

**2015 PARIS INTERNATIONAL CLIMATE NEGOTIA-
TIONS: EXAMINING THE ECONOMIC AND ENVI-
RONMENTAL IMPACTS**

HEARING

BEFORE THE

SUBCOMMITTEE ON MULTILATERAL
INTERNATIONAL DEVELOPMENT, MULTILATERAL
INSTITUTIONS, AND INTERNATIONAL ECONOMIC,
ENERGY, AND ENVIRONMENTAL POLICY

OF THE

**COMMITTEE ON FOREIGN RELATIONS
UNITED STATES SENATE**

ONE HUNDRED FOURTEENTH CONGRESS

FIRST SESSION

OCTOBER 20, 2015

Printed for the use of the Committee on Foreign Relations



Available via the World Wide Web: <https://www.govinfo.gov>

U.S. GOVERNMENT PUBLISHING OFFICE

35-994 PDF

WASHINGTON : 2019

COMMITTEE ON FOREIGN RELATIONS

BOB CORKER, TENNESSEE, *Chairman*

JAMES E. RISCH, Idaho	BENJAMIN L. CARDIN, Maryland
MARCO RUBIO, Florida	BARBARA BOXER, California
RON JOHNSON, Wisconsin	ROBERT MENENDEZ, New Jersey
JEFF FLAKE, Arizona	JEANNE SHAHEEN, New Hampshire
CORY GARDNER, Colorado	CHRISTOPHER A. COONS, Delaware
DAVID PERDUE, Georgia	TOM UDALL, New Mexico
JOHNNY ISAKSON, Georgia	CHRISTOPHER MURPHY, Connecticut
RAND PAUL, Kentucky	TIM KAINE, Virginia
JOHN BARRASSO, Wyoming	EDWARD J. MARKEY, Massachusetts

LESTER MUNSON, *Staff Director*

JODI B. HERMAN, *Democratic Staff Director*

JOHN DUTTON, *Chief Clerk*

SUBCOMMITTEE ON MULTILATERAL INTERNATIONAL
DEVELOPMENT, MULTILATERAL INSTITUTIONS,
AND INTERNATIONAL ECONOMIC, ENERGY, AND
ENVIRONMENTAL POLICY

JOHN BARRASSO, Wyoming, *Chairman*

DAVID PERDUE, Georgia	TOM UDALL, New Mexico
JAMES E. RISCH, Idaho	BARBARA BOXER, California
JEFF FLAKE, Arizona	JEANNE SHAHEEN, New Hampshire
CORY GARDNER, Colorado	EDWARD J. MARKEY, Massachusetts

CONTENTS

	Page
Hon. John Barrasso, U.S. Senator From Wyoming	1
Hon. Tom Udall, U.S. Senator From New Mexico	3
Todd D. Stern, Special Envoy for Climate Change, U.S. Department of State, Washington, DC	5
Prepared Statement	6

ADDITIONAL MATERIAL SUBMITTED FOR THE RECORD

Written Statement of Senator James M. Inhofe, Chairman, U.S. Senate Environment and Public Works Committee	32
Responses of Todd Stern to Questions Submitted by Senator Rand Paul	34

2015 PARIS INTERNATIONAL CLIMATE NEGOTIATIONS: EXAMINING THE ECONOMIC AND ENVIRONMENTAL IMPACTS

TUESDAY, OCTOBER 20, 2015

U.S. SENATE, SUBCOMMITTEE ON MULTILATERAL INTERNATIONAL DEVELOPMENT, MULTILATERAL INSTITUTIONS, AND INTERNATIONAL ECONOMIC, ENERGY, AND ENVIRONMENTAL POLICY, COMMITTEE ON FOREIGN RELATIONS,

Washington, DC.

The subcommittee met, pursuant to notice, at 2:50 p.m., in room SD-419, Dirksen Senate Office Building, Hon. John Barrasso (chairman of the subcommittee) presiding.

Present: Senators Barrasso, Gardner, Udall, Boxer, Markey, Murphy, Kaine, and Coons.

OPENING STATEMENT OF HON. JOHN BARRASSO, U.S. SENATOR FROM WYOMING

Senator BARRASSO. Good afternoon. I would like to call this hearing to order, the Senate Foreign Relations Subcommittee on Multilateral International Development, Multilateral Institutions, and International Economic, Energy, and Environmental Policy. It may be the longest named subcommittee in the history of the Senate. [Laughter.]

Senator BARRASSO. I would also like to welcome our ranking member, Senator Udall, and our guests today.

Today we are examining the objectives and the intentions of the administration's international climate negotiations in Paris, as well as the potential ramifications for the United States.

The International Climate Change Conference will take place from November 30 to December 11 in Paris this year. With this event happening in a matter of little more than a month, I think it is important that we examine what the administration plans to accomplish in Paris.

So I am so pleased to welcome our witness from the State Department, Mr. Todd Stern. He is the United States Special Envoy for Climate Change and will be the lead negotiator for the Paris Climate Change Conference. He has a unique perspective as to what it is that this administration is negotiating for in any climate change deal and what any final deal may look like. So, Mr. Stern, thank you very much for being with us today.

While I support international dialogue on global environmental problems, I do have serious concerns about the impact any deal

reached in Paris will have on the American economy, on our international priorities, and on our environmental goals.

I am hearing from my constituents back home about their concerns. They are concerned that the pledges that the President is committing the United States to will strengthen foreign economies at the expense of American workers and will line the pockets of developing nations with millions of American taxpayer dollars. All this is being proposed at a time of scarce resources which are needed to strengthen our economy, to fend off threats to our Nation's security, and to address humanitarian crises abroad.

Whatever deal is reached in the back rooms of the Paris Climate Change Conference, it has been telegraphed by this administration that the deal will be a calculated end run around Congress. Just like the Kyoto Protocol and the United Nations Framework Convention on Climate Change, any agreement that commits our Nation to targets or timetables must go through the process established by the Founders of our Constitution. It must be submitted to the United States Senate for its advice and consent.

The President has made clear that he does not see it that way, as was the case with the Iranian nuclear deal. For that reason, we need to send a message to the nations that are partners with the President in any final deal that beyond a shadow of a doubt, the Senate will not stand by any agreement that binds the American people to targets or timetables on emissions without our advice and consent.

The President's joint announcement with China has sent a loud and clear signal that a Paris deal could be an economic and environmental loser for the American people. In November 2014, President Obama and the president of China made a joint announcement on targets to reduce net greenhouse gas emissions. President Obama pledged to reduce U.S. net greenhouse gases by 26 to 28 percent by 2025. China agreed to peak its carbon dioxide emissions in 2030. This agreement forces Americans to drastically decrease our emissions immediately while China will be allowed to let their emissions continue to rise for the next 15 years.

According to the Congressional Research Service, China has been the highest emitter of greenhouse gases across the globe since around 2007. Currently China emits 23 percent of net greenhouse gases worldwide while our Nation's share has declined to only 13 percent. This is a terrible deal for Americans, but it is a great deal for the Chinese Government and the Chinese economy.

Now, I also want to address my concerns about the administration's \$3 billion pledge to the Green Climate Fund. The American public does not support paying their hard-earned taxpayer dollars into a slush fund that spends billions on international climate change programs in developing nations to address the impacts of extreme weather. The need for spending on natural disasters is down historically while other international priorities have increased.

According to the 2014 Annual Global Climate and Catastrophe Report, released Aon Benfield, quote, "global natural disasters in 2014 combined to cause economic losses of \$132 billion, 37 percent below"—37 percent below—"the 10-year average of \$211 billion."

With immediate global priorities such as the upheaval in the Middle East in Syria and Iraq to a resurgent Russia in Eastern Europe and abroad, we should be focusing our resources on countering global terrorist threats, on humanitarian assistance, on democracy promotion, and on embassy security measures.

The only reason I can see the administration wants to provide this funding is if there would be no deal without this wealth transfer to developing nations. Despite talk of American leadership bringing everyone the table to save the planet, it is apparently American taxpayer cash that will pay off developing nations to act.

American taxpayer cash is the only green that the international bureaucrats in Paris seem to care about, and it is the only green that will result from any climate change agreement because after all is said and done, this deal will not achieve the environmental gains that have been promised or will be promised. In fact, the environment will be in worse shape. Nations like China that are the main emitters internationally are getting a pass on having to take any shared economic pain. If China does not play a major role and contributes significantly, all that will result environmentally from Paris is hot air from bureaucrats and politicians, overpromising and underdelivering in front of the cameras. There will be no temperature reductions. Meanwhile, international priorities will go underfunded.

So I have serious concerns about what will occur in Paris and ask that the members of this committee consider these concerns as we approach the Climate Change Conference.

I would like to now turn to Ranking Member Senator Udall to offer his opening remarks.

**OPENING STATEMENT OF HON. TOM UDALL,
U.S. SENATOR FROM NEW MEXICO**

Senator UDALL. Chairman Barrasso, thank you very much today. And I think you are right. It is very appropriate for us to have this hearing at this point.

And thank you, Mr. Stern, for appearing before our subcommittee today.

We face an urgent task in Paris to bring the international community together, to chart a more sustainable future for our children and our grandchildren. NASA estimates that 2015 is 93 percent likely to be the warmest year on record, and the current record holder last year, 2014.

Global warming is one of our greatest challenges. It requires a global effort through a comprehensive international agreement. That is the only way we can truly tackle this problem. It is an environmental challenge. It is an energy challenge. It is a public health challenge. And it is a national security challenge. It is a challenge to preserve our planet. And no one, no country is immune from that challenge or can meet that challenge alone.

For years, the global community has looked for answers to the problem. We have gone through various international agreements and protocols. Sadly, the United States has often failed to lead on this in the past.

But today I am more optimistic. I am optimistic even with the tremendous political challenges here in Congress. I have led the

charge in our Appropriations Committee to fight against dangerous environmental riders. Those riders would do great damage to our efforts in Paris. I will continue to fight them, and I am sure that they will fail.

And with increased U.S. leadership over the last 5 years, we have made great international progress. We have been working on an agreement that will be applicable to all. That is what we need, an agreement that is comprehensive, that is fair, and that ensures every country does its fair share on climate change. The Paris agreement takes us in the right direction, signing up countries developed and developing to halt the climate crisis. The United States must lead and set an example for other countries. This is the right thing to do to protect our economy in the long term.

More importantly, it is the essential thing to do for future generations. Over 150 countries will be part of the Paris agreement. Each country is setting out how they will tackle the problem on their own terms. This is encouraging and it is an important change from the past. The largest emitters in the developing world, China and India, are making serious commitments. Opponents of U.S. climate action have argued that other nations, especially China, would never act to limit their emissions. Well, now they are. This is critical to ensure we act globally and fight climate pollution that leads to catastrophic climate change.

Another sign of progress, the world's largest oil and gas companies are supporting a climate agreement. BP, Shell, and the massive state oil companies of Saudi Arabia and Mexico are among the 10 major oil companies making commitments.

The United States can help lead this effort not only at the negotiating table in Paris but on the front lines in New Mexico and Florida and Alaska and every State. We can create clean energy jobs. We can put energy independence and climate stability at the forefront.

My State of New Mexico will benefit greatly from this agreement. New Mexico is at the bull's eye for climate change, with historic drought and other harsh impacts. But we are also leading in new and innovative ways for renewable energy and breakthrough technologies. There are currently more than 98 solar companies in New Mexico employing 1,600 people. There are now more solar jobs in the United States than coal jobs. Renewable energy jobs and solutions are in abundance in New Mexico, and this is true for many other States.

Support for renewable energy is strong. Nearly half of the U.S. Senate supported my amendment in January for a renewable electricity standard that would have mandated 25 percent of our energy come from renewable resources by 2025.

So while each State faces unique climate impacts and challenges, each State has unique strengths and solutions to contribute. Together we can tackle this challenge as a unified country, and so we can lead the global community as we confront this challenge as a unified planet. Together we can find a path forward that works. The Paris agreement represents a historic opportunity to build a global effort to address climate change. It is an opportunity and an obligation and one that history will show was the right thing to do.

Thank you, Mr. Chairman.

Senator BARRASSO. Thank you so very much, Senator Udall.

And I would also, without objection, like to submit for the record a statement from Senator Inhofe, who is not a member of this subcommittee.

[EDITOR'S NOTE.—The statement mentioned above can be found in the "Additional Material Submitted for the Record" section at the end of this hearing.]

Senator BARRASSO. Once again, I would like to thank the Special Envoy on Climate Change, Todd Stern, for joining us today. Your full statement will be entered into the record. And I would ask you to summarize it in about 5 minutes in order for the members to have an opportunity to ask questions. With that, we turn to you, Mr. Stern. Thank you.

STATEMENT OF TODD D. STERN, SPECIAL ENVOY FOR CLIMATE CHANGE, U.S. DEPARTMENT OF STATE, WASHINGTON, DC

Mr. STERN. Thank you very much, Mr. Chairman. I am pleased to be here and appreciate the opportunity to testify before your subcommittee.

Today I want to explain the approach we have taken to the international climate change negotiations over the last number of years and what we hope to accomplish in Paris.

The Obama administration came into office convinced that we had to take bold action to tackle climate change, but we also knew that a fundamental reframing of our approach to international climate negotiations would be needed. We absorbed the hard lessons of Kyoto and heeded concerns. We concluded that targets should be set by countries themselves, not imposed on them; that all countries should not be expected to act, recognizing that developing countries face unique challenges; and that we should expect strong transparency and accountability from all countries. That is the deal we have been fighting for.

The President and Secretary Kerry have worked hard on building international support for this approach, working with leaders from China to Brazil to India, from African countries, and small island states that are facing clear and present threats from a changing climate.

In particular, the historic joint announcement last year between President Obama and President Xi, supplemented by their recent joint statement, marked a new era of climate diplomacy. We now live in a near reality where China has pledged to peak its emissions, to bring on line an average of a gigawatt of clean energy every week from now until 2030, to implement a national cap and trade plan, and to provide \$3.1 billion in climate finance, and where more than 150 countries have announced their own targets and plans to address climate change. U.S. leadership has been at the heart of this progress.

Most fundamentally, we have leveled the playing field by leading on a structure and process that has led to those 150-plus submissions, including some 110 from developing countries. This by itself is a testament to the buy-in of countries around the world and a

demonstration that the old, rigid bifurcation between developed and developing countries is changing.

In particular, we proposed the structure of nationally determined mitigation contributions. To ensure maximum participation, we needed to reassure countries that they could join the agreement without disrupting their economic and development priorities. We proposed that parties submit their targets early rather than at the end of Paris because such exposure would push all to do their best, and the result has been a drum beat of submissions. We have pushed for the idea of successive rounds of targets, coupled with longer term goals for greater ambition. We have pressed for an approach that continues to recognize that developing countries have unique challenges but asks all countries to take action to address this global challenge.

We are leading proponents of a robust transparency system of reporting and review, with flexibility for those who need it based on their capacity.

And we have backed nonlegally binding targets as the best way to ensure broad participation since many countries would be unwilling to accept binding targets, and we are unwilling to have a structure based on Kyoto. And we are convinced as well that this approach will bolster rather than undermine ambition.

An agreement like this, if I may say, is exactly what voices from both sides of the aisle have been calling for, for a long time.

A strong Paris agreement of this kind is in the interests of the United States. It is in our economic interests because the costs of inaction, properly accounted for, will dwarf the costs of acting and because no one is better positioned than the United States to win big in a multi-trillion-dollar 21st century market for low carbon energy innovation.

It is in our diplomatic interest because climate change is a high and rising priority for countries all over the world, and it is untenable for the United States to stand apart.

It is in our national security interests because unchecked climate change threatens global disruptions. Admiral Samuel Locklear, then Commander of Pacific Command in 2013, said upheaval related to climate change, "is probably the most likely thing that is going to happen, that will cripple the security environment probably more likely than the other scenarios we all often talk about."

Mr. Chairman, the climate deal is far from done, but we will strive to produce a strong, solid outcome.

I will be happy to take your questions.

[The prepared statement of Mr. Stern follows:]

PREPARED STATEMENT OF TODD D. STERN

Mr. Chairman, I am pleased to be here and appreciate the opportunity to testify before your subcommittee.

I look forward to discussing the issues on today's agenda with you and your colleagues on the subcommittee. I thought it might be useful at the outset for me to explain the approach we have taken to the international climate change negotiations over the last number of years and to explain what we hope to accomplish in the Paris conference in December.

The Obama administration came into office convinced that we had to take bold, concerted action to tackle the very real threat of climate change. But we also saw that we needed a new approach. We took a hard look at the lessons of Kyoto and listened to what both sides of the aisle had been saying for years about what an

international climate agreement ought to look like. Targets should be set by countries themselves bottom-up, not imposed top-down. Developing countries need to act just as we do, recognizing that they face unique challenges. Strong transparency provisions are needed with the same basic terms for the U.S. and emerging markets like China. And that is exactly the deal we have been fighting for.

If we secure a deal with these features, it is because we took to heart bipartisan feedback on earlier attempts to forge international climate agreements. And that is also why the President and Secretary Kerry have worked hard on building international support for this new approach, working with leaders from China to Brazil to India; from African countries and small island states that are facing clear and present threats from a changing climate. To demonstrate that we are committed to act, together with others. We now live in a new reality where China has pledged to peak its emissions, to bring online an average of a gigawatt of clean energy every week through 2030, to implement a national cap-and-trade plan, and to provide \$3.1 billion in climate finance. And where nearly 150 countries have announced their own targets. We still have a considerable way to go to land a strong, viable climate agreement in Paris, but we are closer than we ever have been, and U.S. leadership has been at the heart of this progress.

Because the agreement we wanted was radically different from the one the U.N. process had produced in Kyoto, we knew that a fundamental reframing of the developed versus developing country paradigm would be needed. And we decided to go to the heart of that problem by engaging directly with China. For almost 20 years, the United States and China had been seen almost as captains of opposing teams in the negotiations. It was an unproductive situation that helped produce deadlock.

We started engaging with China on climate change in a concerted manner from the start of this administration, building relationships, working with them. Secretary Clinton highlighted climate change on her first trip there in February, 2009. We intensified this effort in 2013 with Secretary Kerry's visit in April of that year, establishing the U.S.-China Climate Change Working Group, and with President Obama's first meeting with President Xi, in Sunnylands. Then, last year, we sought to move our interaction to a whole new level. We found that their leadership was ready to work with us, genuinely concerned about the impacts of climate change as well as air pollution, and open to a cooperative approach based on mutual confidence that each side was serious about curbing emissions. This led, of course, to the historic Joint Announcement last year between President Obama and President Xi, in which the United States and China each set forth ambitious climate targets and marked the beginning of a new era of climate diplomacy.

We followed that up just a few weeks ago during President Xi's State Visit with a Joint Presidential Statement on Climate Change that laid out a common vision for the Paris Agreement, and also showed how serious both countries are about taking concrete action here and now.

These steps have given the global climate talks a jolt of momentum and have led Parties around the world to believe that these negotiations could and should succeed.

Most fundamentally, we have leveled the playing field by leading on a structure and process for the agreement in which more than 150 countries, including over 100 developing countries, have put forward their targets, known as INDCs ("intended nationally determined contributions"). This, by itself, is an extraordinary fact. It is testament to the buy-in of countries around the world, and a demonstration that the old fire-wall between developed and developing countries is coming down.

In particular:

We proposed the structure of nationally determined mitigation contributions, around which Parties have largely converged. Our rationale was simple: if all Parties are to be genuinely part of the new agreement, you cannot negotiate top-down targets as was done in Kyoto. To ensure maximum participation, we needed a structure that would allow countries to make their own choices about what target to adopt, reassuring them that they could join the agreement without disrupting their economic and development priorities.

We proposed that Parties submit their INDCs early rather than at the end in Paris, because we thought this exposure to scrutiny would push countries to do their best. And the result has been a momentum-building drumbeat of submissions.

We have pushed for the idea of successive rounds of targets, coupled with longer term goals for greater ambition.

We have pressed for an approach recognizing that developing countries continue to have unique challenges, but asks all countries to put forward actions to address this global challenge.

We are leading proponents of a robust transparency system of reporting and review for all, with a single set of guidelines, but flexibility in terms of the frequency

and content of reporting, for those developing countries that need it based on their capacity.

We have strongly backed the notion of nonlegally binding targets as the best way to ensure broad participation in the agreement. We concluded early on that many countries would be unwilling to put forward legally binding targets and, as noted, we are not willing to accept the Kyoto approach of binding targets for developed countries only. Also—contrary to much conventional wisdom—we think that non-binding targets will produce greater ambition because many countries would low-ball legally binding commitments out of fear for the consequences of missing their targets.

We have strongly supported the broad-based effort to elevate the importance of building resilience against the impacts of climate change, worldwide.

And we have advocated for a system of post-2020 support based on a shared effort among all countries to drive larger flows of climate friendly finance to those in need through the use of public and private finance, domestic resources, enhanced investment environments in recipient countries, and improved transparency regarding the provision, mobilization, and use of funds.

We are seeking an agreement, in brief, that is universal, ambitious, transparent, durable and effective; one that will elevate adaptation and resilience; be differentiated in a manner suitable for the 2020s and beyond; and promote shared efforts to generate increasing flows of climate-friendly capital from all sources to countries around the world that need it. It is exactly the kind of accord that voices from both sides of the aisle have said we need.

An agreement like this in Paris would not solve climate change by itself, but it would be an important step forward. Of course, a great deal of the effort to combat climate change will be driven by national governments, subnational actors, enterprising businesses, innovative scientists and engineers, and an enlightened global public demanding that its leaders take heed and take action. But we need a strong international agreement to supply the essential confidence countries need that, if they act, their partners and competitors will do so as well; and to send a clear signal to governments, civil society, and the private sector that the world's leaders have finally decided to take action and are not turning back.

A strong Paris Agreement of this kind is in the economic, diplomatic and national security interests of the United States and the American people.

It is in our economic interests because the costs of inaction, properly accounted for, will dwarf the costs of acting, and because no one is better positioned to win big in the multitrillion dollar 21st century market for low-carbon energy innovation than the United States.

It is in our diplomatic interest because climate change is a high and rising priority in countries and regions all over the world, and it is untenable for the United States to stand apart.

It would be in our national security interests because threats of rising sea levels, droughts, floods and other extreme events have become all too real, and will get worse. However, if we act now and act globally we can limit the extent and severity of the impacts. This is not a matter of ideology; it is a matter of sober risk management. Our military and intelligence leaders have been sounding the alarm now for years. In March 2013, Admiral Samuel Locklear, then Commander of the Pacific Command, said that upheaval related to climate change “is probably the most likely thing that is going to happen . . . that will cripple the security environment, probably more likely than the other scenarios we all often talk about.”

So the time has come to act. The stars are more aligned for an ambitious climate agreement this year than they ever have been. The deal is far from done, but we will strive during the next 7½ weeks to produce a strong outcome that will constitute a major step in combating climate change. I will be happy to take your questions.

Senator BARRASSO. Well, thank you so much for joining us today. Thank you so much for your succinct summary of your statement. And I would like to start with the questioning, and then we will go with, I think, 7-minute rounds. There is plenty of time for everyone to ask questions.

On August 26 of this past year, the “New York Times had a story entitled Obama Pursuing Climate Accord in Lieu of Treaty.” The article states, “the Obama administration is working to forge a sweeping international climate change agreement to compel nations to cut their planet-warming fossil fuel emissions but without

ratification from Congress.” It also talks about the administration working on a, “politically binding deal to cut emissions rather than a legally binding treaty that would require approval by two-thirds of the Senate.”

In addition, the French Foreign Minister Fabius recently indicated that to be successful in Paris, as he said, we must find a formula which is valuable for everybody and valuable for the United States without going to Congress.

Will any Paris agreement be legally binding on the United States?

Mr. STERN. Mr. Chairman, the negotiations are obviously still underway, and what elements of the Paris agreement will, or will not, be binding is not something that is worked out yet. There are, I would say, different views from many different parties. If you were to look at the draft text, which is being discussed now, you would see in provision after provision brackets that indicate the language which signifies legally binding and also language which signifies not legally binding. So the short answer is we do not know, although I will say, just as I said in my testimony, that a core part of our own approach is that the targets countries are undertaking should not be legally binding.

Senator BARRASSO. But some parts would be legally binding.

You know, I wonder if you think that it serves the interest of this country to establish a precedent that international commitments are made in a manner designed to torque the constitutionally derived oversight role of Congress, of the United States Senate.

Mr. STERN. Well, and I would not think that would serve the interest of the country, Mr. Chairman. We are going to look at the agreement, once we have an agreement, and we will evaluate at that time and we will act fully in accordance with law. As you know, there are different procedures by which the United States has historically and continues to join international agreements. So we will act fully in accordance with law. We do not know yet what the agreement is going to say.

Senator BARRASSO. So does the administration plan to submit any climate change agreement produced in Paris to the Senate for its advice and consent?

Mr. STERN. Mr. Chairman, we do not know yet what the elements of the agreement are going to be. So it is hard to speculate at this time. As I said, we are trying to—we are pushing hard for an agreement that does not include binding targets, which are kind of the heart of the agreement. So we are looking for something that is not binding in that regard.

Senator BARRASSO. So this is something that is not legally binding. If there are parts that are legally binding, would you submit that part?

Mr. STERN. Senator, it depends entirely on—it depends actually on a lot of factors of the content, and what provisions are and are not binding is one those issues. Existing U.S. law is another issue. Other authorities and relevant past practice are all issues. So we will evaluate this at such time as we have an agreement, and then we will act, as I say, according to law.

Senator BARRASSO. Because that gets into the issue of future administrations or Congresses will be bound by such a commitment.

I wonder if the President signs a unilateral political commitment or agreement in Paris at the end of the year without consulting Congress, what effect the agreement would have domestically and whether it actually holds up long term.

Mr. STERN. Well, I would say two things, Mr. Chairman. Certainly there is no question that Congress should be consulted. We have been up here briefing different members and staff all during this year and certainly will continue that before and after the Paris negotiations. So that goes without saying.

With respect to whether an agreement that is not legally binding has meaning, look, there is a long-standing practice in the United States to do all manner of agreements, sometimes quite sensitive, sometimes quite high profile via executive agreements or non-legally binding arrangements. And it is the practice of both sides of the aisle to respect what has happened and to abide by the political commitments that are made by previous administrations. That is true whether the previous administration was a Republican one being succeeded by a Democratic one or vice versa. So I think that that practice certainly should continue.

But whether you are talking about the Atlantic Charter or the Helsinki Accords or any number of nuclear arrangements, the notion of agreements being entered into in some form other than advice and consent is actually quite common.

Senator BARRASSO. When you talk about Congress being briefed, there is a difference between that and being consulted. I think both of us on both sides of the aisle would agree that over the years with different administrations, there is a huge difference between being briefed and being consulted.

You know, if the President signs onto this Paris agreement at the end of this year and then the courts rule that the Clean Power Plan is illegal, will the United States be able to reach the goal of its intended nationally determined contribution, or its INDC? So I am trying to figure out how we resolve an international commitment that is dependent upon the implementation of an unauthorized regulatory action like the Clean Power Plan, which a court may rule to be illegal.

Mr. STERN. Well, Mr. Chairman, we have a good deal of confidence that the Clean Power Plan is very solidly grounded in law and grounded, in the first instance, in Supreme Court law. We know that there will be legal challenges. There is never a significant EPA regulation where there are not significant challenges. And I am not going to speculate about what would happen in a situation that we do not contemplate.

Senator BARRASSO. My final question—and then I will turn to my colleagues.

You know, in November 2014, President Obama pledged \$3 billion for a brand new Green Climate Fund. It was a unilateral decision by the President without the buy-in or the support from Congress. International climate change funding may be the top priority for the President, but I will tell you it is not the top priority for the American public. And our Nation is facing a very tight budget environment. We need to focus current scarce resources on the increasing need for humanitarian assistance, democracy promotion, embassy security measures, countering global terrorist threats.

So will other countries back out of the negotiations without the administration paying these U.S. taxpayer dollars in the form of climate reparations?

Mr. STERN. Well, let me make a few comments about that. On the subject of climate reparations, I might just call your attention to the opening press conference in Kyoto—I mean, in Copenhagen in 2009 where I was asked whether the United States would be supportive of that in particular, and I answered very emphatically that we rejected the idea.

But let me get back to the broader question on the Green Climate Fund. First of all, I think that this honestly should not be a partisan issue. The Green Climate Fund is, in essence, a successor of the Clean Investment Funds that President Bush started in 2008. President Bush committed to \$2 billion over 3 years. We have put forward a pledge of \$3 billion over 4 years—7 years later. That is very consistent in quality and in quantity.

I think that President Bush saw this kind of assistance to developing countries to do real stuff. What the Climate Investment Funds have done has been to build clean energy infrastructure in developing countries. And I think that they concluded that it would be good politics, good diplomacy, and good economics, and we agree. The Green Climate Fund is a kind of successor to that. So I do not think that we are off on some odd toot doing this. I think this is a solid and responsible thing to do.

And I would also say that we do not see assistance to developing countries, with respect to climate change, as being any kind of an either or as between the investments that should be made in the United States and what should be done abroad. It is part of a long bipartisan tradition that foreign assistance is provided to help prevent instability and protect national security and expand market access. On the climate front, I think it does all of those things, as well as also shoring up food security and health and poverty reduction and the like. So I think all of these things are in the U.S.'s interests diplomatically and economically as well.

The last thing I would say is that the amount that the United States has put forward—you hear \$100 billion and you think a huge number. The amount that the United States has put forward both from appropriated funds and from funds that OPIC has provided over the last number of years has been in the range of about \$2.5 billion. And the overall \$100 billion comes from a whole lot of different sources, the World Bank, the multilateral development banks, development finance institutions all around the world, public, private, and so forth. And a recent report was issued by the OECD which indicated that we are so far at about \$62 billion based on 2014 numbers, and with additional pledges that were made by France, Germany, U.K., and some of the multilateral development banks indicated that we are probably on the way well into the 1980s already with the United States amount being what I told you. So I do not think this is a huge problem.

Senator BARRASSO. Thank you, Mr. Stern.

Senator Udall.

Senator UDALL. I would yield my time to Senator Boxer.

Senator BOXER. Thank you, Senator.

And, Mr. Chairman, here we are again. We now have two different venues where we can argue about climate change. [Laughter.]

Senator BOXER. And always very pleasant. We are friends. But here we go.

I continue to be perplexed by those who wish to obstruct action to reduce carbon pollution. Some are deniers, and we have been through this before. They say they are not scientists, and I would agree with that. They ought to be listening to the 97–98 percent of scientists who tell us human action and activities is causing too much carbon pollution. And some just do not seem to grasp the incredible advantages that we have in moving toward clean energy. And I am not going to go into it because we are not in the Environment and Public Works Committee. It is not about public health.

But it is so clear that when we do this, we also create a tremendous number of jobs that cannot be exported out of this country. You know, you would have to have very long arms to have someone in China putting on a solar rooftop. The fact is these are good paying jobs, and the proof is in the pudding in our State which is on path to cut its emissions—by the way, it is California—on a path to cut emissions 80 percent by 2050. During the first year and a half of California's cap and trade program, the State added—listen to this—491,000 jobs, a growth of 3.3 percent. And we have the 10th-cheapest electricity costs in the Nation.

So I mean, it is the right thing to do. America has always been a leader on every issue. And I agree with you, Mr. Stern, this is not an option because we need to lead on this. And to say let us wait until China leads, I am not waiting for China to lead on anything frankly. So I have much more faith in our systems here and our commitments here to the right thing.

I want to thank you for your work on this. I have had the opportunity to talk with you several times. I think that our resolve that is going on here has brought others to the table. Paris offers an important opportunity to reach global agreements. And you know, my own view is that the reason we have been able to make so many strides, even with the obstruction in the Congress—Congress is the only place that does not seem to want to do something, it seems—is because of the Clean Air Act, the Supreme Court upholding the fact that, yes, carbon emissions are covered, and the President of the United States who is taking jabs every single day and still understands this question.

So I want to talk to you about developing countries because it is always a problem. People say, oh, are developing countries doing anything? Are developing countries submitting the INDC's with firm commitments to reduce carbon pollution?

Mr. STERN. Senator, first of all, I just want to thank you for your consistent leadership on this issue this year and throughout the years. So I appreciate that very, very much.

Yes, developing countries are submitting INDCs to limit their and cut their greenhouse gas emissions. We have 152 total INDCs that have been submitted. I believe it is around 110 or 112 from developing countries, which is an extraordinary thing as compared to the history that we have come from.

Senator BOXER. Let me follow that up. I know that developing countries—Mexico and South Korea are considered developing countries, and I know that they have made significant pledges to reduce carbon pollution. Can you explain why these countries see it in their self-interest to reduce carbon pollution?

Mr. STERN. Sure. Senator, I think that it is for a few reasons. First of all, people all over the world see climate change as a serious threat. I mean, it is having impacts all over the world, whether it is in the form of droughts or floods or huge storms, stress on their water supplies, fires, just a whole panoply of issues, and countries see that. So that is one thing.

The second thing is the international negotiation actually is also a very useful tool to bring countries into a place of wanting to take action and of wanting to take ambitious action, maybe even more so than they would have thought at the beginning.

Senator BOXER. So you think they see the damage that can be done.

There is a movie out called—it is a really old movie—“Climate Refugees.” And it was a documentary that was done, and I saw it. I will tell you, Mr. Chairman, it is just stunning to see already some of the island nations that are essentially losing—people are losing their homes, losing the place of their birth and for generations.

Mr. Stern, some have criticized China’s 2030 carbon pollution pledge, claiming it means the country does not have to do anything for 15 years. Do you agree with that?

Mr. STERN. No, I emphatically do not agree with it. The targets that China agreed to with President Obama in the joint announcement last year are quite significant targets. First of all, they agreed to peak in 2030 or earlier, and they also agreed—a very important second piece of this is to get 20 percent of their energy mix from nonfossil sources. That is a pledge which is going to require them to build in the order of 900 gigawatts of renewable energy, nonfossil energy, between now and 2030. Compare that to the fact that the entire United States system is 1,100. So they have agreed to build 900 nonfossil. So they have got to start now. They cannot possibly—you cannot turn an ocean liner around on a dime. They have got to do big things. They have to start now, and they are going to do that.

Senator BOXER. Thank you, Mr. Chairman. And thank you, Senator Udall, for your generosity, and thank you, Mr. Stern.

Senator BARRASSO. Thank you, Senator Boxer.

Senator Markey.

Senator MARKEY. Thank you, Mr. Chairman, very much.

Mr. Stern, did the United States join the U.N. Framework Convention on Climate Change in 1992 after the Senate ratified that treaty?

Mr. STERN. Yes, Senator.

Senator MARKEY. Are you negotiating this agreement under that framework?

Mr. STERN. We are, Senator, explicitly so.

Senator MARKEY. So there is an existing treaty. You are negotiating under that treaty which is an authority which Congress gave to you. And I just think we should make that clear. You are not

in violation of any historical precedents. It is something that we want you to do, and it is something that the Congress passed. This Foreign Relations Committee had to pass it first.

Now, what I hear in the voices of those who object to this agreement is this, that we may not meet those goals. But, of course, that is a very pessimistic way of viewing what is unfolding here in the United States. We are going to pledge that we will reduce our greenhouse gases by 26 to 28 percent by the year 2025. We are on pace right now to reduce our greenhouse gases by 17 percent by the year 2020. So we are well on our way toward this goal of 26 to 28 percent.

Now, the hypothesis that the chairman is making is that you cannot rely upon Congress or you cannot rely upon America to uphold its commitment. So to the extent to which the President has propounded a new law, the Clean Power Plan rule, that will reduce greenhouse gases by 32 percent by the year 2030 in our utility sector, there is no question that the chairman and others in the Senate and the House—they can try to overturn that. But right now, it is the law of the United States, and the President is making a commitment based upon that law. It is on the books.

Secondly, the President propounded a new fuel economy standard for the vehicles which we drive which hits 54.5 miles per gallon by the year 2025. It is the law in the United States. Now, it is not going to stop members of this panel or the Senate from trying to overturn the law, but the President is making this commitment to the world based upon the law. We only installed 70 megawatts of solar in the United States in 2005. Last year, we installed 7,000 megawatts, not 70. And between 2015 and 2016, we are going to install 20,000 new megawatts of solar. The price is collapsing. The same thing is true for wind.

And so what we now have is 6 percent of all electricity coming from wind and solar in the United States. In 2005, it was 1 percent. We keep on this pathway and we keep the State renewable electricity standards on the books, we keep the tax breaks on the books as law, we will be at 15 to 20 percent renewable electricity by the year 2025 unless people work hard to repeal the law that the President is operating under.

So the chairman is right. There is always within a constitutional system an ability to overturn what is existing law, but there is nothing the President is doing which is not consistent with the law which we have, and if those laws stay on the books, this goal will be met.

So there are climate deniers. There are those that obviously do not want to see this goal met. That would be principally the fossil fuel industry. But under existing laws, the President is making a commitment which is completely and totally achievable and legal.

Now, I think it is interesting for us to then move to what is the assessment which the Chinese or the Indians have made with regard to this commitment made by the United States. So it is my understanding that 2 weeks ago, 3 weeks ago when the Chinese President was in town, that he committed to installing as much clean energy, renewable energy, by the year 2030 as all of the existing electricity capacity in the United States today combined. Now, that is a response. And then in return, the Indians then had

to respond to the United States and China, and they made a very huge commitment.

Can you talk about that and the impact which the United States is having as the leader in showing that you can do it in terms of the unleashing of new technology around the world, especially in those countries that historically people who were most concerned about that were not, in fact, meeting their obligations, countries like China and India and others?

Mr. STERN. Thank you very much, Senator. And again, thank you very much for your historic leadership on this issue. I have known you for a long time, and it has been tremendously impressive.

The U.S. role, what the President has been leading this administration on, has had tremendous impact I think with respect to other countries. And China—the agreement that you cited dates to the joint announcement from last year and then again reaffirmed and extended by the joint statement this year. Hugely important. In India, Prime Minister Modi has made a pledge to build 175 gigawatts of renewable energy. That is a gargantuan amount for India, and to do it by 2022. It is 100 from solar, 60 from wind, and 15 from other renewable sources. So a tremendous amount.

Senator MARKEY. To put it another way, that would be equal to the entire installed nuclear energy capacity in the United States today, and they are going to do that in renewables.

Mr. STERN. Right.

And I think that you see countries, whether it is Brazil or Mexico or others, also inspired by what the United States is doing. So I think it has had a very, very important impact.

Senator MARKEY. Thank you. And I just want to thank you. Your work is going to go down in history. Paris is, I think, on track to be a big success, and much of it is due to the incredible skill and leadership that you have brought to it. Thank you.

Senator BARRASSO. Senator Murphy.

Senator MURPHY. Thank you very much, Mr. Chairman.

You know, there are a lot of scary moments when you are a new parent, you know, the first trip to the ER, the first day of school. But for me, I ranked up there as one of the scariest moments as a young parent the day that I learned that the Waxman-Markey bill, which had passed the House of Representatives, was not going to be called up for a debate in the Senate, thus effectively ending for the time being Congress' participation in this exercise that, as I think Senator Boxer pointed out, everyone else in the world has been engaged in in the private and public sector. The idea that the body that I sat in was not going to do anything about the fact that by the end of the century at a moment when I hope that either or both my 3-year-old and 7-year-old are still going to be on this earth, the global temperatures are going to be 6 to 10 degrees higher. Sea levels will be 7 to 23 inches higher. There could be as many as million species which are on the planet today when they are 3 and 7 that will not be on the planet in their final days of life. That was a scary day.

But I guess I took some solace because the primary argument that I heard from opponents of the United States—Congress's unilateral action was that we should not move forward on something

that is as ambitious as Waxman-Markey in the absence of serious commitments from developing nations. It was in part an invitation for this vexing, catastrophic global problem to be solved at the Paris negotiating table. And now it seems as if opponents are back to the same old game doing everything they can to try to undermine these negotiations as well.

And so I am so grateful for your work and your team's work, and I think you have done an amazing job to set the platform for success. But I remain as scared as I was back in those fateful days of 2009 and 2010.

Mr. Stern, I wanted just to talk to you about what yardsticks we should use to measure the success of the talks. The President has been pretty open already that we probably are not going to be able to get enough commitments, binding or nonbinding, in order to hit that 2 degrees Celsius mark that has been our standard in many of our conversations over the last few years. What should we use as a measurement of whether these talks have been successful if it is not the 2 degrees Celsius number?

Mr. STERN. Thank you very much, Senator. Well, I would say two things.

First of all, as a broad structural comment, it will be enormously important for us to achieve an agreement that is ambitious and durable, transparent, that moves beyond the old firewall that we have been talking about between developed and developing countries, that elevates the importance of adaptation and resilience, which I think this agreement is going to do, and that in general advances us toward the global transition to low carbon and resilient economies.

With respect to the specific of 2 degrees, I would say this. I agree with what the President has said. We are not going to be all the way there yet. But two things to keep in mind.

First of all, according to one of the most reliable analysts of where we stand with respect to the temperature goals, the Climate Action Tracker, they came out recently with an analysis that says as compared to last year—you would sort of go back 1 year. Their assessment was we were on track for 3.5 or 3.6 degrees. Now on the basis of the INDCs, the targets that have been put forward now, their new number just this month is 2.7. 2.7 is not 2, but that is a powerful move in the right direction, more than halfway in the right direction. So that is step one.

The second point is we are looking at ambition essentially as a five-part package.

The first is the initial INDC's need to be as strong as possible. And I just referenced how the Climate Tracker looked at them.

Second, we have argued that the agreement has to include successive periods to update and strengthen and ratchet up ambition over time. We would like to see those every 5 years. That is still a matter of negotiation, but it is important that successive rounds be included.

Third, we have supported a proposal that calls on countries to put forward what we might call white papers, not commitments, but an outline, a strategy on how you would reach a deeper level of reductions by mid-century.

And then fourth, a long-term goal by the end of the century, the course of the century for deep decarbonization.

And then the fifth element is the nonstate actor arena, which the French have been quite correctly, and we also, pushing, that involves actions by states, by cities, by companies and also collaborative action among countries. All of those things are what the French are referring to as pillar four, but basically it is nonstate actor activity.

If you put all of those together, that is a package that is I think the best answer we can give for ambition, not as far as we want to get but a big, big step already, and then these other elements.

Senator MURPHY. Mr. Chairman, I really thank you for having this hearing today. I just want to make one final comment, which is to build on another by Senator Markey about the commitments in law that have already been made at the Federal level. I also note that there are a lot of commitments in law being made at the State and regional level as well that are serious and have enough history behind them to tell us what happens when you make a real commitment to reducing carbon.

Connecticut is part of the regional greenhouse gas trading program called RGGI. We have been in this for long enough to have some really good data as to what it means when you make a commitment to reduce carbon. It is pretty miraculous what has happened since we have entered into this regional agreement. We have cut carbon emissions from 133 million tons down to 86 million tons. Right? That is a 30 percent thereabouts reduction in carbon.

But here is the real story. Independent economic analysis shows that during that same time, because of that investment in clean energy, we added 1,400 new jobs to the region during that period of time and, maybe most impressively, reduced the costs of electricity and heating for consumers by \$460 million. Why? Because we took the vast majority of that money and put it right back into energy efficiency. So we helped individuals use less, find more cost-effective means of heating their homes and providing electricity. We got a triple whammy. We created jobs. We reduced costs and we reduced carbon. And this is not guess work any longer. I mean, it just is not theoretical. I mean, we are doing it in the Northeast. We have the practical results to show what happens when you make these commitments.

Thank you very much, Mr. Chairman. Thank you, Mr. Stern.

Senator BARRASSO. Thank you, Senator Murphy.

Senator Kaine.

Senator KAINE. Thank you, Mr. Chair, and thank you to Mr. Stern for your testimony.

My understanding is that there is an independent report out from the OECD about the compliance with goals set out in Copenhagen in 2009 and that the report indicates that the developed world is well on its way toward meeting those obligations. Do you read the report the same way?

Mr. STERN. Thanks very much, Senator. And, yes, I do. The specific focus of that OECD report is on the joint donor pledge to mobilize \$100 billion a year from all sources, public, private, carbon markets, et cetera by 2020, and the OECD report showed based on not even all the information yet, but based on most information

they have, that we are at about \$62 billion as of 2014. Probably a few billion more will be added when they get everything counted. And then on top of that, there have been some new pledges made by the U.K., France, Germany, the Asian Development Bank, the World Bank which, totaled all together, will probably add perhaps \$20 billion more on top of that over the course of the next few years.

So if you think about this as a 2020 pledge, we are probably at least in the mid-1980s based on where we can see things right now and maybe even more than that, and there are still 6 years to go. So that was actually quite encouraging.

Senator Kaine. That bodes well.

In addition to the climate finance goals of the developed nations, Copenhagen involved the United States making commitments as well. Talk about how the United States has achieved its own—on its own path toward the emissions goals that we embraced in Copenhagen.

Mr. Stern. Sure. Thank you, Senator.

Well, we are doing quite well. The President has put in place a whole raft of actions under the Climate Action Plan that he announced in 2013, and some of those actually predated that. The fuel economy standards Senator Markey referred to earlier were at the time referred to—I still recall from an environmental activist, often a critic of the administration actually—said that that action back then was the single biggest action taken to reduce greenhouse gas emissions that any country had ever taken. So that was in the first term.

And now, of course, you have got the Clean Power Plan. You have got heavy-duty vehicle standards. You have probably more than two dozen, somewhere between two and three dozen appliance standards that the Department of Energy has issued, all the building and the appliances and equipment that run buildings. We have a methane strategy, which includes mandatory methane actions to make some significant reductions of methane in the oil and gas and landfill sectors. We have taken a number of actions with respect to the industrial gases, HFC's, under EPA authority and are also trying to negotiate a broader amendment to phase down the use of HFC's globally. That comes under the Montreal Protocol, a different treaty.

So the President is acting across the board both in service of meeting that 17-percent target and also to set us up for being able to meet the 2025 target, both.

Senator Kaine. You have been involved in this process since 2009. My understanding is that there are about 150 pre-Paris climate pledges that have been made. How does that level of pledge before the meeting compare to kind of past meetings?

Mr. Stern. Well, it is extraordinary, Senator. And I should say that this is in part a result of structures that we proposed and got a great deal of support for. So the basic underpinning is that we proposed that the structure of this new agreement was going to have to be nationally determined commitments.

Senator Kaine. Top down?

Mr. Stern. You could not be top down. And we also proposed that countries put forward these commitments early, not at the

11th hour in Paris, but put them out there in the sunlight, have countries know that they were going to be scrutinized by other countries, by the press, by—

Senator Kaine. A little bit of competition.

Mr. Stern. Exactly so that the countries care about how they are going to look.

So the result of those proposals is that you have had this drum beat of submissions. There are now 152 so-called INDCs, intended nationally determined contributions, targets in brief, and there has never been anything like that before. You go back to Kyoto. There was no expectation, not only no expectation, developing countries flatly were not expected to do anything. And even if you go back to 2009 at Copenhagen a number of developing countries came forward but, A, after the fact in most cases and, B, it was about 40 or 45 developing countries at that time. We have about 110 developing countries right now and all of the developed countries.

Senator Kaine. The last question I want to ask you is about—you mentioned the Clean Power Plan. I support the President's plan. I have spent a lot of time digging into its effect on Virginia. The Virginia government and the Governor and others are strongly in support of it.

And the reason I like it—and I want you to analogize this to what we would hope to see coming out of Paris—is the Clean Power Plan. It is not one-size-fits-all. So States are kind of are treated differently depending upon where they start from, what their particular mix of fuel production is. So, first, the goals are not one-size-fits-all, which is important. And then second, how a State chooses to meet its goals are also flexible to enable local initiative and creativity in kind of deciding how to meet the goals. So to me, those two features of the Clean Power Plan are really salutary. Analogize that to what you hope to see come out of Paris.

Mr. Stern. Well, I think it is right on point really, Senator, because the whole idea of a nationally determined contribution, in the lingo of the negotiations, is that each country is going to have to decide based on its own circumstances, its own capabilities, hopefully with as much salutary pressure as possible to do your best, but each country is going to have to make the decision about exactly what to do and how to do it. By the way, that goes for developed countries, as well as developing, but even more important for developing countries who we were trying to reassure that they can take on the fight for climate change without imperiling their own priorities for development and growth and the eradication of poverty. So that flexibility is absolutely essential and is really, in some sense, the core of our approach.

Senator Kaine. Thank you.

Thank you, Mr. Chair.

Senator Barrasso. Thank you very much, Senator Kaine.

Senator Coons.

Senator Coons. Thank you, Mr. Chairman. Thank you for holding this hearing.

And thank you, Mr. Stern, for your testimony, for your leadership, for your hard work and your creativity in pursuing such an important global goal.

Let me just start where Senator Kaine was pursuing a conversation about some of the limitations of previous agreements and how this hoped-for agreement in Paris will succeed where others had some challenges.

As you just said, Kyoto really did not envision a comparable framework for developed and developing countries. And at the United Nations last month, the new Sustainable Development Goals were announced and adopted. SDG 13 calls for all nations to take urgent action to combat climate change and its impacts.

So talk to me about how we will incentivize developing countries to take ownership of sustainable development initiatives. I think the agreement with China and the trajectory we have going into Paris with China is very encouraging. But tell me how you think we will incentivize development and how that will make a difference in this round of climate negotiations.

Mr. STERN. Thank you, Senator.

Well, look, I think that there are a number of ways to think about this. One of the areas that we think are important in this regard has to do with the whole way in which financial assistance is provided. And what we have said is that there really needs to be, in essence, a partnership between all countries, that there needs to be a shared effort among countries so that, yes, many developing countries—not all, but many of them do need some assistance, but they also have to bring their own action to the table. So if you look at the kind of provisions that were in the financing for development negotiation that just finished in July, it talked about not just the importance of countries in getting some assistance but the importance for those countries to mobilize their own domestic resources, the importance for those countries to build the enabling and investment environments within their countries so that there is a pull for investment to come in.

We have seen this happen in any number of developing countries with extraordinarily positive impact. The most recent case I like to cite is Nicaragua which decided just a few years ago—I think it was around 2010 or so—that the power they were getting was too expensive, that they were going to make a move by putting in place some regulatory measures that would open the door, that they were going to make a move toward renewable energy. They have had an explosion of renewable energy in that country and well over \$1 billion of foreign investment come in to build it. And you can see that in Morocco, in Malaysia, in the Philippines.

We need to spread that message and we are trying to spread that message to developing countries so that, yes, you can get investment, but do not look at this all in the context of government grants. That is just a small piece of what should be the total. But let us take care of your own situation and let us have assistance where needed, technical assistance, to get the regulatory environment and such right, and then you can bring in much bigger amounts of money by attracting it. I mean, that is an important incentive.

Senator COONS. Let me follow up on that, if I might. We have been presented at times with a picture of a competing choice between sustained economic development and reducing the carbon

footprint. Can we curb carbon emissions without having a negative impact on economic growth?

In Africa, for example, where I have focused a lot of my work on this committee, can we provide access to electricity for millions more people without sacrificing our work to improve the trajectory of climate change?

And if you would, reference the summit that happened at the White House yesterday. I was excited to see that more than 80 companies operating in all 50 States, employing more than 9 million people, made pledges of their own to take their own steps to improve their sustainability, reduce their carbon footprint, or increase their investment in sustainable financing as part of the lead-up to negotiations. Does the private sector agree that we can both improve the trajectory of climate change and continue with economic growth?

Mr. STERN. Thank you, Senator.

Well, I think absolutely.

Let me make a quick comment with respect to your question about Africa. First of all, the answer has to be yes. You cannot expect countries to go backward with respect to their own economic development in the service of climate change, but the two things can go together. My office started a program, together with OPIC, a few years ago called the Africa Clean Energy Facility. And through that program, we provided just a small amount of money from my office to go with what OPIC can do, and there are now, I think, a few dozen projects underway. There was a problem of projects not being able to get going just for lack of a little bit of seed money at the beginning. So those are all projects designed to help provide power but in a clean way, and I think really about \$20 million from my office, joined with OPIC money of about \$400 million, we hope will get all the way up to about \$1 billion of investment.

I agree with you about the event yesterday at the White House. We have been working hard to communicate with, and bring in, corporate participation. And I think companies do see this. I think we have got 81 companies now who have signed up for this particular pledge, but a great, great, great many more in the United States and the around the world who see that climate change is real and you have got to act on it. I forget if it was Senator Udall or Boxer or Markey, but one of our colleagues referenced the pledge by 10 of the biggest oil companies in the world to support Paris and to support the goal of 2 degrees.

You know, people who are fact-based fundamentally—it is the military, it is the intelligence community, it is CEO's. If you are fact-based, you are going to see that action has got to get taken.

Senator COONS. Well, Mr. Stern, in my home State of Delaware, I have met with CEOs of businesses and have been struck by the steps they have already taken toward reducing their carbon footprint and improving the sustainability of their operations, and they have achieved bottom-line results that matter for their shareholders and their companies, in addition to providing a positive public benefit.

Finally, I am from the State with the lowest mean elevation in America. So other states are swampier, but ours is flatter. And be-

tween natural subsidence and sea level rise, we are seeing significant loss of coastal habitat. I think virtually every American coastal State is seeing the impact of climate change faster. But there are island nations which I think are even more at risk than we are.

Just in closing, if you would give a comment, big picture, why does it matter to States like mine that we make progress in Paris?

Mr. STERN. It matters enormously. I heard John Holdren, my friend and colleague at the White House, yesterday talking about what we could face if we do not do the right thing. And it could be many feet—many feet—of sea level rise by the end of this century.

Paris is important because there is action that is important at all different levels. You need action at the local, the State level, the national level. You need action in civil society and among governments, but it is enormously important for all of those areas and the private sector, of course, to get a signal that the leaders of the world get it, that the countries of the world are taking action together, that countries have the confidence that they can act because they see that their competitors and their partners are also doing it. I mean, as people say, we have for years said, well, how are we supposed to act if China and others are not. Well, that is part of what an international agreement is supposed to do, to give confidence to countries to act and to send a signal to everybody below the level of the international level that what they are doing is in the right direction and to spur and accelerate the action that would otherwise be taken.

Senator COONS. Thank you, Mr. Stern.

Senator BARRASSO. Thank you, Senator Coons.

Senator Udall.

Senator UDALL. Thank you, Chairman Barrasso.

One of the things I think, Mr. Stern, that I am really impressed with that you have done is gone and tried to learn from Kyoto. You have tried to take in account what Republicans and Democrats said as a result of Kyoto. One of the big concerns for many Republicans has been that there should not be an international agreement that imposes climate action on the United States beyond what the United States already plans, beyond what we have in law. Do you expect the Paris agreement will obligate the United States to meet an emissions target that goes beyond what the United States has already pledged?

Mr. STERN. No, I do not, Senator.

Senator UDALL. And another big ask from Republicans has been that enforcement should not be left up to the United Nations, that black helicopters should not pounce on the United States if commitments are not met. Do you expect the Paris agreement will include compliance penalties, sanctions, or other external enforcement on the United States? And I think the key word there is “other external enforcement on the United States.”

Mr. STERN. No, that is not part of the discussion. No.

Senator UDALL. And Republicans have long decried any international agreements on climate change that do not conclude meaningful action on climate change from developing countries. Do you envision the Paris agreement will include meaningful commitments from developing countries?

Mr. STERN. Absolutely.

Senator UDALL. And since I think you are at about—the estimate now is about 150 countries. So obviously there are many developing countries. In your opinion, is it a significant commitment that these developing countries are making in terms of trying to tackle this difficult, difficult issue?

Mr. STERN. Yes, Senator.

Senator UDALL. So my opinion is that you have been very responsive and tried to pull people together and looking at what happened the last time around and coming up with something that is very solid. And I thank you for that.

Now, I mentioned earlier about business support, and we are seeing an outpouring of support among business leaders from all sectors of the economy for a strong agreement.

And, Mr. Chairman, I would like to put in the record here—this is an “In Support of Paris Agreement” letter from major companies, with your permission, Mr. Chairman, and consent.

Senator BARRASSO. Without objection, yes.

[EDITOR’S NOTE.—The Paris agreement letter mentioned above can be found in the “Additional Material Submitted for the Record” section at the end of this hearing.]

Senator UDALL. They say, “A new climate agreement in Paris can help strengthen the role of, and minimize risks to, the private sector in a number of ways. And this is just one little part here. “Providing Long-Term Direction.” I think that is absolutely crucial. “An aim of progressively decarbonizing the global economy can provide a clearer signal to markets to shift long-term investments toward energy efficiency and other lower carbon alternatives.”

Now, this letter, Mr. Stern, signed by companies we all know—these are major companies, Alcoa, BHP Billiton, which is a company that has been in New Mexico, BP itself, Intel, PG&E, Rio Tinto, Shell, Siemens Corporation. So these are major corporations that have stepped forward and said this would be very helpful.

Now, recently CEO’s of the top U.S.-branded food companies like General Mills, Kellogg, Nestle, and others called on political leaders to take decisive actions toward—and this is their quote—“clear, achievable, measurable, and enforceable science-based targets for carbon emission reductions.”

And major companies are calling for action from some of our political leaders to continue the strong climate action and that strong climate action is a threat to economic well-being.

Have you been engaging directly with business leaders in this process? Why did these companies say that we need a robust agreement in Paris, and why do they think they will continue to thrive as all the world’s countries take action?

Mr. STERN. Yes, Senator, I have been engaging with business, and the White House has been particularly active in this regard as well, I should say, as has Secretary Kerry.

Look, I think, again, business leaders live in a fact-based world. It is not a matter of ideology. They can look at what is happening. You can look at both the theory and the evidence of what is happening with respect to climate change. And I think that it is useful, in the eyes of many, to start to put together a regime that is pre-

dictable and understandable and points, as you said, in the direction in a long-term way to give guidance to the sorts of things that they need to do.

I think, again, business likes facts and businesses like predictability. So obviously, this is not universal. There are some businesses who do not agree, but more and more you see this kind of thing that businesses support action. They can see that we are in big trouble if we do not act, and it is better to act now.

My understanding, from numbers that I have seen recently, is for every decade we wait, the cost of taking action goes up by about 40 percent. So it is better to get going.

Senator UDALL. Those estimates you are talking about are in the billions and trillions when you are talking about estimates going up. Right?

Mr. STERN. Yes, yes.

Senator UDALL. Thank you, Mr. Chairman. I appreciate it.

Senator BARRASSO. Thank you very much, Senator Udall.

Mr. Stern, during a Senate Environment and Public Works hearing on July 8, experts testified that even under the best of circumstances, it was unclear how the President could make good on his pledge to reduce greenhouse gas emissions up to 26 to 28 percent by 2025.

So where did this 26 to 28 percent greenhouse gas emission reductions come from, and can the United States meet the administration's pledge under the current law?

Mr. STERN. Thank you, Mr. Chairman.

The number came from analysis of the various authorities that we have, authorities that are based on the Clean Air Act, the Energy Policy Act, the Energy Independence and Security Act, existing authorities that had already been provided by the Congress. There was an analysis of completed actions such as the fuel economy standards for light- and heavy-duty vehicles, the appliance standards that I referred to earlier, building codes, and the like. There was an analysis of pending rulemakings at the time like the Clean Power Plan, further heavy-duty vehicle standards and appliance standards, new action being taken on methane and HFC's and so forth, as well as the Federal Government's own Executive order to reduce greenhouse gases 40 percent below 2005 levels by 2020.

There are still additional elements of the package that include actions by the U.S. Forest Service and others to improve essentially what is called the carbon sink provided by forests and grasslands. There is a whole set of voluntary actions that are being led by the Department of Agriculture essentially providing various kinds of incentives to farmers, which Secretary Vilsack thinks will produce a reduction of about 2 percent by 2025.

And there are also State policies that are part of the equation, and market trends, things like the abundance of low-cost natural gas which can substitute and has substituted for coal in many cases, the decline of renewable energy costs at a much more rapid rate than people had anticipated, the possibility and indeed the reality increasingly of innovations in areas like electric vehicles and advanced manufacturing.

So looking at all of the totality of CO₂-reducing activities underway, we determined that 26 to 28 percent was a number that made

sense and that we could meet on the basis of existing authority. And I would point you, by the way, to an analysis that was done by one of the most respected environmental think tanks, the World Resources Institute, which has concluded the same thing, that that target is something that can be met on the basis of existing authority.

Senator BARRASSO. You know, it is interesting. The U.S. Chamber of Commerce—they did an analysis, and they found about a 33-percent gap in getting to this reduction. So these are numbers that obviously are going to be discussed.

I want to get into the China and India concentration and the contributions of China and India. The International Energy Agency information suggests that China's pledge amounts to a little more than business as usual. Before the joint announcement, they expected China's emissions to peak around 2030. The IEA data showed that China's emissions intensity fell by 60 percent between 1990 and 2005. Therefore, a pledge to reduce intensity 60 percent to 65 percent between 2005 and 2030 is just a continuation of the existing trend. So not only does China get to continue business as usual and increase their emissions, the same as the situation in India. "The Economist" said that the concessions made by the United States are more costly and more real than those of China.

A recent "Economist" article stated that India's Prime Minister, "has set a target of expanding GDP by 8 percent a year." If it comes close to meeting that target, emissions will soar just as China's has done. The article went on to say with economic growth at 8 to 9 percent, India's total emissions of carbon dioxide would triple—triple—by 2030 from 1.7 billion tons in 2010 to 5.3 billion tons. India is on its way to becoming the biggest contributor to increases in greenhouse gases within 15 years. India's intended nationally determined contribution did not set a peak date for emissions. They are going to continue to go up.

So considering China's and India's intended nationally determined contributions, will their greenhouse gas emissions be higher or lower than they are today?

Mr. STERN. Thank you, Mr. Chairman. So let me take China and India one at a time.

Senator BARRASSO. Because it gets to the issue of will this slowing the growth of global temperatures going to be achieved at all if all of these major emitters are given a waiver allowing them to continue to have higher emissions 15 years from now than they have today—

Mr. STERN. Right.

Senator BARRASSO [continuing]. In spite of what the United States may or may not do.

Mr. STERN. Right. We do not actually agree with that characterization at all, that there is any sort of waiver. I mean, what we see from China is the first-ever agreement to peak its emissions, which is a crucial step on the way to getting them to go down. We see that 20-percent promise to get 20 percent of their energy from non-fossil sources to be, again, as Senator Markey has said as well, an enormous pledge. They are going to need to build 900 gigawatts of nonfossil energy between now and 2030. That compares to the total electricity use of the United States and is more than all the coal

used in China today. So that is a huge, huge undertaking, and it will constrain what China is able to do in terms of their emissions.

They have also agreed to a 60-to-65 percent improvement in the carbon intensity of their economy by 2030.

So I think that what you will see with respect to the China INDC is that it is quite solid. The Climate Tracker that I referenced earlier assesses China to be a quite solid INDC.

I think the strongest part of the Indian pledge is to get 40 percent of their energy from nonfossil sources—40 percent of their electric power from nonfossil sources by 2030. And part of that is their pledge to build 175 gigawatts of renewable energy, which for an economy the size of India, is a vast undertaking.

Look, I am not here to defend every element of every country's INDC. Some are stronger than others. I think that the 40 percent nonfossil pledge for India is stronger than India's carbon intensity pledge, for example, but that is a quite significant undertaking that India has proposed.

Senator BARRASSO. But you agree the total numbers are going up. The amount of emissions, in spite of what percentage is coming from the renewables—the numbers are still going to go up over the next 15 years in spite of the fact that the United States have been coming down over the last 12 years.

Mr. STERN. Well, Senator, if I may. The numbers are going down as compared to what the numbers would otherwise be doing. I mean, if you are—no, but if—

Senator BARRASSO. The numbers are going up. You cannot ignore the fact that they are still going to go up in spite of the fact that the United States are going down.

Mr. STERN. I understand that and I respect that, Mr. Chairman. But it is also true that if you are an economy which is growing at 8 or 9 percent a year, because that is the stage of development you are in, it is pretty hard to say you are supposed to slam on the brakes and go negative overnight.

Senator BARRASSO. Well, obviously, there are people in the United States who want our economy to come back and move up as well.

You know, the hearing was originally supposed to be a joint hearing with the Senate Environment and Public Works Committee. It was supposed to be a hearing where all the experts who have worked on the President's Clean Power Plan and the targets and the climate negotiations would all be in one place to answer our questions. I am grateful that you are here today. The full committee minority blocked that from happening.

So it is interesting. When we asked the EPA to testify, they insisted that they had no witnesses who could actually speak about these issues, which is astonishing given what the EPA does and the claims and listening to other members from the EPA. And I know you are from the State Department. So I appreciate you being here.

They stated on October 13—so this is just 1 week ago. The EPA sent a letter to the Environment and Public Works Committee chairman, and the letter says I respectfully continue to assert that the agency does not have a witness—it does not have a witness—who can speak to the issues that are topics of this hearing. It does

not have a witness that can speak to the topics. This is despite the role the EPA has played in developing the bulwark of regulations that will meet any potential targets, despite the fact that the EPA Administrator has played a role as part of the U.S. delegation to International Climate Change conferences in the past, including Lisa Jackson attending and delivering remarks at the U.N. Copenhagen Climate Change Conference in 2009. Gina McCarthy and the EPA have no idea about any of the topics of this hearing. Yet, I anticipate that Gina McCarthy, Ms. McCarthy, the head of the EPA, will be attending receptions in Paris with international bureaucrats and statements touting her regulations to anyone who will listen.

So I am grateful that you are here today. I think it is absurd that the head of the EPA would say, oh, no, there is nothing that we can add to this.

So do you know of any plans that the EPA has in joining with you as part of the official U.S. delegation to the Paris Climate Change Conference? Because apparently they do not have anything to do with it or even know anything about it.

Mr. STERN. Mr. Chairman, I am not aware at the moment of who from EPA is coming. There is always an interagency group that goes to these COP meetings.

Senator BARRASSO. So you admit that the EPA will be represented there in spite of their inability to comment on this or attend a hearing like that. You just said you were not sure who from the EPA—

Mr. STERN. Mr. Chairman, I cannot comment on today's hearing because I am not—

Senator BARRASSO. I appreciate you being here, but I will tell you there are obvious issues of the EPA and their failure to be here.

You know, it is interesting. I did hear some of my colleagues on the other side refer to reducing pollution. And I have another quote, this from Gina McCarthy, the head of the EPA. Now, she testified before the Senate Environment and Public Works Committee in July of 2014 at a time when the Democrats actually chaired the committee and were in the majority in the Senate. And she stated with regard to her existing power plant rule, which makes up a major part of the President's carbon reduction pledge—she said, quote, "this is not about pollution control." But I heard my colleagues here talking about this is about pollution. This is Gina McCarthy. "This is not about pollution control. It is about increased efficiency at our plants. So let us be clear with regard to the President's carbon reduction pledge. This is not about reducing pollution. According to the EPA, it is something else."

Thank you, Mr. Stern.

Senator Udall.

Senator UDALL. Thank you, Mr. Chairman.

I think the first thing—and Senator Markey will also be able to speak to this because he is on the committee, the Environment and Public Works Committee, which has jurisdiction over the EPA.

This has been discussed with the chairman of the committee, Chairman Corker, and our ranking member, Ben Cardin. And it was agreed that this would be the format. And I really believe we

have the best witness here to deal with what is going to happen in Paris because Mr. Stern started right at the very beginning of the Obama administration. He has been on top of everything. He has been to all the negotiations. I mean, there could not be anybody that is more on top of what is happening on Paris.

In my understanding, the Environment and Public Works Committee has done extensive hearings on the Clean Power Plan and things like that.

And, yes, you said, Mr. Chairman, you are happy to have him here today also because I think he is the one that has the real facts on what is going on here.

Mr. Stern, your testimony references the fact that these nationally determined structures, you know, these INDC's of the Paris climate pledges actually led to countries submitting stronger climate pledges. Can you tell us more about the benefits of this approach that you are engaging in?

Mr. STERN. Look, Senator, I think a couple of things. I think the fact that we proposed nationally determined contributions as a structure allowed countries to get into a mode of trying to come forth, figure out what they could do, not simply being in a mode of opposition and fear about how they were going to be able to manage—so I think that has been important.

I think that when countries see others acting—the most important thing that happened to kind of kick this process off, if you will, was the joint announcement between President Obama and President Xi last November. And there countries could see that here you had the two big, classic antagonists, the countries that had been seen, if you will, as the leaders of the two opposite opposing camps in these negotiations coming together and saying this is what we are going to do and making significant pledges, both of them. I think that had a big impact on countries.

The United States has worked directly with some countries to provide technical assistance and advice on how to put forward stronger and stronger contributions, and I am sure that has been going on with our colleagues in Europe working with other countries as well.

So I think it is something that has fed on itself in a very kind of positive way, and I think, again, the sight, the tableau, which was quite stunning to people to see the United States and China at the Presidential level standing up and making these commitments last year really got this off on a good footing.

Senator UDALL. Thank you for that answer.

And, Mr. Stern, you have overseen this process since 2009. Could you contrast the current scale of the pre-COP pledges to previous meetings? In particular, how does the number and scale of pre-Paris climate change pledges—my understanding, 150 so far—compare with the level of effort in past agreements, so looking past and present?

Mr. STERN. Right. Well, if you look back at Copenhagen, there really were not any pledges that were made before Copenhagen because we had not set forth and secured agreement for this kind of structure then. You did have a number of countries but a quite small number of countries who had essentially put out press releases saying this is what we are planning to do, but I think you

could have counted those on one hand. That was not a large number of countries who did that. So it is a completely different ballgame now.

And it started with the Durban mandate for this negotiation, which we were instrumental in developing at the end of 2011 where the whole theory of the agreement was that it was going to be applicable to all. In other words, it was going to be the not-Kyoto. It was not going to be just applicable to developed countries. It was going to be everybody. That was the starting point, and then, as I say, we have worked through these different structural features along the way of nationally determined and so forth. I think that has been very important, and I think the impact of the China announcement was also quite significant.

Senator UDALL. Thank you.

The 1997 Byrd-Hagel resolution asserted that the United States should not join an international climate agreement that, A, only imposes obligations on developed countries and, B, would result in serious harm to the economy of the United States. How would you square the current dialogue with those requirements?

Mr. STERN. Well, I think we have met the Byrd-Hagel requirements, frankly. People have referenced how we have learned the lessons from Kyoto. It helps when you are actually there because I was in Kyoto. I did learn those lessons. But I remember the famous add of a scissors and taking a map of the world and cutting out all of the developing countries. This was in 1997 with regard to Kyoto, cutting out all the developing countries because they were not going to have any obligations. And that was exactly what that first element of the Byrd-Hagel resolution was talking about. So we have just exactly the opposite now. We have 152 INDCs, 110, plus developing countries. So it is a completely different ballgame, including all the big ones.

With respect to the economy, two things. The fact that this is nationally determined means that something is not getting imposed on us or anybody else. So it is not the case that we should be in a posture and we are not in a posture where what we are talking about would hurt the U.S. economy.

And then there has also been all sorts of detailed, voluminous analysis done with respect to the core elements of our target, the Clean Power Plan being the most recent one, and the analysis that EPA did shows significant cost to be sure but netted out against the benefits, I think EPA's estimate was somewhere in the \$26 billion to \$45 billion of net benefits to be expected. So this is not going to hurt our economy, and it is going to include all other countries.

Senator UDALL. Thank you.

Senator BARRASSO. Thank you, Senator Udall.

Senator Markey.

Senator MARKEY. Thank you, Mr. Chairman, very much.

So I think it is important for us to make clear that we have begun to break this link between increase in gross domestic product and a reduction in greenhouse gases. So in Massachusetts, we have reduced our greenhouse gases by 40 percent since 1990, and our gross domestic product has gone up by 70 percent. So it was not inconsistent. Our unemployment right now is 4.5 percent. In fact, one of the things that has happened in Massachusetts is that

having set ourselves out on this course, we now have 100,000 people in Massachusetts employed in the clean energy sector. It is now one of the top 10 employers in the State. So this disconnect between increasing gross domestic product and reduction in greenhouse gases is accelerating in Massachusetts, and it is happening across the planet as well.

In 2014, for the first time ever, the world experienced global economic growth without a global carbon pollution increase according to the International Energy Agency. So business will be critical to extending and building on that achievement.

So what is the signal that you want to send to businesses across the planet coming out of Paris, Mr. Stern?

Mr. STERN. Well, your point, Senator, is exactly right. That is the iron link that had to be broken and it is starting to be broken. You have to have economic growth up and emissions down. I mean, that is the name of the game.

And I think the signal is, again, we are moving long term in a direction to grapple with and successfully tackle climate change. And it is a start. It is not a finish, but if you have all countries of the world on board to do this, the leaders of the countries of the world committing to do that, then again you send a signal that this is the long-term trajectory and businesses should get essentially on the right side of history, not just to be on the right side of history, but to be on the right side of their balance sheet.

Senator MARKEY. So going back to 2009 when the Waxman-Markey bill was passed through the House of Representatives, it died over here in the Senate. But for a while there people thought my first name was "Waxman," as part of the Waxman-Markey bill. [Laughter.]

Senator MARKEY. But it was going to reduce greenhouse gases by 80 percent by 2050 and 17 percent by 2020. So those were the goals. And it was a radical group of people who signed onto it, I mean, a completely radical group. General Electric, General Motors, Chrysler, Ford, the Edison Electric Institute endorsed the bill. The Nuclear Energy Institute endorsed the bill. Company after company all across the country endorsed the bill. When you have the big three auto manufacturers and the Edison Electric Institute endorsing a bill to reduce greenhouse gases by 80 percent by 2050, you are no longer in the radical extreme. It is those who oppose it who are in the radical extreme.

You have the world's scientists all saying that there is a great danger. And John Holdren is now saying that there is a destabilization in the west Antarctic ice covering that if it went into the ocean would raise sea levels by 5 feet, that there is an increase in destabilization on the Greenland icecap, and that is 1,000 miles long and 300 miles wide and pretty much two Empire State Buildings high. That would add another 7 feet to the sea levels of our planet.

So the radicals are those who say do not worry. But you cannot get a more conservative group than Intel and DuPont and Dow and General Electric and General Motors, the Edison Electric Institute, Pepsi-Cola. That was 2009. The number of companies that have signed on has now doubled since then because the science is even more clear. And they know that they have a fiduciary responsibility

to their shareholders. They think they can make money and reduce greenhouse gases simultaneously.

Now, can you tell us a little bit about European businessmen or Chinese businessmen? Is that your experience now that that has been embraced across the business community as an ethic that they believe that they can achieve simultaneously?

Mr. STERN. I think that that is right, Senator. We have this group of 81 companies that have signed onto the pledge that we put forth. The French are also putting forth a pledge for countries internationally to sign on. I do not know what the numbers are yet, if they have totals that they have calculated yet. But I think you are going to see a broadened business support all over the world for the same kinds of things that you are seeing here.

Senator MARKEY. Can I just add this as well? This is triggering a big technological revolution. In 1993 in the United States, if you had a cell phone, it was the size of a brick. It cost 50 cents a minute. And Gordon Gekko had one in "Wall Street." That was it.

But in 1993, I was the chairman of telecommunications. I moved over 200 megahertz of spectrum for the third, fourth, fifth, and sixth cell phone license. By the year 1996, everyone had this flip phone in their pocket. It was under 10 cents a minute. You did not have one in 1993, but you had one in 1996.

And then a really smart guy came up with the smart phone about 7 or 8 years later because we had begun the innovation, a computer in a pocket. But first you had to begin this revolution.

And that is where we are now in the energy sector. When you go from 70 megawatts of solar in 2005 to 7,000 megawatts being installed in the United States in 2014, 20,000 megawatts in 2015 and 2016 combined, another 20,000 megawatts of wind being installed in 2015 and 2016, the revolution just accelerates.

And by the way, when we developed the technologies, you wind up with 600 million people in Africa today with these devices in their pockets. They did not have any of them 10 years ago. We innovated. We led. We showed that we could put in place the business incentives to move this technology in a way that could solve a problem, and we are going to wind up with villages in Africa that have solar panels on their roofs so that they can plug in their wireless smart phones and that will have been a "made in the USA" as our promise to the rest of the world that we would be the leader.

And of all of us, you are the leader in this negotiation, Mr. Stern, and we thank you so much.

Senator BARRASSO. Mr. Stern, we appreciate you being here today.

I just want to point out that it was the ranking member of the full committee who blocked the effort to hold the joint hearing despite a long-standing precedent of joint hearings with EPW and the Senate Foreign Relations Committee. I think it would have been productive and nice to have all of the players joining the discussion, as has been done in the past, and I have a list of times when we were able to do that.

I did have one final question and it has to do with references to a treaty. During Senate deliberations on the U.N. Framework Convention on Climate Change in 1992—because we talked about previous activities—George Herbert Walker Bush in his administra-

tion—officials testified that in the view of the administration, the degree of congressional involvement in U.S. adoption of any future protocols to the U.N. Framework Convention on Climate Change would depend on the nature of those agreements, and that the administration also declared that any future agreement containing specific greenhouse gas emission targets likely would need to take the form of a treaty and be submitted to the Senate for advice and consent to ratification. And I can get you everything that was stated.

So looking at that, does the administration intend to respect the commitment made by the executive branch in 1992—I know a different administration—to submit any future protocols negotiated under this U.N. Framework Convention on Climate Change that contains emission targets and timetables to the Senate for advice and consent?

Mr. STERN. Thank you, Mr. Chairman.

We have looked at that very carefully. And the notion of targets and timetables, as that term was used in 1992—that was understood by everybody on both sides of the aisle, by everybody in the international community as being legally binding targets and timetables. That was the nature of what that phrase meant, and that was not included for precisely that reason in the Framework Convention. So if we were to go forward with legally binding targets and timetables, I think that the answer would be yes, we would agree with you. If what we do is nonlegally binding targets, I think we read that differently because we do not believe, based on a good deal of study and consultation with people who were part of those negotiations, that what was meant was legally binding target and timetables.

Senator BARRASSO. Thank you.

The hearing is concluded. I appreciate you, Mr. Stern, being here, making the time to answer our questions.

I am going to leave the record open until the close of business Friday, October 23, for any members of the committee to submit additional written questions or comments for the record.

I appreciate you being here.

The hearing is adjourned.

[Whereupon, at 4:33 p.m., the hearing was adjourned.]

ADDITIONAL MATERIAL SUBMITTED FOR THE RECORD

WRITTEN STATEMENT OF SENATOR JAMES M. INHOFE, CHAIRMAN, U.S. SENATE ENVIRONMENT AND PUBLIC WORKS COMMITTEE

EPA Administrator McCarthy said it best at a Council on Foreign Relations group earlier this year, "Where environment is concerned it's hard to know where domestic policy ends and where foreign policy begins." This certainly sums up the collective role of the State Department, the Environmental Protection Agency and the Council on Environmental Quality, among other administrative agencies, in contributing to the President's international climate efforts and the need for Congress to hear from all key administrative officials.

The Environment and Public Works Committee held an initial hearing related to the ongoing international climate negotiations in July focusing on the President's international climate pledge, more formally referred to as his intended nationally determined contribution (INDC). The President's INDC would commit the U.S. to reduce greenhouse gas emissions by 26 to 28 percent compared to the 2005 level by 2025, which is based primarily on regulatory actions taken under the Clean Air

Act. The July hearing provided valuable perspective from a diverse group of experts, including former Sierra Club General Counsel during the *Massachusetts v. EPA Supreme Court* case and argued that the Clean Air Act allowed EPA to regulate carbon dioxide summed up the panels overarching agreement that even under the best of circumstances, the President's INDC simply does not add up: "This is arithmetic, it is nothing but arithmetic. . . . All I did was take a look at each of those measures, take the maximum amount of emissions reductions from each of those measures as described either by EPA or by the Department of Energy or to the best of my ability . . ." which "get[s] us between 68, 70, 75 percent of what we need."

Former head of EPA Office of Air and Radiation, Jeff Holmstead reiterated, "I don't see how you get to 26 to 28 percent. And I can tell you we can't get there by 2025."

Such a conclusion, certainly leads to more questions than answers. Despite the often heralded claim by the administration that the INDC is meant to "facilitate the clarity, transparency, and understanding" of its commitments, the administration has yet to provide basic information, including how the 26 to 28 percent reduction would actually be achieved.

I along with 10 of my colleagues sent a letter to the President in early July laying out many of these questions. We have yet to receive a response.

One of the few details the INDC does include is EPA and CEQ's expected roles. In fact, the majority of the regulatory actions the President relies on to meet the 26 to 28 percent reduction goal is the sole responsibility of the EPA, including the so-called Clean Power Plan. Executive Order 13693 directly assigns coordination responsibility to CEQ to further reduce the federal government's greenhouse gas footprint. I find it very hard to believe that agency officials who are charged with implementing key components of the INDC that forms the platform by which the State Department is negotiating to not be involved.

I would have preferred the joint subcommittee hearing that was agreed to over a month ago. There is a long-standing practice between the Foreign Relations Committee (SFRC) and the Environment and Public Works Committee (EPW) performing oversight of international, environmental agreements. One example includes a joint full committee hearing between SFRC and EPW on July 24, 2002, with administrative witnesses on the implementation of environmental treaties.

While we can certainly disagree on the underlying policies, I believe we, as the Senate, should support basic oversight responsibilities, especially when they are consistent with past practice. President Obama and his administrative officials are going out of their way to circumvent the role of the U.S. Senate in this negotiating process and I am disappointed that the minority would enable such behavior.

A closed-door policy is unacceptable when the President is attempting to bind this country to long-term commitments that come with broad-reaching economic burdens. I will continue to seek answers from key agency officials and will reconvene a full EPW committee hearing examining the international climate negotiations and the role of domestic environmental policies in the coming weeks.

IN SUPPORT OF A PARIS CLIMATE AGREEMENT

This statement was developed by the Center for Climate and Energy Solutions (C2ES) and is supported by the major companies listed below.

The U.N. Climate Change conference in Paris presents a critical opportunity to strengthen efforts globally addressing the causes and consequences of climate change, and to demonstrate action by businesses and other non-state actors.

We recognize the rising environmental, social, economic, and security risks posed by climate change, and that delaying action will result in greater risks and costs. An effective response to climate change requires strong government leadership, and presents both enormous challenges and significant economic opportunities for the private sector. As businesses concerned about the well-being of our investors, our customers, our communities and our planet, we are committed to working on our own and in partnership with governments to mobilize the technology, investment and innovation needed to transition to a sustainable low-carbon economy.

We support the aim of a more balanced and durable multilateral framework guiding and strengthening national efforts to address climate change. We believe the Paris agreement should commit all parties to undertake nationally determined efforts to reduce greenhouse gas emissions; provide strong transparency to hold countries accountable; require periodic renewal of national contributions to progressively strengthen the global effort; and facilitate international carbon markets. The agreement should, at a minimum, include all of the world's major economies.

A new climate agreement in Paris can help strengthen the role of, and minimize risks to, the private sector in a number of ways:

- **Providing Long-Term Direction** – An aim of progressively decarbonizing the global economy can provide a clearer signal to markets to shift long-term investments toward energy efficiency and other lower-carbon alternatives.
- **Promoting Transparency** – Requiring countries to be transparent about their policy intentions and implementation can provide greater clarity on domestic policy landscapes, better enabling companies to anticipate regulatory risks and economic opportunities.
- **Addressing Competitiveness** – Agreement by all major economies to contribute their fair share, and to simultaneously and regularly renew their contributions, can lead over time towards a greater comparability of effort, helping to ease concerns about potential carbon leakage and competitive imbalances.
- **Facilitating Carbon Pricing** – Requiring countries choosing to employ international carbon trading to ensure the environmental integrity of these transactions can help facilitate the growth and credibility of the global carbon market, a critical tool for cost-effective emissions reduction.

We stand ready to work with governments and our civil society partners to deliver and implement a sensible and effective global climate agreement in Paris.

**ALCOA • ALSTOM • BHP BILLITON • BP • CALPINE • HP • INTEL • LAFARGEHOLCIM
NATIONAL GRID • PG&E • RIO TINTO • SCHNEIDER ELECTRIC • SHELL • SIEMENS CORPORATION**



RESPONSES OF TODD STERN TO QUESTIONS SUBMITTED BY SENATOR RAND PAUL

Question. During your testimony you said, “the costs of inaction dwarfs the costs of action”. If you are so certain in the quantification of a cost-benefit analysis, can you please provide a detailed review of the total direct and indirect costs to the U.S. Government, U.S. businesses, and the American citizens of the current and proposed commitments of President Obama?

Answer. While I cannot speak to the breadth and scope of rulemakings across agencies, all of the actions taken by the administration undergo a rigorous regulatory review, including analysis that ensures each action yields strong net benefits.

For instance, the EPA's proposed Clean Power Plan delivers net benefits of \$26–45 billion in 2030, including \$14–34 billion per year from improved public health.

More specifically, by 2030, emissions of sulfur dioxide from power plants will be 90 percent lower compared to 2005 levels, and emissions of nitrogen oxides will be 72 percent lower.

Because these pollutants can create dangerous soot and smog, the historically low levels mean we will avoid thousands of premature deaths and have thousands fewer asthma attacks and hospitalizations in 2030 and every year beyond.

Similarly, measures like appliance efficiency standards and building codes create jobs while saving consumers and businesses billions of dollars every year on their utility bills. And fuel economy standards cut oil dependency and carbon pollution while saving consumers billions at the pump.

Question. When the Senate approved the U.N. Climate Change Framework in 1992, it was under the understanding from the executive branch (see Executive Report 102–55) that any future protocol or amendment to the climate agreement would come to the Senate for advice and consent. And in 1997 the Senate expressed that it should give its advice and consent to ratification of the Kyoto Protocol to the U.N. Climate Change Framework. Will you feel deflated if your hard work on the Paris Protocol agreements to the U.N. Climate Change Framework is thrown out by a subsequent administration or the U.S. courts should the Obama administration not get congressional advice and consent to formalize the negotiations?

Answer. We do not know yet what the specific provisions of the Paris agreement will look like, should an agreement be reached. We will evaluate the final agreement, including in coordination with the State Department's Treaty Office, and whatever the administration does will be in accordance with the law.

Question. How does the administration intend to reach the 26–28 percent reduction in greenhouse gas emissions from its 2005 level by 2025 as was submitted in the Intended Nationally Determined Contributions (INDC)?

Answer. This U.S. target is based on the impact of current policies (such as fuel economy standards for light-duty vehicles, appliance standards, and the Clean Power Plan), the implementation of new and expanded policies based on existing executive authorities under existing laws that have already been passed by Congress (such as forthcoming fuel economy standards for heavy-duty vehicles, additional appliance standards, additional measures to address HFCs and methane, and efforts to bolster our lands sector carbon sinks), and voluntary programs (such as Energy Star and voluntary programs to reduce agriculture sector emissions).

The INDC specifically references important actions that were active as of the first quarter of 2015. These included the following rulemakings: the Clean Power Plan, heavy-duty vehicle fuel economy standards, standards to address methane from landfills as well as existing oil and gas operations, the Significant New Alternatives Policy (SNAP) program to reduce HFC emissions, and appliance standards.

The INDC also references Executive Order 13693 that sets a target to reduce greenhouse gas emissions from Federal Government operations to 40 percent below 2005 levels by 2025.

There are, however, many important steps to reduce emissions that were not specifically listed in the INDC but that were considered in setting the target.

For example, the U.S. Forest Service and other agencies are working to bolster the health of our forests and grasslands, and we are pleased that the most recent data suggest our overall lands sector carbon sinks remain healthy.

Similarly, USDA is taking steps through a wide-ranging set of voluntary programs and initiatives to help agricultural communities cut energy waste, invest in renewables, and reduce greenhouse gas emissions.

HUD is working to advance renewables and improve energy efficiency in the housing sector including through Property Assessed Clean Energy (PACE), their energy efficiency mortgage program, and financial incentives in collaboration with DOE's Home Energy Score.

DOT is working to encourage smart growth development that reduces the need for driving and to empower consumers with the information they need to choose tires that improve fuel economy.

Question. During your testimony you said that a draft text exists and that it has both legally and nonlegally binding portions. Can you please share the current draft text with the committee? And with the conference only a month away, have you consulted with the State Department's Office of Treaty Affairs on the process to submit

the agreement to the Senate for advice and consent? Will the administration submit legally binding portions to the U.S. Senate for advice and consent?

Answer. We do not know yet what the specific provisions of the Paris agreement will look like, should an agreement be reached. We will evaluate the final agreement, including in coordination with the State Department's Treaty Office, and whatever the administration does will be in accordance with the law.

Draft agreement texts are public documents available on the UNFCCC Web site at the following address: unfccc.int/2860.php.

Question. Who are the expected members of the U.S. delegation to the Paris climate conference?

Answer. As the lead climate negotiator for the United States, Todd Stern will lead the delegation to COP-21. Other members of the U.S. delegation will include negotiators, attorneys, subject matter experts, and support staff, among others.

