA and NOAA – National Monitor

Hot, hot, hottest climate on record – The Virginia Pilot

Climate change: 2014 warmest year ever recorded in California – San Jose Mercury News

A Bad Day for Climate Change Deniers … and the Planet – Time

2014 Breaks Heat Record, Challenging Global Warming Skeptics – NY Times

2014 was California's hottest year, and it wasn't even close – SF Chronicle

2014 Breaks Record for Warmest Year, NOAA and NASA Experts Say – NBC News

It's Official: 2014 Was the Hottest Year on Earth Ever Recorded – Newsweek

2014 Was the Hottest Year Ever – New York Magazine

2014 Was The Hottest Year Ever Recorded On Earth – Buzzfeed

2014 named hottest year on record – Kansas First News

2014 Confirmed as Hottest Year On Record, With Spike in Ocean Temperatures – National Geographic

Rising Temperatures on Land and Sea Made 2014 Hottest Year – Bloomberg

2014: The world's hottest year on record – MSNBC

It's Official: 2014 Was the Hottest Year Ever Measured on Earth – Slate

NASA, National Oceanic and Atmospheric Administration report 2014 as hottest year on record – NY Daily News

For the 4th Time Since 1997, We All Just Lived Through the Hottest Year Ever Recorded – Smithsonian Magazine

Our Hottest Year, Our Cold Indifference – The New Yorker

2014 probably hottest year in 5,000 years – Minnesota Public Radio

Hot dang — planet breaks heat record; last year 4th warmest for Utah – Salt Lake City Tribune

Heat Wave, or a Heat Tsunami? 2014 Set the Record – Inside Climate News

Heat is on; NOAA, NASA say 2014 warmest year on record – KCRA

The heat is on; NOAA, NASA say 2014 warmest year on record – St Louis Post Dispatch

2014 was the warmest year on record globally - Tulsa World

2014 was hottest year ever recorded on Earth – Miami Herald

2014 was warmest year on record for much of Alaska – Alaska Dispatch News

Even without El Niño, 2014 was hottest year on record – Boston Globe

Senator BOXER. Thank you.
The Chair. We are adjourned.
[Whereupon, at 12:02 p.m., the committee was adjourned.]
[Additional material submitted for the record follows.]

STATEMENT OF HON JEFF SESSIONS, U.S. SENATOR
FROM THE STATE OF ALABAMA

Thank you Chairman Inhofe for holding today's hearing. I am pleased to see that the Committee is conducting important oversight over the Administration's unprecedented climate policies. These regulations present yet another instance where the Obama administration is seeking to impose its regulatory will on the American people, regardless of what the law or Congress has said, and regardless of the costs to struggling families and workers.

It's important to note the alarmism surrounding the President's proposed carbon emissions regulations. For example, our witness today, Ms. Janet McCabe—the Acting Assistant Administrator for EPA's Office of Air and Radiation, claims that if climate change is "left unchecked, it will have devastating impacts on the United States and the planet."

In reality, the scare tactics used by EPA are not working with the American people, and the specific warnings put forth by the Administration and others are not coming to fruition as predicted. The facts are dramatic. For example, in the Wall Street Journal last week, Bjorn Lomborg—director of the Copenhagen Consensus Center and who testified before the Clean Air and Nuclear Safety Subcommittee last Congress—wrote about studies which show that in recent years, there have been fewer droughts, decreased hurricane damage, and only a small rise in temperatures that is 90 percent less than what many climate models had predicted. Dr. Lomborg suggested that "the narrative that the world's climate is changing from bad to worse is unhelpful alarmism."

The costs for these unilateral policies are truly astounding. The Heritage Foundation estimates that the that there will be approximately $1.47 trillion in lost national income by 2030. These costs are certain to hammer middle-class workers who are already struggling to survive this weak job market. Worse yet, the Administration is fully aware of nuclear energy as a more cost-effective way to pursue its carbon emissions goals, but has consistently put up roadblocks to this common-sense approach.

At bottom, the proposed regulations that are before the Committee today will harm the poor, the middle-class, and the elderly while doing virtually nothing to change the trajectory of global climate trends. EPA's climate policies are dangerous and misguided, and I am glad the Committee has committed to conducting important oversight early on during this Congress.

Senate Climate Change Legislation
Vote History

October 30, 2003. **Vote 43-55.**
McCain-Lieberman "Climate Stewardship Act of 2003" (S. 139).
Roll Call Vote No. 420
Republicans: Chafee, Collins, Gregg, McCain, Snowe

June 22, 2005. **Vote 38-60.**
McCain Amendment 826 (to H.R. 6 "Energy Policy Act of 2005") to provide for a program to accelerate the reduction of greenhouse gas emissions in the United States.
Roll Call Vote No. 148
Republicans: Chaffee, Collins, Gregg, Lugar, McCain, Snowe

June 6, 2008. **Vote 54-36 (including 6 absent Senators who asked that their intentions to vote yes be entered into the record).**
Lieberman-Warner "Climate Security Act of 2008" (S. 2191).
Vote 11-8 in Senate Cmte. on Environment and Public Works (December 5, 2007).
Senate Report No. 110-337.
Amended version (S. 3036) voted on by Senate (June 6, 2008).
Roll Call Vote No. 145
Republicans: Collins, Dole, Martinez, Smith, Snowe, Sununu, Warner, McCain (by letter), Coleman (by letter).

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ORDERS FROM ABOVE

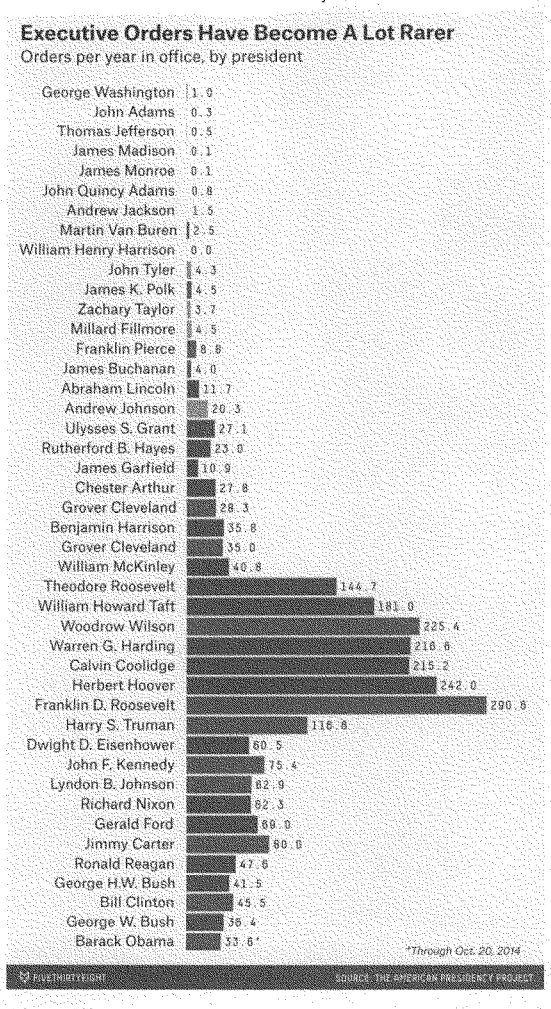
Every President's Executive Orders In One Chart

5:41 PM NOV 19 By BHARGAV MEHTA

President Obama is due to announce an executive action Thursday, one that will change the legal status of millions of immigrants and is likely to be remembered as a major effort to change the country's immigration system. The action would reportedly allow up to 4 million undocumented immigrants legal work status, and an additional 1 million protection from deportation. It would be one of the most wide-reaching executive actions in history.

That has made Republicans furious. The New York Times has a good roundup of the reaction, including quotes from Sens. John Cornyn ("I believe his unilateral action, which is unconstitutional and illegal, will deeply harm our prospects for immigration reform") and Tom Coburn ("The country's going to go nuts, because they're going to see it as a move outside the authority of the president, and it's going to be a very serious situation"). The spokesman for House Speaker John Boehner has called the president "Emperor Obama," implying that the executive action is an unlawful decree, and Sen. Ted Cruz said on Fox News that "the president is behaving in an unprecedented way."

If it's unprecedented, it's because of the scope of the executive action, not the executive action itself. For decades, executive orders have been a fairly common tool for U.S. presidents. We looked at data from the American Presidency Project and found that the use of executive orders peaked in the era of the New Deal (FDR set the record) and has been on the decline since. In the past 100 years, Democrats have used them more than Republicans. Here's every president's tally per year that he served in office.



Of the executive orders since 1956 that addressed immigration, the most wide-reaching was President George H.W. Bush's Family Fairness plan. As Danny Vinik said at the New Republic, conservatives are noting that Bush's action expanded upon congressional intent, but Obama's would be in defiance of it.

CORRECTION (Nov. 21, 10:37 a.m.): A headline on an earlier version of this story incorrectly stated that the chart showed every executive action by president, when in fact it shows every executive order.

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January 16, 2015

RELEASE 15-010

NASA, NOAA Find 2014 Warmest Year in Modern Record



The year 2014 now ranks as the warmest on record since 1880, according to an analysis by NASA scientists.

Image Credit: NASA's Goddard Space Flight Center

Download this video in HD formats from NASA Goddard's Scientific Visualization Studio

The year 2014 ranks as Earth's warmest since 1880, according to two separate analyses by NASA and National Oceanic and Atmospheric Administration (NOAA) scientists.

The 10 warmest years in the instrumental record, with the exception of 1998, have now occurred since 2000. This trend continues a long-term warming of the planet, according to an analysis of surface temperature measurements by scientists at NASA's Goddard Institute of Space Studies (GISS) in New York.

In an independent analysis of the raw data, also released Friday, NOAA scientists also found 2014 to be the warmest on record.

"NASA is at the forefront of the scientific investigation of the dynamics of the Earth's climate on a global scale," said John Grunsfeld, associate administrator for the Science Mission Directorate at NASA Headquarters in Washington. "The observed long-term warming trend and the ranking of 2014 as the warmest year on record reinforces the importance for NASA to study Earth as a complete system, and particularly to understand the role and impacts of human activity."

Since 1880, Earth's average surface temperature has warmed by about 1.4

degrees Fahrenheit (0.8 degrees Celsius), a trend that is largely driven by the increase in carbon dioxide and other human emissions into the planet's atmosphere. The majority of that warming has occurred in the past three decades.

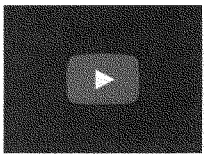
"This is the latest in a series of warm years, in a series of warm decades. While the ranking of individual years can be affected by chaotic weather patterns, the long-term trends are attributable to drivers of climate change that right now are dominated by human emissions of greenhouse gases," said GISS Director Gavin Schmidt.

While 2014 temperatures continue the planet's long-term warming trend, scientists still expect to see year-to-year fluctuations in average global temperature caused by phenomena such as El Niño or La Niña. These phenomena warm or cool the tropical Pacific and are thought to have played a role in the flattening of the long-term warming trend over the past 15 years. However, 2014's record warmth occurred during an El Niño-neutral year.

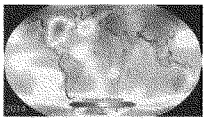
"NOAA provides decision makers with timely and trusted science-based information about our changing world," said Richard Spinrad, NOAA chief scientist. "As we monitor changes in our climate, demand for the environmental intelligence NOAA provides is only growing. It's critical that we continue to work with our partners, like NASA, to observe these changes and to provide the information communities need to build resiliency."

Regional differences in temperature are more strongly affected by weather dynamics than the global mean. For example, in the U.S. in 2014, parts of the Midwest and East Coast were unusually cool, while Alaska and three western states -- California, Arizona and Nevada -- experienced their warmest year on record, according to NOAA.

The GISS analysis incorporates surface temperature measurements from 6,300 weather stations, ship- and buoy-based observations of sea surface temperatures, and temperature measurements from Antarctic research stations. This raw data is analyzed using an algorithm that takes into account the varied spacing of temperature stations around the globe and urban heating effects that could skew the calculation. The result is an estimate of the global average temperature difference from a baseline period of 1951 to 1980.



This video shows a time series of five-year global temperature averages, mapped from 1880 to 2014, as estimated by scientists at NASA's Goddard Institute for Space Studies (GISS) in New York.
Image Credit: NASA's Goddard Space Flight Center
Download this video in HD formats from NASA Goddard's Scientific Visualization Studio



This color-coded map displays global temperature anomaly data from 2014.
Image Credit: NASA's Goddard Space Flight Center
Download related visuals from NASA Goddard's Scientific Visualization Studio

NOAA scientists used much of the same raw temperature data, but a different baseline period. They also employ their own methods to estimate global temperatures.

GISS is a NASA laboratory managed by the Earth Sciences Division of the agency's Goddard Space Flight Center, in Greenbelt, Maryland. The laboratory is affiliated with Columbia University's Earth Institute and School of Engineering and Applied Science in New York.

NASA monitors Earth's vital signs from land, air and space with a fleet of satellites, as well as airborne and ground-based observation campaigns. NASA develops new ways to observe and study Earth's interconnected natural systems with long-term data records and computer analysis tools to better see how our planet is changing. The agency shares this unique knowledge with the global community and works with institutions in the United States and around the world that contribute to understanding and protecting our home planet.

The data set of 2014 surface temperature measurements is available at:

http://data.giss.nasa.gov/gistemp/

The methodology used to make the temperature calculation is available at:

http://data.giss.nasa.gov/gistemp/sources_v3/

For more information about NASA's Earth science activities, visit:

http://www.nasa.gov/earthrightnow

-end-

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Summary Information

The State of the Climate Summary Information is a synopsis of the collection of national and global summaries released each month.

Report: Global **Year:** 2014 **Month:** December View

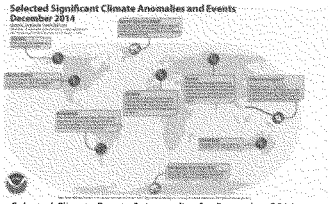
Global Summary Information - December 2014

See Full Report

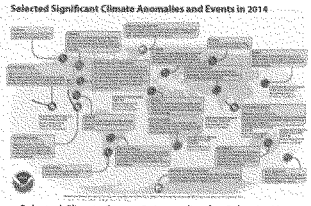
2014 Earth's warmest year on record;

December 2014 record warm; Global oceans also record warm for 2014

The globally averaged temperature over land and ocean surfaces for 2014 was the highest among all years since record keeping began in 1880. The December combined global land and ocean average surface temperature was also the highest on record.



Selected Climate Events & Anomalies for December 2014



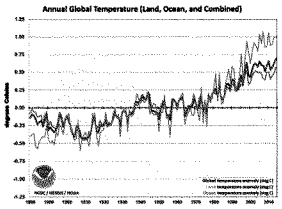
Selected Climate Events & Anomalies for Calendar Year 2014

Global highlights: Calendar Year 2014

For extended analysis of global climate patterns, please see our full Annual report

- During 2014, the average temperature across global land and ocean surfaces was 1.24°F (0.69°C) above the 20th century average. This was the highest among all 135 years in the 1880–2014 record, surpassing the previous records of 2005 and 2010 by 0.07°F (0.04°C).
- Record warmth was spread around the world, including Far East Russia into western Alaska, the western United States, parts of interior South America, most of Europe stretching into northern Africa, parts of eastern and western coastal Australia, much of the northeastern Pacific around the Gulf of Alaska, the central to western equatorial Pacific, large swaths of northwestern and southeastern Atlantic, most of the Norwegian Sea, and parts of the central to southern Indian Ocean.
- During 2014, the globally-averaged land surface temperature was 1.80°F (1.00°C) above the 20th century average. This was the fourth highest among all years in the 1880–2014 record.

- During 2014, the globally-averaged sea surface temperature was 1.03°F (0.57°C) above the 20th century average. This was the highest among all years in the 1880–2014 record, surpassing the previous records of 1998 and 2003 by 0.09°F (0.05°C).

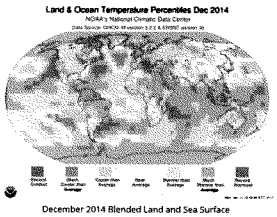


Global temperature time series: land and ocean components. From 2014 Global Report Supplemental Information.

- Looking above Earth's surface at certain layers of the atmosphere, two different analyses examined NOAA satellite-based data records for the lower and middle troposphere and the lower stratosphere.
  - The 2014 temperature for the lower troposphere (roughly the lowest five miles of the atmosphere) was third highest in the 1979-2014 record, at 0.50°F (0.28°C) above the 1981–2010 average, as analyzed by the University of Alabama Huntsville (UAH), and sixth highest on record, at 0.29°F (0.16°C) above the 1981–2010 average, as analyzed by Remote Sensing Systems (RSS).
  - The 2014 temperature for the mid-troposphere (roughly two miles to six miles above the surface) was third highest in the 1979–2014 record, at 0.32°F (0.18°C) above the 1981–2010 average, as analyzed by UAH, and sixth highest on record, at 0.25°F (0.14°C) above the 1981–2010 average, as analyzed by RSS.
  - The temperature for the lower stratosphere (roughly 10 miles to 13 miles above the surface) was 13th lowest in the 1979–2014 record, at 0.56°F (0.31°C) below the 1981–2010 average, as analyzed by UAH, and also 13th lowest on record, at 0.41°F (0.23°C) below the 1981–2010 average, as analyzed by RSS. The stratospheric temperature is decreasing on average while the lower and middle troposphere temperatures are increasing on average, consistent with expectations in a greenhouse-warmed world.
- According to data from NOAA analyzed by the Rutgers Global Snow Lab, the average annual Northern Hemisphere snow cover extent during 2014 was 24.95 million square miles, and near the middle of the historical record. The first half of 2014 saw generally below-normal snow cover extent, with above-average coverage later in the year.
- Recent polar sea ice extent trends continued in 2014. The average annual sea ice extent in the Arctic was 10.99 million square miles, the sixth smallest annual value of the 36-year period of record. The annual Antarctic sea ice extent was record large for the second consecutive year, at 13.08 million square miles.

Global highlights: December 2014

- During December, the average temperature across global land and ocean surfaces was 1.39°F (0.77°C) above the 20th century average. This was the highest for December in the 1880–2014 record, surpassing the previous record of 2006 by 0.04°F (0.02°C).
- During December, the globally-averaged land surface temperature was 2.45°F (1.36°C) above the 20th century average. This was the third highest for December in the 1880–2014 record.



December 2014 Blended Land and Sea Surface

Temperature Percentiles December 2014 Blended Land & Sea Surface Temperature Anomalies in °C

- During December, the globally-averaged sea surface temperature was 0.99°F (0.55°C) above the 20th century average. This was also the third highest for December in the 1880–2014 record.
- The average Arctic sea ice extent for December was 210,000 square miles (4.1 percent) below the 1981–2010 average. This was the ninth smallest December extent since records began in 1979, according to analysis by the National Snow and Ice Data Center based on data from NOAA and NASA.
- Antarctic sea ice during December was 430,000 square miles (9.9 percent) above the 1981–2010 average. This was the fourth largest December Antarctic sea ice extent on record.
- According to data from NOAA analyzed by the Rutgers Global Snow Lab, the Northern Hemisphere snow cover extent during December was 130,000 square miles below the 1981-2010. This was the 20th smallest December Northern Hemisphere snow cover extent in the 49-year period of record.

For extended analysis of global temperature and precipitation patterns, please see our full December report

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Regional Greenhouse Gas Initiative
an initiative of the Northeast and Mid-Atlantic States of the U.S.

November 7, 2014

RGGI States Comments Support EPA Proposed Clean Power Plan

Opportunities for States to Reap Economic Benefits While Reducing Emissions; Ways to Strengthen Rule

Citing regional success in reducing carbon emissions by 40 percent, while injecting more than $1.6 billion into state economies, the nine Northeastern and Mid-Atlantic states participating in the Regional Greenhouse Gas Initiative (RGGI), the nation's first market-based emissions trading program to reduce greenhouse gas pollution, submitted joint comments on November 5, 2014 to the United States Environmental Protection Agency (EPA) supporting the proposed Clean Power Plan (CPP).

The RGGI states commend EPA for utilizing its authority under section 111(d) of the Clean Air Act to set the nation on a clear path toward achieving significant carbon reductions from our power sector, while catalyzing innovation and growth of the clean energy sector. The RGGI states support the general framework of the proposal, which allows flexibility for states to build their own best system of emission reductions, including direct power plant technologies, as well as state energy efficiency and renewable energy programs to reduce power sector carbon emissions.

The RGGI states further welcome EPA's endorsement of regional market-based programs, and RGGI in particular, as a cost-effective approach to achieving compliance with the rule. The RGGI states' experience demonstrates that market-based carbon reduction programs achieve cost-effective emission reductions, enabling a transition to a low-emitting and efficient power sector, while supporting grid reliability and state economies. In addition, trading programs, like RGGI, can provide a simple, transparent, and verifiable system for compliance that allows states to work within the existing regional nature of the electricity grid.

The CPP is projected to achieve a nationwide power sector carbon emission reduction of 30 percent from 2005 levels by 2030. Today, power sector carbon emissions in the RGGI region are more than 40 percent below 2005 levels, while the regional economy has grown by 7 percent. Under RGGI's existing program, regional emissions are projected to decline by 50 percent by 2020. The significant reductions achieved in the RGGI states over a shorter period of time demonstrates that under the CPP more substantial cost-effective emission reductions are possible, particularly from those states that have not yet developed robust energy efficiency and renewable energy programs.

In the comments on the CPP, the RGGI states provide information supporting the position that more cost-effective reductions can be made nationwide. The RGGI states also recommend a number of revisions to the CPP to ensure that early action to reduce carbon emissions from the power sector is recognized, and that the state targets are verifiable, transparent, equitable and enforceable.

Regional Greenhouse Gas Initiative
an initiative of the Northeast and Mid-Atlantic States of the U.S.

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About the Regional Greenhouse Gas Initiative

The Northeast and Mid-Atlantic states participating in the second RGGI control period (Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont) have implemented the first mandatory market-based regulatory program in the U.S. to reduce greenhouse gas emissions. The 2014 RGGI cap is 91 million short tons. The RGGI cap then declines 2.5 percent each year from 2015-2020.

RGGI is composed of individual CO_2 budget trading programs in each state, based on each state's independent legal authority. A CO_2 allowance represents a limited authorization to emit one short ton of CO2, as issued by a respective state. A regulated power plant must hold CO2 allowances equal to its emissions to demonstrate compliance for each three-year control period. RGGI's second control period began on January 1, 2012 and extends through December 31, 2014. For more information visit www.rggi.org

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Executive Orders: *Washington - Obama*

jump to the data table below

The form, substance and numbers of presidential orders has varied dramatically in the history of the US Presidency. Numbering of Executive Orders began in 1907 by the Department of State, which assigned numbers to all the orders then in their files dating from 1862 (Lord 1944, viii). Through those efforts, the frequency of unnumbered orders declined sharply. President Hoover attempted to bring further order and regularity to the processing and documenting of Executive orders (ibid).

But it was not until the Federal Register Act in 1936 that a more thorough contemporaneous documentation of Executive Orders began. Before then, and occasionally afterwards, a later discovery of another order has resulted in assigning a number already in use together with an associated letter (e.g., 7709, 7709-A). This practice explains why the total number of orders issued may be greater than the result that would be obtained by subtracting a president's first order number from his last (and adding 1).

Today virtually all numbered Executive Orders are published. However, the Federal Register Act specified that such orders need not be published if they had "no general applicability and legal effect." Thus, the text of some orders is not available.

In addition to the numbered executive orders, there are many unnumbered orders (see Lord 1943). The best known compilation includes "over 1500" unnumbered orders, but the editor notes that the true total is unknown. Estimates have reportedly ranged as high as 50,000. The editor, Lord, notes emphatically that "no distinction can be made between numbered and unnumbered Order on the basis of subject matter, general applicability, public interest, or legal effect."

There have always been many forms of Presidential orders in addition to the numbered Executive Orders and Executive Orders included in the published "unnumbered series". Currently, these commonly are called "Memorandums" but can have many titles. Decades ago, such documents were commonly titled "Letters."

In this table we present the total number of Executive Orders issued by presidential term (not calendar year). Thus, *this table does not include other forms of written presidential orders (such as memorandums), or discretionary executive actions not accompanied by a published presidential directive.*

The table below is modified and updated from time to time. This table includes our own original tallies for the first FDR term based on Lord (1943, 1944). Our numbers still differ slightly from the numbers posted in the NARA Executive Order Disposition Tables. But we are confident that we have correctly counted the Lord entries (and the NARA figures are very close to ours).

Our APP document collection of numbered Executive Orders is complete with respect to published Orders starting in 1945. We are adding earlier orders to the collection as possible, and welcome (and will gladly acknowledge) contributions to this effort. We will also be adding our independent tallies for unnumbered orders.

Sources:

Lord, Clifford L., ed. 1944. Presidential Executive Orders, Numbered 1-8030, 1862-1938. Prepared by the Historical Records Survey, New York City. New York: Books Inc.

Lord, Clifford L., ed. 1943. List and Index of Presidential Executive Orders (Unnumbered Series, 1789 – 1941). New Jersey Historical Records Survey, Works Progress Administration, Newark, NJ

President	Term	Total Orders[1]	Average / Year	Years in Office	EO Number Range
George Washington	Total	8	1	7.85	*unnumbered*
John Adams	Total	1	0.25	4.00	*unnumbered*
Thomas Jefferson	Total	4	1	8.00	*unnumbered*
James Madison	Total	1	0.13	8.00	*unnumbered*
James Monroe	Total	1	0.13	8.00	*unnumbered*
John Quincy Adams	Total	3	1	4.00	*unnumbered*
Andrew Jackson	Total	12	2	8.00	*unnumbered*
Martin van Buren	Total	10	3	4.00	*unnumbered*
William Henry Harrison	Total	0	0	0.08	*unnumbered*
John Tyler	Total	17	4	3.92	*unnumbered*
James K. Polk	Total	18	5	4.00	*unnumbered*
Zachary Taylor	Total	5	4	1.35	*unnumbered*
Millard Fillmore	Total	12	5	2.65	*unnumbered*
Franklin Pierce	Total	35	9	4.00	*unnumbered*
James Buchanan	Total	16	4	4.00	*unnumbered*
Abraham Lincoln	Total	48	12	4.12	*unnumbered*
Andrew Johnson	Total	79	20	3.89	*unnumbered*
Ulysses S. Grant	Total	217	27	8.00	*unnumbered*
Rutherford B. Hayes	Total	92	23	4.00	*unnumbered*
James Garfield	Total	6	11	0.55	*unnumbered*
Chester Arthur	Total	96	28	3.46	*unnumbered*
Grover Cleveland - I	Total	113	28	4.00	*unnumbered*

Benjamin Harrison	**Total**	**143**	**36**	**4.00**	*unnumbered*
Grover Cleveland - II	**Total**	**140**	**35**	**4.00**	*unnumbered*
William McKinley	**Total**	**185**	**41**	**4.53**	*unnumbered*
Theodore Roosevelt	**Total**	**1,081**	**145**	**7.47**	
William Howard Taft	**Total**	**724**	**181**	**4.00**	
Woodrow Wilson	**Total**	**1,803**	**225**	**8.00**	
Warren G. Harding	**Total**	**522**	**217**	**2.41**	
Calvin Coolidge	**Total**	**1,203**	**215**	**5.59**	
Herbert Hoover	**Total**	**968**	**242**	**4.00**	**5075 - 6070**
Franklin D. Roosevelt	**Total**	**3,721**	**307**	**12.12**	**6071 - 9537**
Harry S. Truman	**Total**	**907**	**117**	**7.78**	**9538 - 10431**
	I	504	133	3.78	9538 - 10029
	II	403	101	4.00	10030 - 10431
Dwight D. Eisenhower	**Total**	**484**	**61**	**8.00**	**10432 - 10913**
	I	266	67	4.00	10432 - 10695-A
	II	218	55	4.00	10696 - 10913
John F. Kennedy	**Total**	**214**	**75**	**2.84**	**10914 - 11127**
Lyndon B. Johnson	**Total**	**325**	**63**	**5.17**	**11128 - 11451**
Richard Nixon	**Total**	**346**	**62**	**5.55**	**11452 - 11797**
	I	247	62	4.00	11452 - 11698
	II	99	64	1.55	11699 - 11797
Gerald R. Ford	**Total**	**169**	**69**	**2.45**	**11798 - 11966**
Jimmy Carter	**Total**	**320**	**80**	**4.00**	**11967 - 12286**
Ronald Reagan	**Total**	**381**	**48**	**8.00**	**12287 - 12667**
	I	213	53	4.00	12287 - 12499
	II	168	42	4.00	12500 - 12667
George Bush	**Total**	**166**	**42**	**4.00**	**12668 - 12833**
William J. Clinton	**Total**	**364**	**46**	**8.00**	**12834 - 13197**
	I	200	50	4.00	12834 - 13033
	II	164	41	4.00	13034 - 13197
George W. Bush	**Total**	**291**	**36**	**8.00**	**13198 - 13488**
	I	173	43	4.00	13198 - 13370
	II	118	30	4.00	13371 - 13488
Barack Obama	**Total**	**200**	**33**	**6.00**	**13489 - 13688**
	I	147	37	4.00	13489 - 13635
	II	53	27	2.00	13636 - 13688

Note: Obama EO counts are updated monthly following the 20th day of the month to recompute average per year. Orders issued between updates can be accessed here:
http://www.presidency.ucsb.edu/executive_orders.php?year=2015

Last Update: Data Through January 20, 2015. *(through 6 years of the Obama Administration)*

Citation: Gerhard Peters. "Executive Orders." The American Presidency Project. Ed. John T. Woolley and Gerhard Peters. Santa Barbara, CA. 1999-2015. Available from the World Wide Web: http://www.presidency.ucsb.edu/data/orders.php.

Notes:
[1] 1789 to 1945 (Roosevelt) data includes "numbered" and "unnumbered" executive orders. 1945 (Truman) & 1967 (Johnson) data includes only numbered executive orders including those with letter designations (ex. Executive Order 9577-A).

Data Sources:
• 1789 - 1945 (Roosevelt) data from Lyn Ragsdale, "Vital Statisitcs on the Presidency: Washington to Clinton," rev. ed. (Washington, D.C.: CQ Press, 1998); data compiled by John Woolley, The American Presidency Project; and figures from the National Archives and Records Administration.
• 1945 (Truman) - present data compiled by Gerhard Peters, The American Presidency Project, from documents contained in the *Federal Register*.

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Warming Trend Continues in 2014

Press Release

2 February 2015

14 of 15 Hottest Years Have Been in 21st Century

Geneva, 2 February 2015 (WMO) The World Meteorological Organization (WMO) has ranked 2014 as the hottest year on record, as part of a continuing trend. After consolidating leading international datasets, WMO noted that the difference in temperature between the warmest years is only a few hundredths of a degree – less than the margin of uncertainty.

Average global air temperatures over land and sea surface in 2014 were 0.57 °C (1.03°F) above the long-term average of 14.00°C (57.2 °F) for the 1961-1990 reference period. By comparison, temperatures were 0.55 °C (1.00°F) above average in 2010 and 0.54°C (0.98°F) above average in 2005, according to WMO calculations. The estimated margin of uncertainty was 0.10°C (0.18°F).

"The overall warming trend is more important than the ranking of an individual year," said WMO Secretary-General Michel Jarraud. "Analysis of the datasets indicates that 2014 was nominally the warmest on record, although there is very little difference between the three hottest years," said Mr Jarraud.

"Fourteen of the fifteen hottest years have all been this century. We expect global warming to continue, given that rising levels of greenhouse gases in the atmosphere and the increasing heat content of the oceans are committing us to a warmer future," he said.

Around 93% of the excess energy trapped in the atmosphere by greenhouse gases from fossil fuels and other human activities ends up in the oceans. Therefore, the heat content of the oceans is key to understanding the climate system. Global sea-surface temperatures reached record levels in 2014.[1]

It is notable that the high 2014 temperatures occurred in the absence of a fully developed El Niño. El Niño occurs when warmer than average sea-surface temperatures in the eastern tropical Pacific combine, in a self-reinforcing loop, with atmospheric pressure systems. This has an overall warming impact on the climate. High temperatures in 1998 – the hottest year before the 21st century – occurred during a strong El-Niño year.

"In 2014, record-breaking heat combined with torrential rainfall and floods in many countries and drought in some others – consistent with the expectation of a changing climate," said Mr Jarraud.

Strong weather and climate services are now more necessary than ever before to increase resilience to disasters and help countries and communities adapt to a fast changing and, in many places, less hospitable climate, said Mr Jarraud.

WMO released the global temperature analysis in advance of climate change negotiations to be held in Geneva from 8 to 13 February. These talks will help to pave the way for an agreement on action to be adopted by the Parties to the UN Framework Convention on Climate Change next December in Paris.

The WMO analysis is based, amongst others, on three complementary datasets maintained by the Hadley Centre of the UK's Met Office and the Climatic Research Unit, University of East Anglia, United Kingdom (combined); the U.S. National Oceanic and Atmospheric Administration (NOAA) National Climatic Data Centre;

and the Goddard Institute of Space Studies (GISS) operated by the National Aeronautics and Space Administration (NASA).

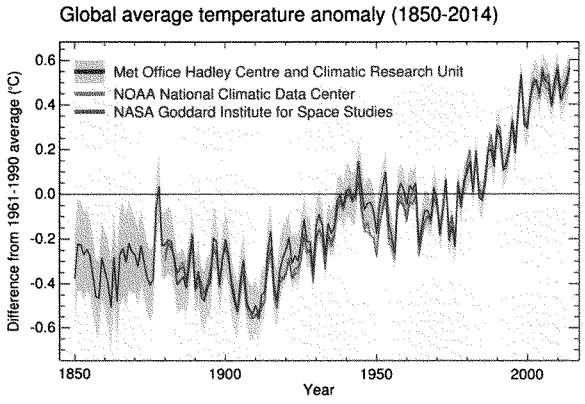
Global average temperatures are also estimated using reanalysis systems, which use the most advanced weather forecasting systems to combine many sources of data to provide a complementary analysis approaches. WMO in particular uses data from the reanalysis produced by the European Centre for Medium-Range Weather Forecasts, which also ranks 2014 as among the four warmest.

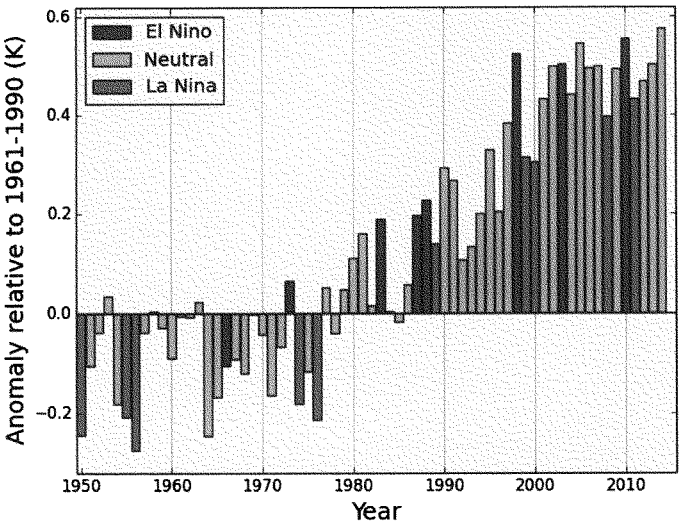
The final report on the Status of the Climate in 2014, with full details of regional trends and extreme events, will be available in March 2015.

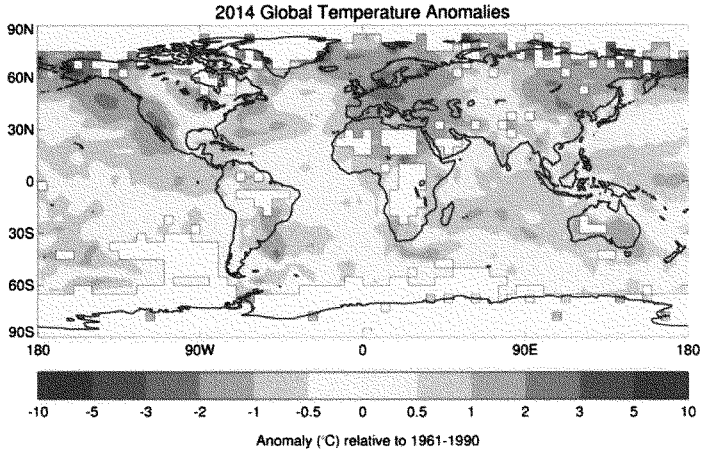
Weather, Climate and Water

For more information: *Please contact Clare Nullis at +41 22 7308478 or 41 79 709 1397 or cnullis{at}wmo.int.*

The full datasets are available on request







[1] See WMO's provisional statement on the Status of the Climate in 2014 http://www.wmo.int/pages/mediacentre/press_releases/pr_1009_en.html (http://www.wmo.int/pages/mediacentre/press_releases/pr_1009_en.html)

The New York Times http://nyti.ms/1veH8QV



POLITICS

Most Republicans Say They Back Climate Action, Poll Finds

By CORAL DAVENPORT and MARJORIE CONNELLY JAN. 30, 2015

WASHINGTON — An overwhelming majority of the American public, including half of Republicans, support government action to curb global warming, according to a poll conducted by The New York Times, Stanford University and the nonpartisan environmental research group Resources for the Future.

In a finding that could have implications for the 2016 presidential campaign, the poll also found that two-thirds of Americans said they were more likely to vote for political candidates who campaign on fighting climate change. They were less likely to vote for candidates who questioned or denied the science that determined that humans caused global warming.

Among Republicans, 48 percent say they are more likely to vote for a candidate who supports fighting climate change, a result that Jon A. Krosnick, a professor of political science at Stanford University and an author of the survey, called "the most powerful finding" in the poll. Many Republican candidates question the science of climate change or do not publicly address the issue.

Nonetheless, 47 percent of Republicans still said they believed that policies designed to curb global warming would hurt the economy.

Although the poll found that climate change was not a top issue in determining a person's vote, a candidate's position on climate change influences how a person will vote. For example, 67 percent of respondents, including 48 percent of Republicans and 72 percent of independents, said they

were less likely to vote for a candidate who said that human-caused climate change is a hoax.

The results came as climate change was emerging as a source of debate in the coming presidential campaign.

In 2012, all the Republican presidential candidates but one — Jon M. Huntsman Jr. — questioned or denied the science that determined that humans caused global warming, and opposed policies to curb greenhouse gas emissions. But over the past year, President Obama has proposed a series of Environmental Protection Agency regulations intended to reduce carbon pollution from coal-fired power plants, which Republicans in Congress have attacked as a "war on coal."

But those positions appear to be out of step with the majority of the electorate.

The poll found that 83 percent of Americans, including 61 percent of Republicans and 86 percent of independents, say that if nothing is done to reduce emissions, global warming will be a very or somewhat serious problem in the future.

But substantial differences remain between the two parties on the issue.

Democrats are much more likely than Republicans or independents to say that the issue of global warming is important to them. Among Democrats, 63 percent said the issue was very or extremely important to them personally. In contrast, 40 percent of independents and only 18 percent of Republicans said the same.

And while the poll found that 74 percent of Americans said that the federal government should be doing a substantial amount to combat climate change, the support was greatest among Democrats and independents. Ninety-one percent of Democrats, 78 percent of independents and 51 percent of Republicans said the government should be fighting climate change.

The nationwide telephone poll was conducted Jan. 7 to 22 with 1,006 adults and has a margin of sampling error of plus or minus 4 percentage points.

Over all, the number of Americans who believe that climate change is

caused by human activity is growing. In a 2011 Stanford University poll, 72 percent of people thought climate change was caused at least in part by human activities. That grew to 81 percent in the latest poll. By party, 88 percent of Democrats, 83 percent of independents and 71 percent of Republicans said that climate change was caused at least in part by human activities.

A majority of Americans — 71 percent — expect that they will be personally hurt by climate change, although to different degrees.

"Some people think they'll be really devastated; some people think they'll be inconvenienced," Mr. Krosnick said.

Aliza Strauss, a Republican homemaker in Teaneck, N.J., said in a follow-up interview that climate change had affected her personally and she was concerned about the effect of climate change in coming years. "A tree fell on my house during Hurricane Sandy, and in the future, it might be worse," she said. "The stronger storms and the flooding will erode the coastline, and that is a big concern for me."

Jason Becker, a self-identified independent and stay-at-home father in Ocoee, Fla., said that although climate change was not his top concern, a candidate who questioned global warming would seem out of touch.

"I don't think it's the No. 1 hot issue in the world," he said. "There are some other things that should take precedent, like the ISIS issue," he said, referring to the Islamic State militants.

But he said of climate change: "If someone feels it's a hoax, they are denying the evidence out there. Many arguments can be made on both sides of the fence. But to just ignore it completely indicates a close-minded individual, and I don't want a close-minded individual in a seat of political power."

Political analysts say the problem for many Republicans is how to carve out a position on climate change that does not turn off voters like Mr. Becker, but that also does not alienate powerful conservative campaign donors. In particular, advocacy groups funded by the billionaire brothers Charles G. and David H. Koch have vowed to ensure that Republican candidates who support climate change action will lose in primary elections.

As a result, many Republicans have begun responding to questions about

climate change by saying "I'm not a scientist" or some variant, as a way to avoid taking a definite position.

The poll found that that vague position might well help Republican candidates in primary contests, particularly among conservative voters. The poll found that 27 percent of Americans were more likely to vote for a candidate who took that position, and 44 percent less likely. But among those who support the Tea Party, 49 percent said they would be more likely to vote for a candidate who said "I'm not a scientist" or a variant.

"It recruits more Tea Partyers than it repels," Mr. Krosnick said.

A pledge to fight climate change appears to have less attraction for older voters. The poll found that older Americans were slightly less inclined to support a candidate who calls for action to reduce global warming and similarly less negative toward a candidate who rejects the premise of global warming.

"Global warming hasn't much importance to me," said William Werner, 73, a retired sales manager in San Antonio. "It is not man-made in my opinion because there have been cycles forever, and we can't do much about that."

He added, "If you're speaking about voting for someone in this country who says they can take actions that will affect global warming, I don't believe it, because we are just not that big a polluter compared to other countries."

Coral Davenport reported from Washington, and Marjorie Connelly from New York. Marina Stefan contributed reporting from New York.

A version of this article appears in print on January 31, 2015, on page A1 of the New York edition with the headline: Half in G.O.P. Say They Back Climate Action.

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The Washington Post

Fact Checker

Inhofe's misleading statements on carbon emissions rule

By Michelle Ye Hee Lee March 13 at 3:00 AM

"EPA also intends to pursue a legislative proposal for an additional $4 billion in mandatory spending for EPA to enforce its climate change regulations ... which 32 states oppose and will result in double-digit electricity price increases in 43 states."

– Sen. Jim Inhofe (R-Okla.), Senate Environment Committee hearing on Environmental Protection Agency budget, March 4, 2015

Inhofe, chair of the Senate Environment Committee, is a vocal skeptic of scientific research that climate change is man-made. He also has been critical of the EPA's Clean Power Plan, which proposes new regulations to limit coal-plant carbon emissions.

Proponents of the Clean Power Plan, a flagship regulatory proposal of the Obama administration, say it will improve public health and the United States would set an example for other countries to curb carbon emissions. Opponents say the plan will have minimal impact on the environment while driving up costs for consumers. The Fact Checker obviously takes no position on the proposal.

Inhofe said 32 states oppose the EPA's proposal, and that it will result in double-digit electricity price hikes in 43 states. He repeated the 32-state figure in a subsequent hearing. Is he correct on these two points?

The Facts

The Clean Power Plan was introduced in June 2014 as a part of President Obama's Climate Action Plan. It proposes to cut carbon emissions from existing power plants 30 percent below 2005 levels by 2030.

Inhofe's staff provided a list by the American Coalition for Clean Coal Electricity of states where governors, attorneys general, legislatures, public utility commissions and departments of environmental quality oppose the rule. The list comprises 32 states, but the actual number of "official" opponents in those states is smaller. There are 15 governors who wrote a September 2014 letter to Obama that the EPA is overstepping its authority. Of the 22 attorneys general in this list, 13 have joined a federal lawsuit against the EPA challenging the rule. State lawmakers in 18 states passed laws or non-binding resolutions against the rule. State officials opposing the rule have expressed frustration that they do not have enough flexibility to comply with the proposal, or that it would burden states.

The 32-state figure does not capture the split in some states, where officials are working on a compliance plan despite broader efforts in their states to challenge the rule. In Kentucky, for example, the attorney general is suing the EPA but the Democratic governor, utilities and environmental groups are are working on a plan to meet EPA requirements while keeping electricity rates low.

Here's a breakdown:

- States with opposition from all five agencies: 4
- States with opposition from either the governor or attorney general: 20
- States with opposition from both the governor and attorney general: 11
- States with no stance from public utility commission or departments of environmental quality, but with opposition from governor, attorney general and/or

state legislature: 10

Much of the opposition against the Clean Power Plan is along party lines, and it is difficult to find prominent sitting Republican state leaders who support it. But rule-making agencies are less likely to vocally oppose it, in part because they are responsible for carrying it out if the legal and political challenges fail.

As for price hikes, Inhofe's staff cited a study commissioned by industry groups that oppose the Clean Power Plan. It found that if every state complied, energy prices would increase between 9 to 18 percent in every state (with double-digit increases in 43 of them), partly because of up-front utility costs from investing in energy efficiency programs. Inhofe's aides noted that this study, unlike the EPA's analysis, considers broader impacts beyond the energy sector.

Clean Power Plan proponents criticize that study, saying it inflates the cost of energy efficiency programs by at least 63 percent, and as high as 150 percent. They say it ignores long-term benefits of energy efficiency programs that ultimately could drive actual energy bills down. It may cost more to produce cleaner energy, but consumers would pay less in bills because less energy would be generated, proponents say. (The Fact Checker previously gave Four Pinocchios to a claim by the National Mining Association that electricity prices will "nearly double" due to clean coal technology.)

The EPA says the benefits ($76 billion) by 2030 will far outweigh the costs of complying with new regulations ($9 billion). The agency estimates electricity bills decrease by 8 percent and Americans would save about $8 on average on their monthly residential bills. (Clean energy advocates say the EPA's calculations are actually conservative.)

It's impossible to make accurate cost projections because the rule is not yet final, and states will decide how to meet their emissions goal. Costs can vary depending on state, regional or local policymakers' decisions.

Resources for the Future, an independent environmental research group, found that electricity prices can range from double-digit increases to as modest as one to two percent on average. "Considerable uncertainty surrounds the structure of future regulations for existing power plants under the (Clean Air Act), but it is possible that a market-based and reasonably cost-effective approach will emerge," its study says.

Emissions and power plants can cross state boundaries, so states can coordinate with each other to lower costs. "The plan's considerable flexibility regarding how and where emission reductions can occur is an important feature because it promotes cost-effectiveness. Whether states will fully capitalize on this flexibility is an open question," a group of environmental economists wrote in an article published by the American Association for the Advancement of Science.

The Pinocchio Test

The Clean Power Plan is a highly politicized issue, and Inhofe's claim reflects views of many Republican lawmakers and industry groups opposing the plan. There are many competing studies, and whether one is more credible than another largely depends on where one stands on climate change or the Clean Power Plan.

Inhofe's count of 32 states is an aggregate count of the various governors, attorneys general, state legislatures, public utility commissions and departments of environmental quality that have expressed opposition. When you break it down by states, the 32-state figure is not as dramatic as it sounds — there are smaller groups of governors and attorneys general who have banded together to challenge the proposal.

His claim that electricity prices will increase by double digits comes from a study commissioned by industry groups that oppose the Clean Power Plan. But the claim is misleading. It assumes the worst-case scenario, and does not consider how states would adopt emissions regulations individually or as a region. A lot of the costs can be driven

down by state, local and regional policymakers, and some of them already are working with the EPA to figure out cost-effective plans. This is a highly technical topic with many caveats yet to be sorted out.

Two Pinocchios

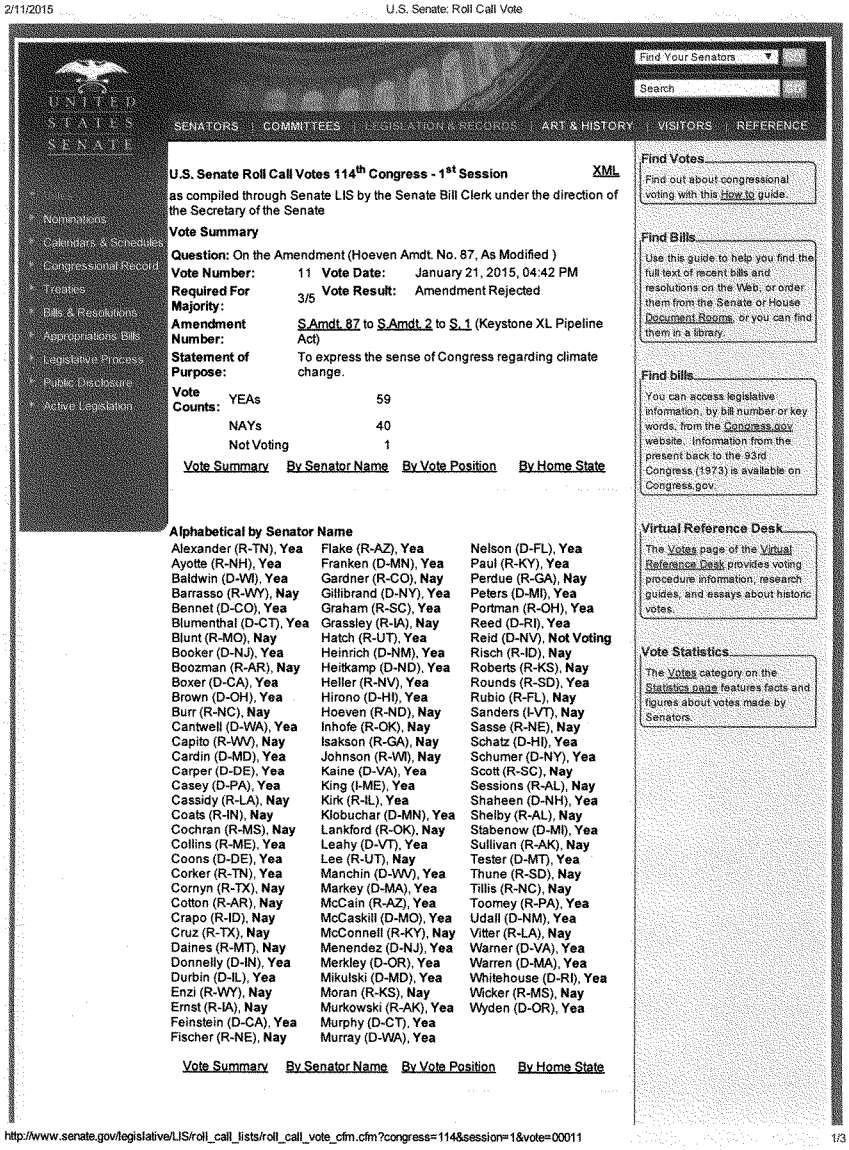
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U.S. Senate Roll Call Votes 114th Congress - 1st Session XML

as compiled through Senate LIS by the Senate Bill Clerk under the direction of the Secretary of the Senate

Vote Summary

Question: On the Amendment (Hoeven Amdt. No. 87, As Modified)

Vote Number:	11	**Vote Date:**	January 21, 2015, 04:42 PM
Required For Majority:	3/5	**Vote Result:**	Amendment Rejected
Amendment Number:	S.Amdt. 87 to S.Amdt. 2 to S. 1 (Keystone XL Pipeline Act)		
Statement of Purpose:	To express the sense of Congress regarding climate change.		

Vote Counts:		
	YEAs	59
	NAYs	40
	Not Voting	1

Vote Summary By Senator Name By Vote Position By Home State

Alphabetical by Senator Name

Alexander (R-TN), **Yea**	Flake (R-AZ), **Yea**	Nelson (D-FL), **Yea**
Ayotte (R-NH), **Yea**	Franken (D-MN), **Yea**	Paul (R-KY), **Yea**
Baldwin (D-WI), **Yea**	Gardner (R-CO), **Nay**	Perdue (R-GA), **Nay**
Barrasso (R-WY), **Nay**	Gillibrand (D-NY), **Yea**	Peters (D-MI), **Yea**
Bennet (D-CO), **Yea**	Graham (R-SC), **Yea**	Portman (R-OH), **Yea**
Blumenthal (D-CT), **Yea**	Grassley (R-IA), **Nay**	Reed (D-RI), **Yea**
Blunt (R-MO), **Nay**	Hatch (R-UT), **Yea**	Reid (D-NV), **Not Voting**
Booker (D-NJ), **Yea**	Heinrich (D-NM), **Yea**	Risch (R-ID), **Nay**
Boozman (R-AR), **Nay**	Heitkamp (D-ND), **Yea**	Roberts (R-KS), **Nay**
Boxer (D-CA), **Yea**	Heller (R-NV), **Yea**	Rounds (R-SD), **Yea**
Brown (D-OH), **Yea**	Hirono (D-HI), **Yea**	Rubio (R-FL), **Nay**
Burr (R-NC), **Nay**	Hoeven (R-ND), **Nay**	Sanders (I-VT), **Nay**
Cantwell (D-WA), **Yea**	Inhofe (R-OK), **Nay**	Sasse (R-NE), **Nay**
Capito (R-WV), **Nay**	Isakson (R-GA), **Nay**	Schatz (D-HI), **Yea**
Cardin (D-MD), **Yea**	Johnson (R-WI), **Nay**	Schumer (D-NY), **Yea**
Carper (D-DE), **Yea**	Kaine (D-VA), **Yea**	Scott (R-SC), **Nay**
Casey (D-PA), **Yea**	King (I-ME), **Yea**	Sessions (R-AL), **Nay**
Cassidy (R-LA), **Nay**	Kirk (R-IL), **Yea**	Shaheen (D-NH), **Yea**
Coats (R-IN), **Nay**	Klobuchar (D-MN), **Yea**	Shelby (R-AL), **Nay**
Cochran (R-MS), **Nay**	Lankford (R-OK), **Nay**	Stabenow (D-MI), **Yea**
Collins (R-ME), **Yea**	Leahy (D-VT), **Yea**	Sullivan (R-AK), **Nay**
Coons (D-DE), **Yea**	Lee (R-UT), **Nay**	Tester (D-MT), **Yea**
Corker (R-TN), **Yea**	Manchin (D-WV), **Yea**	Thune (R-SD), **Nay**
Cornyn (R-TX), **Nay**	Markey (D-MA), **Yea**	Tillis (R-NC), **Nay**
Cotton (R-AR), **Nay**	McCain (R-AZ), **Yea**	Toomey (R-PA), **Yea**
Crapo (R-ID), **Nay**	McCaskill (D-MO), **Yea**	Udall (D-NM), **Yea**
Cruz (R-TX), **Nay**	McConnell (R-KY), **Nay**	Vitter (R-LA), **Nay**
Daines (R-MT), **Nay**	Menendez (D-NJ), **Yea**	Warner (D-VA), **Yea**
Donnelly (D-IN), **Yea**	Merkley (D-OR), **Yea**	Warren (D-MA), **Yea**
Durbin (D-IL), **Yea**	Mikulski (D-MD), **Yea**	Whitehouse (D-RI), **Yea**
Enzi (R-WY), **Nay**	Moran (R-KS), **Nay**	Wicker (R-MS), **Nay**
Ernst (R-IA), **Nay**	Murkowski (R-AK), **Yea**	Wyden (D-OR), **Yea**
Feinstein (D-CA), **Yea**	Murphy (D-CT), **Yea**	
Fischer (R-NE), **Nay**	Murray (D-WA), **Yea**	

Vote Summary By Senator Name By Vote Position By Home State

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Grouped By Vote Position

YEAs ---59

Alexander (R-TN)	Gillibrand (D-NY)	Murphy (D-CT)
Ayotte (R-NH)	Graham (R-SC)	Murray (D-WA)
Baldwin (D-WI)	Hatch (R-UT)	Nelson (D-FL)
Bennet (D-CO)	Heinrich (D-NM)	Paul (R-KY)
Blumenthal (D-CT)	Heitkamp (D-ND)	Peters (D-MI)
Booker (D-NJ)	Heller (R-NV)	Portman (R-OH)
Boxer (D-CA)	Hirono (D-HI)	Reed (D-RI)
Brown (D-OH)	Kaine (D-VA)	Rounds (R-SD)
Cantwell (D-WA)	King (I-ME)	Schatz (D-HI)
Cardin (D-MD)	Kirk (R-IL)	Schumer (D-NY)
Carper (D-DE)	Klobuchar (D-MN)	Shaheen (D-NH)
Casey (D-PA)	Leahy (D-VT)	Stabenow (D-MI)
Collins (R-ME)	Manchin (D-WV)	Tester (D-MT)
Coons (D-DE)	Markey (D-MA)	Toomey (R-PA)
Corker (R-TN)	McCain (R-AZ)	Udall (D-NM)
Donnelly (D-IN)	McCaskill (D-MO)	Warner (D-VA)
Durbin (D-IL)	Menendez (D-NJ)	Warren (D-MA)
Feinstein (D-CA)	Merkley (D-OR)	Whitehouse (D-RI)
Flake (R-AZ)	Mikulski (D-MD)	Wyden (D-OR)
Franken (D-MN)	Murkowski (R-AK)	

NAYs ---40

Barrasso (R-WY)	Ernst (R-IA)	Roberts (R-KS)
Blunt (R-MO)	Fischer (R-NE)	Rubio (R-FL)
Boozman (R-AR)	Gardner (R-CO)	Sanders (I-VT)
Burr (R-NC)	Grassley (R-IA)	Sasse (R-NE)
Capito (R-WV)	Hoeven (R-ND)	Scott (R-SC)
Cassidy (R-LA)	Inhofe (R-OK)	Sessions (R-AL)
Coats (R-IN)	Isakson (R-GA)	Shelby (R-AL)
Cochran (R-MS)	Johnson (R-WI)	Sullivan (R-AK)
Cornyn (R-TX)	Lankford (R-OK)	Thune (R-SD)
Cotton (R-AR)	Lee (R-UT)	Tillis (R-NC)
Crapo (R-ID)	McConnell (R-KY)	Vitter (R-LA)
Cruz (R-TX)	Moran (R-KS)	Wicker (R-MS)
Daines (R-MT)	Perdue (R-GA)	
Enzi (R-WY)	Risch (R-ID)	

Not Voting - 1

Reid (D-NV)

Vote Summary By Senator Name By Vote Position By Home State

Grouped by Home State

Alabama:	Sessions (R-AL), **Nay**	Shelby (R-AL), **Nay**
Alaska:	Murkowski (R-AK), **Yea**	Sullivan (R-AK), **Nay**
Arizona:	Flake (R-AZ), **Yea**	McCain (R-AZ), **Yea**
Arkansas:	Boozman (R-AR), **Nay**	Cotton (R-AR), **Nay**
California:	Boxer (D-CA), **Yea**	Feinstein (D-CA), **Yea**
Colorado:	Bennet (D-CO), **Yea**	Gardner (R-CO), **Nay**
Connecticut:	Blumenthal (D-CT), **Yea**	Murphy (D-CT), **Yea**
Delaware:	Carper (D-DE), **Yea**	Coons (D-DE), **Yea**
Florida:	Nelson (D-FL), **Yea**	Rubio (R-FL), **Nay**
Georgia:	Isakson (R-GA), **Nay**	Perdue (R-GA), **Nay**
Hawaii:	Hirono (D-HI), **Yea**	Schatz (D-HI), **Yea**
Idaho:	Crapo (R-ID), **Nay**	Risch (R-ID), **Nay**
Illinois:	Durbin (D-IL), **Yea**	Kirk (R-IL), **Yea**
Indiana:	Coats (R-IN), **Nay**	Donnelly (D-IN), **Yea**
Iowa:	Ernst (R-IA), **Nay**	Grassley (R-IA), **Nay**
Kansas:	Moran (R-KS), **Nay**	Roberts (R-KS), **Nay**
Kentucky:	McConnell (R-KY), **Nay**	Paul (R-KY), **Yea**
Louisiana:	Cassidy (R-LA), **Nay**	Vitter (R-LA), **Nay**
Maine:	Collins (R-ME), **Yea**	King (I-ME), **Yea**
Maryland:	Cardin (D-MD), **Yea**	Mikulski (D-MD), **Yea**
Massachusetts:	Markey (D-MA), **Yea**	Warren (D-MA), **Yea**
Michigan:	Peters (D-MI), **Yea**	Stabenow (D-MI), **Yea**

Minnesota:	Franken (D-MN), **Yea**	Klobuchar (D-MN), **Yea**
Mississippi:	Cochran (R-MS), **Nay**	Wicker (R-MS), **Nay**
Missouri:	Blunt (R-MO), **Nay**	McCaskill (D-MO), **Yea**
Montana:	Daines (R-MT), **Nay**	Tester (D-MT), **Yea**
Nebraska:	Fischer (R-NE), **Nay**	Sasse (R-NE), **Nay**
Nevada:	Heller (R-NV), **Yea**	Reid (D-NV), **Not Voting**
New Hampshire:	Ayotte (R-NH), **Yea**	Shaheen (D-NH), **Yea**
New Jersey:	Booker (D-NJ), **Yea**	Menendez (D-NJ), **Yea**
New Mexico:	Heinrich (D-NM), **Yea**	Udall (D-NM), **Yea**
New York:	Gillibrand (D-NY), **Yea**	Schumer (D-NY), **Yea**
North Carolina:	Burr (R-NC), **Nay**	Tillis (R-NC), **Nay**
North Dakota:	Heitkamp (D-ND), **Yea**	Hoeven (R-ND), **Nay**
Ohio:	Brown (D-OH), **Yea**	Portman (R-OH), **Yea**
Oklahoma:	Inhofe (R-OK), **Nay**	Lankford (R-OK), **Nay**
Oregon:	Merkley (D-OR), **Yea**	Wyden (D-OR), **Yea**
Pennsylvania:	Casey (D-PA), **Yea**	Toomey (R-PA), **Yea**
Rhode Island:	Reed (D-RI), **Yea**	Whitehouse (D-RI), **Yea**
South Carolina:	Graham (R-SC), **Yea**	Scott (R-SC), **Nay**
South Dakota:	Rounds (R-SD), **Yea**	Thune (R-SD), **Nay**
Tennessee:	Alexander (R-TN), **Yea**	Corker (R-TN), **Yea**
Texas:	Cornyn (R-TX), **Nay**	Cruz (R-TX), **Nay**
Utah:	Hatch (R-UT), **Yea**	Lee (R-UT), **Nay**
Vermont:	Leahy (D-VT), **Yea**	Sanders (I-VT), **Nay**
Virginia:	Kaine (D-VA), **Yea**	Warner (D-VA), **Yea**
Washington:	Cantwell (D-WA), **Yea**	Murray (D-WA), **Yea**
West Virginia:	Capito (R-WV), **Nay**	Manchin (D-WV), **Yea**
Wisconsin:	Baldwin (D-WI), **Yea**	Johnson (R-WI), **Nay**
Wyoming:	Barrasso (R-WY), **Nay**	Enzi (R-WY), **Nay**

Vote Summary By Senator Name By Vote Position By Home State

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U.S. Senate Roll Call Votes 114th Congress - 1st Session XML

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Vote Summary

Question: On the Amendment (Schatz Amdt. No. 58)

Vote Number:	12	**Vote Date:**	January 21, 2015, 05:03 PM
Required For Majority:	3/5	**Vote Result:**	Amendment Rejected
Amendment Number:	S.Amdt. 58 to S.Amdt. 2 to S. 1 (Keystone XL Pipeline Act)		
Statement of Purpose:	To express the sense of Congress regarding climate change.		

Vote Counts:		
	YEAs	50
	NAYs	49
	Not Voting	1

Vote Summary | By Senator Name | By Vote Position | By Home State

Alphabetical by Senator Name

Alexander (R-TN), **Yea**	Flake (R-AZ), **Nay**	Nelson (D-FL), **Yea**
Ayotte (R-NH), **Yea**	Franken (D-MN), **Yea**	Paul (R-KY), **Nay**
Baldwin (D-WI), **Yea**	Gardner (R-CO), **Nay**	Perdue (R-GA), **Nay**
Barrasso (R-WY), **Nay**	Gillibrand (D-NY), **Yea**	Peters (D-MI), **Yea**
Bennet (D-CO), **Yea**	Graham (R-SC), **Yea**	Portman (R-OH), **Nay**
Blumenthal (D-CT), **Yea**	Grassley (R-IA), **Nay**	Reed (D-RI), **Yea**
Blunt (R-MO), **Nay**	Hatch (R-UT), **Nay**	Reid (D-NV), **Not Voting**
Booker (D-NJ), **Yea**	Heinrich (D-NM), **Yea**	Risch (R-ID), **Nay**
Boozman (R-AR), **Nay**	Heitkamp (D-ND), **Yea**	Roberts (R-KS), **Nay**
Boxer (D-CA), **Yea**	Heller (R-NV), **Nay**	Rounds (R-SD), **Nay**
Brown (D-OH), **Yea**	Hirono (D-HI), **Yea**	Rubio (R-FL), **Nay**
Burr (R-NC), **Nay**	Hoeven (R-ND), **Nay**	Sanders (I-VT), **Yea**
Cantwell (D-WA), **Yea**	Inhofe (R-OK), **Nay**	Sasse (R-NE), **Nay**
Capito (R-WV), **Nay**	Isakson (R-GA), **Nay**	Schatz (D-HI), **Yea**
Cardin (D-MD), **Yea**	Johnson (R-WI), **Nay**	Schumer (D-NY), **Yea**
Carper (D-DE), **Yea**	Kaine (D-VA), **Yea**	Scott (R-SC), **Nay**
Casey (D-PA), **Yea**	King (I-ME), **Yea**	Sessions (R-AL), **Nay**
Cassidy (R-LA), **Nay**	Kirk (R-IL), **Yea**	Shaheen (D-NH), **Yea**
Coats (R-IN), **Nay**	Klobuchar (D-MN), **Yea**	Shelby (R-AL), **Nay**
Cochran (R-MS), **Nay**	Lankford (R-OK), **Nay**	Stabenow (D-MI), **Yea**
Collins (R-ME), **Yea**	Leahy (D-VT), **Yea**	Sullivan (R-AK), **Nay**
Coons (D-DE), **Yea**	Lee (R-UT), **Nay**	Tester (D-MT), **Yea**
Corker (R-TN), **Nay**	Manchin (D-WV), **Yea**	Thune (R-SD), **Nay**
Cornyn (R-TX), **Nay**	Markey (D-MA), **Yea**	Tillis (R-NC), **Nay**
Cotton (R-AR), **Nay**	McCain (R-AZ), **Nay**	Toomey (R-PA), **Nay**
Crapo (R-ID), **Nay**	McCaskill (D-MO), **Yea**	Udall (D-NM), **Yea**
Cruz (R-TX), **Nay**	McConnell (R-KY), **Nay**	Vitter (R-LA), **Nay**
Daines (R-MT), **Nay**	Menendez (D-NJ), **Yea**	Warner (D-VA), **Yea**
Donnelly (D-IN), **Yea**	Merkley (D-OR), **Yea**	Warren (D-MA), **Yea**
Durbin (D-IL), **Yea**	Mikulski (D-MD), **Yea**	Whitehouse (D-RI), **Yea**
Enzi (R-WY), **Nay**	Moran (R-KS), **Nay**	Wicker (R-MS), **Nay**
Ernst (R-IA), **Nay**	Murkowski (R-AK), **Nay**	Wyden (D-OR), **Yea**
Feinstein (D-CA), **Yea**	Murphy (D-CT), **Yea**	
Fischer (R-NE), **Nay**	Murray (D-WA), **Yea**	

Vote Summary | By Senator Name | By Vote Position | By Home State

Grouped By Vote Position

YEAs ---50

Alexander (R-TN)	Franken (D-MN)	Murphy (D-CT)
Ayotte (R-NH)	Gillibrand (D-NY)	Murray (D-WA)
Baldwin (D-WI)	Graham (R-SC)	Nelson (D-FL)
Bennet (D-CO)	Heinrich (D-NM)	Peters (D-MI)
Blumenthal (D-CT)	Heitkamp (D-ND)	Reed (D-RI)
Booker (D-NJ)	Hirono (D-HI)	Sanders (I-VT)
Boxer (D-CA)	Kaine (D-VA)	Schatz (D-HI)
Brown (D-OH)	King (I-ME)	Schumer (D-NY)
Cantwell (D-WA)	Kirk (R-IL)	Shaheen (D-NH)
Cardin (D-MD)	Klobuchar (D-MN)	Stabenow (D-MI)
Carper (D-DE)	Leahy (D-VT)	Tester (D-MT)
Casey (D-PA)	Manchin (D-WV)	Udall (D-NM)
Collins (R-ME)	Markey (D-MA)	Warner (D-VA)
Coons (D-DE)	McCaskill (D-MO)	Warren (D-MA)
Donnelly (D-IN)	Menendez (D-NJ)	Whitehouse (D-RI)
Durbin (D-IL)	Merkley (D-OR)	Wyden (D-OR)
Feinstein (D-CA)	Mikulski (D-MD)	

NAYs ---49

Barrasso (R-WY)	Flake (R-AZ)	Portman (R-OH)
Blunt (R-MO)	Gardner (R-CO)	Risch (R-ID)
Boozman (R-AR)	Grassley (R-IA)	Roberts (R-KS)
Burr (R-NC)	Hatch (R-UT)	Rounds (R-SD)
Capito (R-WV)	Heller (R-NV)	Rubio (R-FL)
Cassidy (R-LA)	Hoeven (R-ND)	Sasse (R-NE)
Coats (R-IN)	Inhofe (R-OK)	Scott (R-SC)
Cochran (R-MS)	Isakson (R-GA)	Sessions (R-AL)
Corker (R-TN)	Johnson (R-WI)	Shelby (R-AL)
Cornyn (R-TX)	Lankford (R-OK)	Sullivan (R-AK)
Cotton (R-AR)	Lee (R-UT)	Thune (R-SD)
Crapo (R-ID)	McCain (R-AZ)	Tillis (R-NC)
Cruz (R-TX)	McConnell (R-KY)	Toomey (R-PA)
Daines (R-MT)	Moran (R-KS)	Vitter (R-LA)
Enzi (R-WY)	Murkowski (R-AK)	Wicker (R-MS)
Ernst (R-IA)	Paul (R-KY)	
Fischer (R-NE)	Perdue (R-GA)	

Not Voting - 1

Reid (D-NV)

Vote Summary By Senator Name By Vote Position By Home State

Grouped by Home State

Alabama:	Sessions (R-AL), **Nay**	Shelby (R-AL), **Nay**
Alaska:	Murkowski (R-AK), **Nay**	Sullivan (R-AK), **Nay**
Arizona:	Flake (R-AZ), **Nay**	McCain (R-AZ), **Nay**
Arkansas:	Boozman (R-AR), **Nay**	Cotton (R-AR), **Nay**
California:	Boxer (D-CA), **Yea**	Feinstein (D-CA), **Yea**
Colorado:	Bennet (D-CO), **Yea**	Gardner (R-CO), **Nay**
Connecticut:	Blumenthal (D-CT), **Yea**	Murphy (D-CT), **Yea**
Delaware:	Carper (D-DE), **Yea**	Coons (D-DE), **Yea**
Florida:	Nelson (D-FL), **Yea**	Rubio (R-FL), **Nay**
Georgia:	Isakson (R-GA), **Nay**	Perdue (R-GA), **Nay**
Hawaii:	Hirono (D-HI), **Yea**	Schatz (D-HI), **Yea**
Idaho:	Crapo (R-ID), **Nay**	Risch (R-ID), **Nay**
Illinois:	Durbin (D-IL), **Yea**	Kirk (R-IL), **Yea**
Indiana:	Coats (R-IN), **Nay**	Donnelly (D-IN), **Yea**
Iowa:	Ernst (R-IA), **Nay**	Grassley (R-IA), **Nay**
Kansas:	Moran (R-KS), **Nay**	Roberts (R-KS), **Nay**
Kentucky:	McConnell (R-KY), **Nay**	Paul (R-KY), **Nay**
Louisiana:	Cassidy (R-LA), **Nay**	Vitter (R-LA), **Nay**
Maine:	Collins (R-ME), **Yea**	King (I-ME), **Yea**
Maryland:	Cardin (D-MD), **Yea**	Mikulski (D-MD), **Yea**
Massachusetts:	Markey (D-MA), **Yea**	Warren (D-MA), **Yea**
Michigan:	Peters (D-MI), **Yea**	Stabenow (D-MI), **Yea**

Minnesota:	Franken (D-MN), **Yea**	Klobuchar (D-MN), **Yea**
Mississippi:	Cochran (R-MS), **Nay**	Wicker (R-MS), **Nay**
Missouri:	Blunt (R-MO), **Nay**	McCaskill (D-MO), **Yea**
Montana:	Daines (R-MT), **Nay**	Tester (D-MT), **Yea**
Nebraska:	Fischer (R-NE), **Nay**	Sasse (R-NE), **Nay**
Nevada:	Heller (R-NV), **Nay**	Reid (D-NV), **Not Voting**
New Hampshire:	Ayotte (R-NH), **Yea**	Shaheen (D-NH), **Yea**
New Jersey:	Booker (D-NJ), **Yea**	Menendez (D-NJ), **Yea**
New Mexico:	Heinrich (D-NM), **Yea**	Udall (D-NM), **Yea**
New York:	Gillibrand (D-NY), **Yea**	Schumer (D-NY), **Yea**
North Carolina:	Burr (R-NC), **Nay**	Tillis (R-NC), **Nay**
North Dakota:	Heitkamp (D-ND), **Yea**	Hoeven (R-ND), **Nay**
Ohio:	Brown (D-OH), **Yea**	Portman (R-OH), **Nay**
Oklahoma:	Inhofe (R-OK), **Nay**	Lankford (R-OK), **Nay**
Oregon:	Merkley (D-OR), **Yea**	Wyden (D-OR), **Yea**
Pennsylvania:	Casey (D-PA), **Yea**	Toomey (R-PA), **Nay**
Rhode Island:	Reed (D-RI), **Yea**	Whitehouse (D-RI), **Yea**
South Carolina:	Graham (R-SC), **Yea**	Scott (R-SC), **Nay**
South Dakota:	Rounds (R-SD), **Nay**	Thune (R-SD), **Nay**
Tennessee:	Alexander (R-TN), **Yea**	Corker (R-TN), **Nay**
Texas:	Cornyn (R-TX), **Nay**	Cruz (R-TX), **Nay**
Utah:	Hatch (R-UT), **Nay**	Lee (R-UT), **Nay**
Vermont:	Leahy (D-VT), **Yea**	Sanders (I-VT), **Yea**
Virginia:	Kaine (D-VA), **Yea**	Warner (D-VA), **Yea**
Washington:	Cantwell (D-WA), **Yea**	Murray (D-WA), **Yea**
West Virginia:	Capito (R-WV), **Nay**	Manchin (D-WV), **Yea**
Wisconsin:	Baldwin (D-WI), **Yea**	Johnson (R-WI), **Nay**
Wyoming:	Barrasso (R-WY), **Nay**	Enzi (R-WY), **Nay**

Vote Summary By Senator Name By Vote Position By Home State

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U.S. Senate Roll Call Votes 114th Congress - 1st Session XML

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Vote Summary

Question: On the Amendment (Whitehouse Amdt. No. 29)

Vote Number:	10	**Vote Date:**	January 21, 2015, 04:23 PM
Required For Majority:	3/5	**Vote Result:**	Amendment Agreed to
Amendment Number:	S.Amdt. 29 to S.Amdt. 2 to S. 1 (Keystone XL Pipeline Act)		
Statement of Purpose:	To express the sense of the Senate that climate change is real and not a hoax.		

Vote Counts:		
	YEAs	98
	NAYs	1
	Not Voting	1

Vote Summary By Senator Name By Vote Position By Home State

Alphabetical by Senator Name

Alexander (R-TN), **Yea**	Flake (R-AZ), **Yea**	Nelson (D-FL), **Yea**
Ayotte (R-NH), **Yea**	Franken (D-MN), **Yea**	Paul (R-KY), **Yea**
Baldwin (D-WI), **Yea**	Gardner (R-CO), **Yea**	Perdue (R-GA), **Yea**
Barrasso (R-WY), **Yea**	Gillibrand (D-NY), **Yea**	Peters (D-MI), **Yea**
Bennet (D-CO), **Yea**	Graham (R-SC), **Yea**	Portman (R-OH), **Yea**
Blumenthal (D-CT), **Yea**	Grassley (R-IA), **Yea**	Reed (D-RI), **Yea**
Blunt (R-MO), **Yea**	Hatch (R-UT), **Yea**	Reid (D-NV), **Not Voting**
Booker (D-NJ), **Yea**	Heinrich (D-NM), **Yea**	Risch (R-ID), **Yea**
Boozman (R-AR), **Yea**	Heitkamp (D-ND), **Yea**	Roberts (R-KS), **Yea**
Boxer (D-CA), **Yea**	Heller (R-NV), **Yea**	Rounds (R-SD), **Yea**
Brown (D-OH), **Yea**	Hirono (D-HI), **Yea**	Rubio (R-FL), **Yea**
Burr (R-NC), **Yea**	Hoeven (R-ND), **Yea**	Sanders (I-VT), **Yea**
Cantwell (D-WA), **Yea**	Inhofe (R-OK), **Yea**	Sasse (R-NE), **Yea**
Capito (R-WV), **Yea**	Isakson (R-GA), **Yea**	Schatz (D-HI), **Yea**
Cardin (D-MD), **Yea**	Johnson (R-WI), **Yea**	Schumer (D-NY), **Yea**
Carper (D-DE), **Yea**	Kaine (D-VA), **Yea**	Scott (R-SC), **Yea**
Casey (D-PA), **Yea**	King (I-ME), **Yea**	Sessions (R-AL), **Yea**
Cassidy (R-LA), **Yea**	Kirk (R-IL), **Yea**	Shaheen (D-NH), **Yea**
Coats (R-IN), **Yea**	Klobuchar (D-MN), **Yea**	Shelby (R-AL), **Yea**
Cochran (R-MS), **Yea**	Lankford (R-OK), **Yea**	Stabenow (D-MI), **Yea**
Collins (R-ME), **Yea**	Leahy (D-VT), **Yea**	Sullivan (R-AK), **Yea**
Coons (D-DE), **Yea**	Lee (R-UT), **Yea**	Tester (D-MT), **Yea**
Corker (R-TN), **Yea**	Manchin (D-WV), **Yea**	Thune (R-SD), **Yea**
Cornyn (R-TX), **Yea**	Markey (D-MA), **Yea**	Tillis (R-NC), **Yea**
Cotton (R-AR), **Yea**	McCain (R-AZ), **Yea**	Toomey (R-PA), **Yea**
Crapo (R-ID), **Yea**	McCaskill (D-MO), **Yea**	Udall (D-NM), **Yea**
Cruz (R-TX), **Yea**	McConnell (R-KY), **Yea**	Vitter (R-LA), **Yea**
Daines (R-MT), **Yea**	Menendez (D-NJ), **Yea**	Warner (D-VA), **Yea**
Donnelly (D-IN), **Yea**	Merkley (D-OR), **Yea**	Warren (D-MA), **Yea**
Durbin (D-IL), **Yea**	Mikulski (D-MD), **Yea**	Whitehouse (D-RI), **Yea**
Enzi (R-WY), **Yea**	Moran (R-KS), **Yea**	Wicker (R-MS), **Nay**
Ernst (R-IA), **Yea**	Murkowski (R-AK), **Yea**	Wyden (D-OR), **Yea**
Feinstein (D-CA), **Yea**	Murphy (D-CT), **Yea**	
Fischer (R-NE), **Yea**	Murray (D-WA), **Yea**	

Vote Summary By Senator Name By Vote Position By Home State

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Grouped By Vote Position

YEAs ---98

Alexander (R-TN)	Fischer (R-NE)	Murphy (D-CT)
Ayotte (R-NH)	Flake (R-AZ)	Murray (D-WA)
Baldwin (D-WI)	Franken (D-MN)	Nelson (D-FL)
Barrasso (R-WY)	Gardner (R-CO)	Paul (R-KY)
Bennet (D-CO)	Gillibrand (D-NY)	Perdue (R-GA)
Blumenthal (D-CT)	Graham (R-SC)	Peters (D-MI)
Blunt (R-MO)	Grassley (R-IA)	Portman (R-OH)
Booker (D-NJ)	Hatch (R-UT)	Reed (D-RI)
Boozman (R-AR)	Heinrich (D-NM)	Risch (R-ID)
Boxer (D-CA)	Heitkamp (D-ND)	Roberts (R-KS)
Brown (D-OH)	Heller (R-NV)	Rounds (R-SD)
Burr (R-NC)	Hirono (D-HI)	Rubio (R-FL)
Cantwell (D-WA)	Hoeven (R-ND)	Sanders (I-VT)
Capito (R-WV)	Inhofe (R-OK)	Sasse (R-NE)
Cardin (D-MD)	Isakson (R-GA)	Schatz (D-HI)
Carper (D-DE)	Johnson (R-WI)	Schumer (D-NY)
Casey (D-PA)	Kaine (D-VA)	Scott (R-SC)
Cassidy (R-LA)	King (I-ME)	Sessions (R-AL)
Coats (R-IN)	Kirk (R-IL)	Shaheen (D-NH)
Cochran (R-MS)	Klobuchar (D-MN)	Shelby (R-AL)
Collins (R-ME)	Lankford (R-OK)	Stabenow (D-MI)
Coons (D-DE)	Leahy (D-VT)	Sullivan (R-AK)
Corker (R-TN)	Lee (R-UT)	Tester (D-MT)
Cornyn (R-TX)	Manchin (D-WV)	Thune (R-SD)
Cotton (R-AR)	Markey (D-MA)	Tillis (R-NC)
Crapo (R-ID)	McCain (R-AZ)	Toomey (R-PA)
Cruz (R-TX)	McCaskill (D-MO)	Udall (D-NM)
Daines (R-MT)	McConnell (R-KY)	Vitter (R-LA)
Donnelly (D-IN)	Menendez (D-NJ)	Warner (D-VA)
Durbin (D-IL)	Merkley (D-OR)	Warren (D-MA)
Enzi (R-WY)	Mikulski (D-MD)	Whitehouse (D-RI)
Ernst (R-IA)	Moran (R-KS)	Wyden (D-OR)
Feinstein (D-CA)	Murkowski (R-AK)	

NAYs ---1

Wicker (R-MS)

Not Voting - 1

Reid (D-NV)

Vote Summary By Senator Name By Vote Position By Home State

Grouped by Home State

Alabama:	Sessions (R-AL), **Yea**	Shelby (R-AL), **Yea**
Alaska:	Murkowski (R-AK), **Yea**	Sullivan (R-AK), **Yea**
Arizona:	Flake (R-AZ), **Yea**	McCain (R-AZ), **Yea**
Arkansas:	Boozman (R-AR), **Yea**	Cotton (R-AR), **Yea**
California:	Boxer (D-CA), **Yea**	Feinstein (D-CA), **Yea**
Colorado:	Bennet (D-CO), **Yea**	Gardner (R-CO), **Yea**
Connecticut:	Blumenthal (D-CT), **Yea**	Murphy (D-CT), **Yea**
Delaware:	Carper (D-DE), **Yea**	Coons (D-DE), **Yea**
Florida:	Nelson (D-FL), **Yea**	Rubio (R-FL), **Yea**
Georgia:	Isakson (R-GA), **Yea**	Perdue (R-GA), **Yea**
Hawaii:	Hirono (D-HI), **Yea**	Schatz (D-HI), **Yea**
Idaho:	Crapo (R-ID), **Yea**	Risch (R-ID), **Yea**
Illinois:	Durbin (D-IL), **Yea**	Kirk (R-IL), **Yea**
Indiana:	Coats (R-IN), **Yea**	Donnelly (D-IN), **Yea**
Iowa:	Ernst (R-IA), **Yea**	Grassley (R-IA), **Yea**
Kansas:	Moran (R-KS), **Yea**	Roberts (R-KS), **Yea**
Kentucky:	McConnell (R-KY), **Yea**	Paul (R-KY), **Yea**
Louisiana:	Cassidy (R-LA), **Yea**	Vitter (R-LA), **Yea**
Maine:	Collins (R-ME), **Yea**	King (I-ME), **Yea**
Maryland:	Cardin (D-MD), **Yea**	Mikulski (D-MD), **Yea**
Massachusetts:	Markey (D-MA), **Yea**	Warren (D-MA), **Yea**
Michigan:	Peters (D-MI), **Yea**	Stabenow (D-MI), **Yea**

Minnesota:	Franken (D-MN), **Yea**	Klobuchar (D-MN), **Yea**
Mississippi:	Cochran (R-MS), **Yea**	Wicker (R-MS), **Nay**
Missouri:	Blunt (R-MO), **Yea**	McCaskill (D-MO), **Yea**
Montana:	Daines (R-MT), **Yea**	Tester (D-MT), **Yea**
Nebraska:	Fischer (R-NE), **Yea**	Sasse (R-NE), **Yea**
Nevada:	Heller (R-NV), **Yea**	Reid (D-NV), **Not Voting**
New Hampshire:	Ayotte (R-NH), **Yea**	Shaheen (D-NH), **Yea**
New Jersey:	Booker (D-NJ), **Yea**	Menendez (D-NJ), **Yea**
New Mexico:	Heinrich (D-NM), **Yea**	Udall (D-NM), **Yea**
New York:	Gillibrand (D-NY), **Yea**	Schumer (D-NY), **Yea**
North Carolina:	Burr (R-NC), **Yea**	Tillis (R-NC), **Yea**
North Dakota:	Heitkamp (D-ND), **Yea**	Hoeven (R-ND), **Yea**
Ohio:	Brown (D-OH), **Yea**	Portman (R-OH), **Yea**
Oklahoma:	Inhofe (R-OK), **Yea**	Lankford (R-OK), **Yea**
Oregon:	Merkley (D-OR), **Yea**	Wyden (D-OR), **Yea**
Pennsylvania:	Casey (D-PA), **Yea**	Toomey (R-PA), **Yea**
Rhode Island:	Reed (D-RI), **Yea**	Whitehouse (D-RI), **Yea**
South Carolina:	Graham (R-SC), **Yea**	Scott (R-SC), **Yea**
South Dakota:	Rounds (R-SD), **Yea**	Thune (R-SD), **Yea**
Tennessee:	Alexander (R-TN), **Yea**	Corker (R-TN), **Yea**
Texas:	Cornyn (R-TX), **Yea**	Cruz (R-TX), **Yea**
Utah:	Hatch (R-UT), **Yea**	Lee (R-UT), **Yea**
Vermont:	Leahy (D-VT), **Yea**	Sanders (I-VT), **Yea**
Virginia:	Kaine (D-VA), **Yea**	Warner (D-VA), **Yea**
Washington:	Cantwell (D-WA), **Yea**	Murray (D-WA), **Yea**
West Virginia:	Capito (R-WV), **Yea**	Manchin (D-WV), **Yea**
Wisconsin:	Baldwin (D-WI), **Yea**	Johnson (R-WI), **Yea**
Wyoming:	Barrasso (R-WY), **Yea**	Enzi (R-WY), **Yea**

Vote Summary | By Senator Name | By Vote Position | By Home State

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