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P R O C E E D I N G S

MS. FRIEDMAN: Hi. Thank you so much for coming. What a huge crowd. This is so impressive.

My name is Lisa Friedman. I'm the editor of ClimateWire. For those of you who are unfamiliar, we are part of E&E News, a leading energy and environment news outlet in D.C.

And I am thrilled to have an incredible panel of people from all facets of policy, to talk about the implications of President Trump's decision, and announcement the other week to pull out of the Paris Climate Agreement.

Just to set the stage a little bit, the Agreement, among nearly 200 nations, to keep global temperatures well below 2-degrees Celsius, above pre-industrial levels, was by all accounts, and is a historic one.

It took some five or six years from Copenhagen, but really about 20 from the Kyoto Protocol to design an agreement in which all countries said, yes, we do have responsibility to do something about climate change, we will do things differently and -- but we will all act; 195 countries, now it will be 194.

And I'm joined today -- I'm just going to go down very quickly and give the titles of our panelists, their full bios are in your packets. And just to say if I look at my phone later, I'm not being rude and checking my email while we are talking, I'm looking for Twitter questions that may come in while we are having this discussion as well.

So, directly to my left, Phil Wallach, a senior fellow with Governance Studies at the Brookings Institution; next to him Amar Bhattacharya, a senior fellow in Global Economy and Development here at Brookings; Nate Hultman, director for the Center of Global Sustainability at the University Maryland, School of Public Policy; Samantha Gross, a fellow in the Energy Security and Climate Initiative here at Brookings; and finally, we have David Hart a professor of public policy at George Mason University, and also a senior nonresident fellow here at Brookings, right, on Metro --

MR. HART: Metro Programs.

MS. FRIEDMAN: -- Metro Program. So, let's begin. Amar, let me just start with you, when we were talking you were telling me that you were at a G20 meeting in Europe as President Trump

made his announcement. Set the stage for us. What was that like? What was the reaction? What was your reaction?

MR. BHATTACHARYA: Thanks, Lisa. So, maybe let me begin a little bit by saying why the world thinks that Paris is special. You know, before Paris we had an agreement which was, you know, put in place in 1997, the problem with that agreement was that the U.S. was not a part of it. The problem with that agreement was that developing countries, big emerging markets and developing countries like China and India were not obliged to do anything. And the problem with it was that it used a particular mechanism of capping emissions, but in a way where the rest of the world was not really a majority and it really didn't produce very much by way of results.

And particularly when you look at the amount of carbon out there, you know, a very large proportion has come since 1997. So, we then moved into Paris, and the thing about Paris that's striking is its universality. It applies to all countries of the world, and all countries came together as a result. And yes, there was an understanding that those countries that were richer, and that had put -- you know, that were emitting carbon, needed to do more, but it was also recognized that everybody had to do their part.

Second, there was a recognition that climate change was already upon us, and that we needed to spend significant sums of money to deal with the impacts of climate change especially for the vulnerable and the poor. And for that there was a commitment and, you know, to putting up sums of money, not as large as people think, but significant sums of money on the table. And the most important thing about Paris was, it was a commitment with ambitious outcome, of keeping global temperatures, as you said, to no more than 1.5 degrees.

So those were the elements of Paris, and everybody signed up. And I often say that what made Paris a success, was that the sinners became the saints. And what do I mean by that? The United States, China and India, instead of being the laggards, became the leaders of the Paris process. So it was really the leadership of the United States, in particular, and Nate was in the White House at the time so, you know, people like that who really made this into a global enterprise, and a global outcome.

Now, that atmosphere has imbued the Paris discussions since. And the main thing about Paris, is while it was very ambitious in terms of its goals, it left fairly loose what countries would actually do in terms of their commitments. And there was a recognition that the commitments that were on the

table were nearly not enough.

They went part of this distance, but they did not go enough to get you the 2-degrees, so Paris explicitly put in place an arrangement that every five years there would be a review of these commitments, and those commitments would be ramped up. And that was the DNA of Paris.

First, it was built on cooperative action, and building in some sense coalitions of the willing, and second it was about peer pressure. That's what Paris is about, now --

MS. FRIEDMAN: We are going to come back to that concept of peer pressure.

MR. BHATTACHARYA: Now, coming to what the international reaction was. I mean, it's fair to say that, you know, the world was not surprised when the announcement came because it had been building for a while. At the G7, and you know, it's very, very unique in the nature of the G7 that six countries decided to make an announcement, you know, saying that the seventh didn't agree, but we six are committed to it. That's almost unique in the G7, it doesn't happen in any GS, the GS usually say we are holding it together or they don't say anything at all.

The fact that they said, that the G7 said, six of us countries are absolutely committed, and one of us is not, you know, speaks mountains in terms of that discussion. And so the G20, this was bubbling, and what was very, very clear, you know, from NGOs to think tanks like us, to officials, et cetera, is that the G20 will remain fairly firm in its commitment to Paris as a cooperative enterprise.

It's particularly significant because Germany is in the Chair. Germany has put energy and climate as one of the most significant pillars of this year's action, Germany is pushing a lot of the means. When we were there, you know, we organized the launch of high-level commission on carbon prices. We expect that to be a very significant part of the action agenda, and I think what you will see is a lot of pressure now mounting for the G20 to remain firm in its commitment to Paris.

But it should not be seen as an opposition to the U.S., or in opposition to anything, this is a positive agenda. And the other part about the whole discussions, and we can come back to that, is there was a report that had come out about a week, and it came around May 14th or 15th from the OECD, and the title of that report is called, "Investing In Climate, Investing In Growth." And the basic thesis of the analysis is that if you invest in climate, it's not at the expense of growth, it actually is better for growth.

And I'll leave it at that, and I can come back. Thanks.

MS. FRIEDMAN: Perfect. And, you know, I said backstage that I was going to go to Samantha next, but we are going to dive a little more into the international reaction and where the world is going from here.

I'd like to bring it to Phil, because I want to get an understanding of what this means for our missions. The President announced the U.S. would withdraw from Paris Agreement that paperwork, so to speak, won't happen until November 5, 2019. There could be, you know, a new President a certain time after that, and yet even if that doesn't happen, that has nothing to do with our domestic commitments under the Clean Power Plan, which the President also announced he would roll back, yet that is still in the bureaucratic stages. So, what does this mean here at home?

MR. WALLACH: So, the thing I want to emphasize is that Paris Climate Agreement, every country puts forward its nationally-determined as a goal. And the idea, as Amar said, was the goals would become more ambitious as the years went by. But in terms of what are the devices in place to actually achieve those goals, that's left to the domestic law of the country. And so different countries will vary quite a lot in terms of what kinds of processes they will need to follow to put into place the policies that would allow them to achieve their goals.

And in this country, the Obama administration believed that if Democrats held the White House they would be able to just about meet the Paris commitment that the U.S. made through Executive actions that would not require any congressional action. That was a little bit --

MS. FRIEDMAN: And maybe that commitment, for those of you who aren't familiar, is 26 to 28 percent below 2005 levels by 2025.

MR. WALLACH: Exactly. And so when you look to sort of, where were we on pace to get under understand Obama administration policy, we were not quite up to getting there. The assumption was that we would find yet more policy initiatives to layer on top of what the Obama administration had put in place that would allow us to get there.

And would those have required congressional action? It wasn't always so clear, you know, given the political configuration of Democrats in the White House, and Republicans looking very uncooperative in Congress. The White House very much wanted to say, yes, we could do it without Congress, but that wasn't always so clear. And so, you know, the main question is: where do we get the

policies on the law books that are actually going to change the emissions trajectory?

So, certainly the biggest headline thing was the Clean Power Plan promulgated under the Clean Air Act. That was a final rule put into place by the Obama administration, and it remains on the books as part of the code of Federal regulations today, except that it's caught up in litigation, which may have had a significant chance of wiping it out. That litigation has stayed while the Trump administration revisits the policy, and there's every reason to think that they are going to go in a different direction.

They are going to be rather procedurally careful about the signal, but the policies are the policies, the Paris goal is the Paris goal, and one doesn't necessarily automatically flow out of the other. And so the Trump administration already, you know, well before the Paris announcement, had made it clear that on the substantive policy they were going to reverse their predecessors one by one by one on these issues. And again, some of that remains sort of work to be done, some of it could be wiped out by repealing Executive Orders that Obama had put into place, like The Social Cost of Carbon, which was a government-wide initiative, that is no longer a part of the Trump administration.

You know, and the other thing to say, is the dollars, right, Paris was partially about a commitment for dollars, and that, you know, Obama did manage to do some shuffling around and provide an initial sort of down payment, based on money that had been appropriated, but there was really no sign that the Republican Congress was going to appropriate more money that it would have contributed to fulfill what Obama had promised that the U.S. would provide.

So, that was always going to be a problem, even if Hillary Clinton were President right now. And one of the things I want to convey is just, really, you know, we all -- of course there's a lot of temptations to frame everything in terms of Donald Trump right now, for obvious reasons, but really this to me looks much more of a function of the partisan politics of climate policy in the United States, as it has played out over the last decade, than it does to be anything so distinctive about Trump.

MS. FRIEDMAN: And we'll get back to that for sure. Samantha we've heard a chorus of promises from the international community since Donald Trump's speech that they will go on, that they remain committed, that they are going forward. A big story in The New York Times this morning about China seizing this opportunity on clean energy, India says it's moving forward. We've also heard that this could be a real diplomatic problem for the President, that countries; be it Europe or others won't want to

work, perhaps, with the Trump administration for, you know, a variety of reasons. Can you give us some examples of how that might play out? Where does this get knotty in the diplomatic realm?

MS. GROSS: I can. Thank you, Lisa. So you look at how the Paris Agreement played out, and it might give us a really good summary of that. And part of the reason why the agreement succeeded is because of its flexibility and because of the optionality that's built into those nationally-determined contributions. None of this is binding, and that's what's allowed so many countries to sign on. And the U.S. really pushed hard for this flexibility. This was important to us, and important to get us on board in a way that we couldn't be with Kyoto Protocol earlier.

And pulling out now, particularly because this Agreement is so flexible, and because we pushed so hard for it, it's really kind of a finger in the eye of our allies around the world, particularly to the Europeans. And an important potential fallout from this is that it may make it more difficult for our allies to cooperate with us in some ways, politically.

You think of a democratically elected leader in Europe who is being asked to cooperate with the United States on some issue; on counterterrorism and your information-sharing Initiative for instance. Clearly this may be in the best interests of both parties, but that leader has the tricky problem of being seen by their public to be cooperating with the government here in the United States that their voters don't like, and don't trust.

And so I don't expect that we'll see a lot of cooperation on issues where there really is clear incentive for all these parties to cooperate. But if we are going to our allies asking for a favor, that favor may be very unpopular with those voters, and that's something that I don't think we've necessarily taken into context or thought all the way through yet. And how this will play out in the future, we don't know yet. I mean, this is the big question, but it's definitely something to watch for.

Another thing I'd like to point out, building on some of what Amar said, is that the speech that President Trump gave in the Rose Garden last Thursday really reignited some old and rather toxic arguments that have happened in the climate debate. Arguments about past responsibility versus future action, and arguments about what developed and developing nations should do.

The Paris Agreement really did a good job at getting past working around those arguments, by saying, each country bring what you can do and we'll work to raise ambition over time. But

Trump's speech on Thursday brought some of those arguments back, and saying that, for instance, China is still able to increase its emissions, and build coal plants, while the U.S. cannot.

On the one hand, again, they are nonbinding agreements, but with that aside, I worry about those kinds of arguments taking us backwards into a focus on the mechanics of the agreement, and then to a focus on who is responsible for what, rather than really focusing the world's effort on achieving a low-carbon economy, thinking about technology, and thinking about how to increase the world's ambition over time.

I don't want to see this continued fussing over the framework, that becomes unproductive, and I want us to focus on how to reach a low-carbon economy, and I hope that the announcement of last Thursday doesn't change that focus in an unproductive direction.

MS. FRIEDMAN: Let me just pick up on that for a minute, and ask you to follow up, Samantha, because -- so the framework for many years was that developing countries are not obligated to cut emissions, that that was the responsibility of wealthy industrialized countries, who were also obligated to provide finance for countries that were suffering from the impacts of emissions, predominantly because of industrialization.

That system ended largely by the United States, and so, you know, towards this system that you are describing in which all countries, you know, decide to act and if they have a global responsibility. So, when you talk about a fear of going backwards, have we seen any evidence of that yet, that countries are saying, well, if we are going to talk about responsibility, let's talk about responsibility? What's happened so far in the past few days?

MS. GROSS: We haven't really seen that yet, and I completely agree with everything that Amar is saying, and he's had a closer view of it than I have, of how people are reacting to the U.S. announcement. And we are not there yet. And I think part of the job of us in Washington, and probably everyone in this room, is to help prevent the argument from going there.

And I think some of these things that David will talk about here in a minute, that are happening in the U.S. outside of the federal government to help that argument. That even if the federal government is not necessarily pushing in this direction that other parts of subnational governments, other parts of society are pushing. And we think that helps getting that argument from getting out of hand.

MS. FRIEDMAN: Interesting. Okay, and before we get to David, I mean, so right now, you know, nations are meeting as part of the Clean Energy Ministerial, you know, talking in part about some of the on-the-ground work that countries can do to make emission cuts happen. What does this decision do to our efforts with other countries to build clean energy systems, and what does this do, you know, for their decisions on their own?

I mean, do you see countries backing -- Let me just temper this and say, you know, I know that the initial statements have been more moving forward, but down the road without the U.S. there pushing for things, like President Obama, Head of the Paris Agreement was talking to every world leader about Paris. Without that kind of constant nudging from the United States, does this still happen?

MR. HULTMAN: Well, I think we shouldn't mince words. I think that the loss of U.S. leadership on this is a terrible outcome, and I think it does matter that the U.S. has pulled, and is pulling out, not only the Paris Agreement but also walking back from the leadership role it's played in this area and others as well.

So, I want to just be clear about that, and I do agree that with that statement and Amar's earlier, that the U.S. was very active in helping pull together, not on its own, but in conjunction with a lot of partners, pulling together the coalition to make Paris happen. And part of that was demonstrating leadership at home, and making sure that we were doing the job that we knew we had to do reach the goals that would support the outcomes of Paris.

That said, it's been notable, and I think to some degree heartening noticing the reaction as Amar mentioned, Samantha mentioned, the reaction to the announcement, sometimes we don't really understand what we have until it's taken away from us. And so, I think people are kind of looking at that possibility of losing the consensus and the momentum that Paris had generated. And thinking, well, we are on a different page now than we were 10 years ago, and 5 years ago, even.

And this particular agreement gives us the mechanism and the path forward whether it's here in the U.S. or in other countries to get to those kinds of outcomes that we all know we need to get to, that the side supports, and that we know we want to go for. So, the strong statements of support, understanding that still there is action yet to be taken to implement that support, those statements were notable because it was the case that even around the negotiation of Paris, Paris depends on a cycle of

positive actions, of countries looking around seeing that there's actions here, there's actions there, and so we will also act.

There was concern that the loss of a major player, like the United States, might sort of bring everything crashing down, and I think what we are seeing right now is actually quite the opposite. It's not only not crashing down but it actually seems to be strengthening the resolve of the remaining parties to keep down --

MS. FRIEDMAN: And so you've been projecting, but how long do you see that lasting? And your story is that a --

MR. HULTMAN: Yes, so to get to -- I guess this is getting to your question now. How long does it -- So, to your point, how long does it last? So, I think that partly because these nationally-determined contributions were thought about at the national level, and because, you know, the momentum of Paris has created the consensus that these goals are in fact important and essential.

I see that the reiteration of those has been clear, and I believe that the continuation of those policies is likely to happen because in many countries it still makes sense to do them, right. That, you know, we are in a different world than we were five years ago. Not only because Paris is a different architecture, not only because the science is different, not only because we have a sort of stronger global consensus around it, but because the energy markets are completely different than they were 10 years ago.

The costs for renewable energy, for example, have dropped dramatically, solar dropped something like 60 percent in the last seven years, wind 40 percent, (inaudible) something like 90 percent, and electric vehicles are on the cusp of widespread distribution, and I know we don't want to get into that question right now, but the point is, that ambition is possible now, and it is possible in a way that we didn't think was likely even five years ago. What that means is that countries see that future as part of their economy.

It's not just sort of an addition that kind of add on like a sort of extra frosting on your economy it's part of your economy, and they see that there is economic growth and jobs that would flow from that.

MS. FRIEDMAN: And David, when President Trump gave his speech, he now kind of

famously said he was elected to represent Pittsburgh not Paris. We've since seen the people of Pittsburgh and lawmakers remind the President that they are overwhelmingly in favor of the Paris Agreement, as have the mayors and governors of -- what is the number now, of nine states, 125 cities, hundreds of businesses and universities are declaring that they are still in, as in Paris Agreement, and yet these commitments are still overwhelmingly from areas that are not some of the biggest emitters, and I'm not sure how much teeth they have. Lay this out for us. How big a deal are these commitments and how much can they overcome what may be lost?

MR. HART: Thanks. Thanks, Lisa. It's great to be here at Brookings. And I want to give a shout out to Mark Muro, who would ordinarily be in this seat representing the Metro Program. He is celebrating the graduation of one of his children, so our congratulations to Mark. And I'll do my best to channel Mark Muro who has done some terrific work on this topic.

So, I want to link back to what Phil said. Phil focused on the national policies that are implementing the Paris commitments, but it's also the case that the private sector, market forces that Nate referred to, and stated local policies that regional policies in the U.S. and the electricity market have been driving changes in our emissions behavior. So there has been a decoupling of economic growth and the emissions growth in recent years in the U.S., and not a lot of that had to do with Federal policy, a lot of it had to do with other drivers.

And so the President's announcement, particularly the way that he made it, I think has led a lot of people to become saints around the country, to declare their sainthood, and to declare themselves in opposition to the sinner in the White House.

And it's a very exciting development, so as Lisa mentioned, and there a number threads to it, I think everything is still sort of sorting itself out, whether it will converge on a single platform or not, I don't know, but I hope so, because there's no reason that we can't have something like a Paris Agreement amongst the United States without -- I don't think we can do without the federal government, but we can get by without them for a while, and I think that's the way to think about it.

So, for instance, as you mentioned, there was a hashtag, really not much more than that called: We Are Still In, that was sort of fully announced yesterday with nine states, and this grew out of an effort spearheaded by Mayor Bloomberg, Former Mayor Bloomberg of New York who was a Special

Envoy of the U.N. in this area. And so he mobilized what he called at that time, America's Pledge, which is now, We Are Still In, in which nine states, over 200 cities, over 900 businesses and over 180 universities have said: we still support Paris.

Now, exactly what that means remains to be determined, but nonetheless it's a statement of commitment. There was also something called the U.S. Climate Alliance, which was announced by Governor Brown, Governor Cuomo and Governor Inslee of Washington; that includes 12 states and Puerto Rico now, they were just -- expanded yesterday.

So, I think we'll see more states coming into this as we move forward. What it exactly means for emissions? I think that remains to be seen. A lot of it is happening because it makes sense economically, a lot of it is happening because the markets are being designed in such a way that it does make sense. So, energy markets are not free markets the way you might imagine many other markets, but they are structured by government, it's almost inevitable, and we see this all over the world, but across the states there are different models.

So I think it's an exciting development, there's a lot of hard work to be done to measure commitments, to monitor them, and there are some mechanisms in the Paris Agreement which we can talk about that facilitates that on international basis. But it might be possible for the U.S., states, cities, and private companies to say to the world in a united way, hey, we are still in Paris, even without the United States Government playing the role that it used to play.

I did a very crude calculation, just as states that have made commitments for 2050, that has emissions reductions commitments, and then extrapolating patterns from other states, and I came up with 43 percent by 2050. So, it's not 80 percent. I think we added cities that have made commitments, we might get over 50 percent. So, even without the --

MS. FRIEDMAN: 50 percent of?

MR. HART: 43 percent emissions reductions from 2005 in 2050. So, if we assume that all the states that have made 2050 commitments, achieve them, and we extrapolate emissions, patterns from the last few years, out to 2050, and obviously I wouldn't want to put this through peer review, so this is for the think tank consumption.

MS. FRIEDMAN: That could be a (crosstalk).

MR. HART: But, you know, I would invite my colleagues to improve these calculations. You know, there's a lot of work to be done on them. But just, you know, back-of-the-envelope stuff. We can say to the world, hey, we are halfway to our commitment without even trying. And now maybe the saints will get together and try harder.

MS. FRIEDMAN: Your body language is suggesting that maybe you have something to say about the (inaudible)?

MR. WALLACH: I don't know about that -- and of course the big "if" is if all the states do manage to deliver on what they've said, they can do by 2050, which some of them are saying pretty much, 100 percent sustainable by then, that's a big if. But I also just wanted to say, you know, there's a basic political economy problem here which is that the incidence of the costs of some of the climate mitigation policies, and the willingness to pay are in different parts of the country.

And that's not unique to the United States, it creates a political economy problem for pretty much every county, and so we have a coal-rich interior that does not worry about rising sea levels. They just don't pose the same threat to those people's livelihoods, and a richer coastal area that says, get rid of that coal.

And of course how important is the coal for the economy, you know, as my colleague Adele Morris has shown in some of her work, it's a lot less important when you actually add up how many jobs it represents and all that, than you might think. But it is still, especially, symbolically important to a lot of middle America, and they see a lot of these efforts as being sort of paid for with jobs from their regions.

MS. FRIEDMAN: If only (crosstalk).

MR. WALLACH: And so overcoming that political problem is always going to be, you know, the biggest challenge, so getting the regions that we already knew we were enthusiastic about supporting Paris to come forward and say, oh, we are still enthusiastic, we are still going to be pushing forward, not to say that it's not valuable, but it's not really news.

MS. FRIEDMAN: I was wondering if we could do a little bit of truth-squadding of some of the numbers, if that's possible. I think, you know, it's very hard to put the U.S. commitment in context of other countries' commitments, and it was designed to be kind of not easy.

Different countries have different baselines, different countries -- some countries are

reducing their actual emissions, some of them are slow in their business-as-usual commitments, but what we've heard consistently from the administration is that China has to do nothing for 13 years, which has been widely debunked. That India is doing very little, and that this would be deeply economically painful for the United States. Amar, can you parse that?

MR. BHATTACHARYA: Let's speak truth to power. So, yes, it's true that China was not bound to peak its emissions for another 13 years. But the reality is that China appears to have peaked already, and at a level of emissions that is one-third of the United States.

So, in India, in the case of India per capita emissions are one-tenth of the U.S., and because it's a rapidly-growing country, it's increasing. But both countries are investing much, much more rapidly in renewables, both countries now have renewable capacity far greater than the United States.

So this is not just about incremental things, but why are they doing this? They are really doing this primarily in their self interest. Why? Because fossil-fuel-based energy is not just creating carbon, it kills people, you know, the cost of lives in China, because of its pollution, is a gargantuan 12 percent of GDP, both India and China this year, more than a million people die every year, and it's rising rapidly, because of pollution.

So, the case for doing this is very much in self interest. But I want to come back to the point that we made, which is it may be in the aggregate national interest to move, but don't forget about vested interest. So, for the West Virginia of the United States, there are coal regions in China, there are coal regions in India, which have exactly the same kind of geographic issues, there is also a big lobby of so-called clean coal manufacturers.

So, you know, there are countries that export coal, so there will be vested interest, and one of the things is how do you ensure that you are following the greater public good, while taking care of people will be, in some sense, have to pay some of the adjustment costs.

And the reason I make that point is that argument is exactly the same as in trade where the U.S. is again, now, an outlier. And these two issues, climate and trade, are going to be the two big issues on the global discussions, and the U.S., you know, is not going to be really a major player on the table.

MS. FRIEDMAN: But on the numbers themselves, I mean if, you know, to some extent

the INDCs, and for those who are not familiar, the U.N. is filled with wonderful jargon, but --

MR. BHATTACHARYA: Intended Nationally Determined Contributions.

MS. FRIEDMAN: -- Determined Contributions, that countries put up, I mean, to some extent a reflection of countries' existing priorities, economic, you know, energy trajectories. If China is expected to meet its target, and India is expected to meet its targets, and the U.S., as Phil outlined, would have needed a lot more under a Democratic administration if Clinton had won. Does that mean that the U.S. target was stiffer than other countries?

MR. BHATTACHARYA: Who wrote the target, Lisa.

MR. HULTMAN: So, I think, Lisa, you pointed out, you know, under Paris, and I would just sort of rephrase it a tiny bit, which is, there was never an intention that it would be really difficult to compare the INDCs, there was a --

MS. FRIEDMAN: I didn't mean to imply that.

MR. HULTMAN: The reality of it is that the countries get to choose what form of target they put forth, so some countries do an absolute target. We are going to reduce by 26 percent below a certain level, but this or that date, others as you mentioned, do a per capita, per GDP as some kind of intensity target. That does make it challenging to compare, but it doesn't make it impossible to compare, and I think --

MS. FRIEDMAN: Maybe I did mean to say that, I'm just (crosstalk) --

MR. HULTMAN: Yes -- No, but the point is that these are different targets that are hard to compare. And that's correct, and to the extent that we can improve on that in the future let's do that as a community. But right now this is what we have to deal with. And I think that a lot of analysts have spent a lot of time looking at like the ambition as we kind of call it, of each of the targets, and I think one of the upshots is that, you know, the U.S. and China jointly put forth their targets in November of 2014 nearly a year before the Paris negotiation.

Those were the first two targets, and those were intended by both parties to be viewed as -- or to be substantively, and to be viewed as ambitious targets that would sort of catalyze they cycle of positive action leading to a consensus in Paris, and that a subsequent -- as Amar mentioned, subsequent like every-five-year ratcheting up of that ambition. That was the idea. And I think that what happened

was that that worked.

That initial set -- that initial momentum that came out of the U.S.-China Agreement, I won't claim all the credit there, but like basically that helped the process. A lot of people -- a lot of countries wanted this to work, a lot of countries looked at that and put forward ambitious targets of their own. And I think if you look across the major emitters, that you will see that most of those targets are actually substantively quite good.

You know, they may be not at the tip top of -- everyone is not at the tip-top of potential ambition, but they are pretty good. So, what we have a community now, is a group of targets that collectively were fairly ambitious, they were pretty good, and they gave us a really good base to do that iteration that Amar talked about. Like, you kind of implement some, implementing drives down the cost of energy into the future, it makes it more possible to do more ambitious targets down the road.

And that was the idea that this kind of bootstrapping effect, that over time you allow the global community to ratchet down emissions, step-by-step, so that by 2050, 2060, 2070 we've dramatically reduced emissions where we know they need to go.

MS. FRIEDMAN: And I would also give a shout out, if anyone is interested in looking at some kind of good comparisons of, you know, country's ambitions. Bill Hare at Climate Analytics has done some really interesting work in this area. Amar, and you wanted to?

MR. BHATTACHARYA: Yes. I wanted to say something that we shouldn't only focus on the United States and China and India and Europe. You have to remember that existentially there are a whole bunch of countries, I see my friend here from the Caribbean, you know, they are at risk of, you know, disappearing. And this year the conference of parties meeting, the COP23 as we call it, is chaired by Fiji.

And so, you know, when you look at Africa, when you look at large swaths of Latin America, you look at the island states, for these countries climate change is an existential issue. So from a U.S. foreign policy point of view you shouldn't just think about this as a China-India issue.

It's actually an issue now in which pretty much every part of the world has a stake and Africa as a whole, you know, Ethiopia made a very strong statement that they were really, really disappointed at the U.S. action, because they say for their Continent, the threat of aridity, the threat

coming from climate change, you know, huge swaths of agriculture is going out of existence. These are real threats. So we shouldn't just focus on the big countries when we think about the climate change issue.

MS. FRIEDMAN: And a lot of these small countries made commitments under the Paris Agreement, the Marshall Islands had an incredibly ambitious -- I mean a number of small islands. You know, war-torn countries, and they all made commitments under the Paris Agreement.

Bill Reilly, the Former EPA Administrator under George H.W. Bush, said the other day that the U.S. should -- and I hope -- I'm not going to be able to quote him directly: but should stop negotiating with the UNFCCC, not because he doesn't agree with it, he was a supporter of remaining in the Paris Agreement, but out of concern that the U.S. will drive ambition downward with other countries. Speak to that and what role do you see as the U.S., in these global negotiations now, if they are not in the Paris Agreement?

MS. GROSS: It is a very tricky question; and I kind of, in answering that, I saw Bill Reilly's quotes as well, and gave them some real thought. If you consider if the United States goes to COP 23, or to the other ongoing discussions, under the Paris Agreement, with the attitude that came out last Thursday, we might be better off not being there, frankly. For the reasons that I said earlier, we are bringing up all the arguments that I think become destructive.

Arguments about who is responsible for what, whereas, as everyone to my right, and my left actually, has pointed out throughout the discussion, countries have been -- have really come forward with ambitious targets. And also, I think there's a real numerization out there in the business regions to do this. I was at an energy conference down in Houston a couple months ago, and was incredibly struck, this is clearly before we pulled out of Paris, but I was really struck at how everyone there, oil gas and power, was not really thinking about of the Obama administration is pulling back on climate and we are all just going to forget about it.

MR. HART: No?

MS. GROSS: I'm sorry. But it could be wishful thinking (laughter) -- Okay, so the Trump administration is going to pull out --

MR. HART: (Inaudible) said something?

MS. GROSS: No. I didn't. But anyway, knowing we are down there and we are saying, we have a new administration and we are going to pull back on our climate efforts, what they were saying is, this is a four-year administration actually, eight-year administration, we are making very long-term decisions, we are not going to make them based on what this guy is saying. We are going to make business decisions. And if the U.S. is going to go into negotiations and sort of act like this is economically destructive, U.S. businesses wouldn't back him up on that.

You've seen Exxon Mobil, for instance, really lobbying the White House to keep us in. You saw that 25 businesses buy a full-page ad in The New York Times and in The Wall Street Journal last week, suggesting that we stay in. So, if we go in saying this is economically bad, this is going to destroy the U.S. economy, we are opposing our actual business community that for the most part it's saying, not so much, we are not buying that; even our energy community continuing to invest in clean energy, because it makes economic sense.

I heard a large energy industry CEO said something in a speech that blew my mind. He said, I don't set my strategy based on tweets. Granted the announcement the other day was bigger than a tweet and much more substantive, but they are making longer-term decisions, they are making them in terms of what makes business sense, and if the U.S. is going to go out and say this doesn't business sense, then the U.S. isn't being helpful. And I think the U.S. is kind of the wrong side of the economics. Did that perfectly answer question, but --

MS. FRIEDMAN: Oh, no, you did. Did anyone disagree about her thoughts on whether the U.S. should remain in the negotiations? So, I mean, a general consensus that if we are not going to move forward, the U.S. should get up.

MR. HART: Well, let's distinguish here, again, between the U.S. Government, and the United States as a nation. So one of the unique aspects of Paris is that it does -- it made an effort although countries are the parties to the agreement, but it made an effort to bring in civil society, it made an effort to bring in even state and local governments, because one of the weaknesses of the Kyoto Agreement was perceived to be that it was too much top-down. It didn't have a strong enough base in civil society, including business, obviously, as a huge part of that. So, certainly the U.S. is going to be there, and in that fashion, even if the U.S. Government is, you know, a skeleton crew or absent.

MS. GROSS: I'll add a note to that quickly, actually. The climate, it's kind of meaning the things that you think about that we negotiate internationally. You think about things that we have an international negotiation between trade agreements; or like Arms Control Treaty, where really that's a federal government responsibility completely. Whereas, climate change really requires a whole of society approach, and so I've been to COPs before, and you have the whole of society presence there, and so it won't be necessarily -- even if we really entirely pull out, and just don't even show up, from the federal government point of view, U.S. businesses will be there, people --

SPEAKER: Jerry Brown will be there.

MS. GROSS: Jerry Brown will be there. I mean, representatives from other levels of the U.S. Government will be there, so there won't be a complete U.S. vacuum. And it's unique that the whole nation can respond to this. It's not something that's very singularly a federal government issue.

MS. FRIEDMAN: And we should say that Governor Brown is in California, and (inaudible) is in China right now, and will be talking to countries on clean energy development. Before we move forward one last look at that question, and Nate, I apologize for throwing all the tough ones to you. But how much responsibility does the Obama administration bear for what is happening right now, for not taking hold of this when they had, you know, the Congress, for not making this a first-term priority?

MR. HULTMAN: Hmm?

MS. FRIEDMAN: We are pushing this (crosstalk) said it.

MR. HULTMAN: I mean, you know, my view is that the Obama administration, this was an effort that they -- and when I was with them, we invested a huge amount of effort into, and I think across the U.S. Government, invested an enormous amount of capital, political capital, into doing what we thought were the -- implementing the strategy that we thought would be most effective, given the tools we had at our disposal at the time to set the world up for an agreement that had widespread buy-in and consensus momentum, and potentially the potential to, you know, lead us down the cycle of positive action to the future.

So, I think that the Obama administration absolutely delivered on that. Now, if we could wave a wand and say, we wish we had a world in which in 2010 the Congress did pass a cap and trade measure, wouldn't that have been great. I can say, sure, that would have been nice. If right now, the

Congress, there are certainly people as the kind of dynamics of the politics continue to evolve, there are certainly Republicans that interested in dealing with climate change.

And I think that this is an example of how, you know, climate is not a partisan issue at its heart, and so to the people who are thinking about creative strategies for dealing with climate change, maybe a tax and dividend kind of approach, which some Republicans have suggested, maybe there are other constructive approaches that Republicans and Democrats could agree on, outside of potentially, the Trump administration, that Congress might well want to do something like that. And that would be a great basis on which to sort of set a future U.S. policy. It's not the only way, but it's one way that I could see it being a potential option.

MS. FRIEDMAN: That will be interesting. And I mean, Phil, the Obama administration, negotiators that helped developed the Paris Agreement, you know, many of them were from the Kyoto era, they bent over backwards to, as they would repeatedly say, to learn the lessons of Kyoto. To design an agreement that would state what was laid out for them, by the Senate and the Byrd-Hagel Amendment, you know, which loosely demanded that if the U.S. acts, other countries will have to act.

They feel like they did everything that Congress, Republicans, wanted from them, you know, whether they did or not is clearly another question, but can the U.S. ever agree to a global planet deal? Or do the goal posts keep changing?

MR. WALLACH: Well, let me play devil's advocate here, just to make things --

MS. FRIEDMAN: Please.

MR. WALLACH: -- a little interesting. I mean all this flaunted flexibility in the Agreement can also described as toothlessness. It makes it so that President Trump can withdraw from this Agreement and claim that it doesn't even really matter, because it's all about symbolism, and that that's not the craziest thing anyone has ever said. It means, you know, that much of this is based on energy prices, Trump can get up there, and truthfully say that the U.S.'s emissions have been dropping lately and that's a function of the triumph of natural gas.

And he wants to -- He did not get up there and say the U.S. thinks climate change is a big fraud, you know, he might have said --

MS. FRIEDMAN: He didn't say anything about climate change.

MR. WALLACH: Well, no, he said some things about greenhouse gas emissions, and the U.S. is actually a leader in cutting our greenhouse gas emissions.

MS. FRIEDMAN: But not whether climate change is a threat that the world needs to address, or any (crosstalk)?

MR. WALLACH: But he wants to portray it as a technological thing that the U.S. is going to be -- continuing to be a technological leader, and that's where the real action is. And so, you know, I think there's something to that. I mean, if gas -- if the ratio of prices between gas and coal remains extremely favorable over the next decade, I think the U.S. might be able to just meet the original Obama administration commitment without very much extra policy effort.

It's always a matter of what the prices are going to be. So, you know, I think the Republicans get what they were always asking for, I mean, it's hard to say, the truth is that political dynamics have become so toxic, they were so much worse even than they were in 2010, when you did have some Republican Senators who were very actively interested in trying to help something work. It was a hard political sell to get the democrats assembled in the Senate, it didn't happen.

But it became such a confrontational issue, the language that we use for this policy issue is so much about saints and sinners, and the people who are designated sinners don't appreciate that, making it harder to get back to a more pragmatic mindset. So from my perspective, there was a real loss in the Obama administration strategy of, do what we can going it alone because we have to write off Congress. The environmental community really, to a large degree, took that approach also, I think it had risks and we are seeing what they were.

MS. FRIEDMAN: We are seeing them play out now. David, is this all hope for a global agreement dead after this?

MR. HART: Well, I'm probably not the right person to address that. But I did want to just speak to something that Phil said, which is, if the President had come out and said, we are going to make a big push in innovation, the world doesn't end in 2025, eventually we are going to need to clean up emissions, not just from coal but also from gas, and it's true that much of the progress in recent years has come from gas, or replacing coal.

But instead the administration has proposed massive cuts in federal investments in

research and development. It doesn't really have a plan to accelerate innovation. That might be another approach, which I think we can associate some of that with the Second Bush administration, kind of took that approach after Kyoto. So, I think that argument doesn't wash now.

As to whether all hope is lost, I guess, again, I'll turn back to my role here as the spokesman for the Metro Program, I don't think it is and I think, again, this notion of having a kind of a positive feedback process amongst states and cities, move forward will help.

I do think we are going to have to work on talking about it as clean energy, and this is a really tricky step. It is difficult for Republicans to talk about climate.

MS. FRIEDMAN: We are back to those days when we can't say the term climate change?

MR. HART: Yes. And we need to bring especially governors and mayors, and state-level officials in who are comfortable talking about clean energy. There are dramatic developments going on in some of the places that were mentioned by Phil. So, absolutely true that there's political economy problem, but there are ways to address that.

So, if you look at where the wind in this country is, or how do the wind blows in places that vote for Republicans, and they are building windmills, because it makes economic sense. So, that's something that we can build on --

MS. FRIEDMAN: North Dakota, Oklahoma, Texas (crosstalk)?

MR. HART: Texas, yeah, yeah. It doesn't blow very hard in West Virginia, so there are places where we need something else, and I think there we can also address it with technology by investing in carbon capture, which the world needs for other reasons. Maybe the United States might be able to get to its target without carbon capture, but the world can't. And there are applications for it in industry as well as energy.

So, I think all of us need to make an effort not to demonize. I think the saints and sinners talk is -- it is counterproductive, but it's still difficult, especially in this moment right after the President's, as Samantha talked about a speech that was not very diplomatic, to try to turn the other cheek, so to speak. I'm refuting my own metaphor here, but to try to build that common pragmatic ground, that's where we need to go domestically.

MS. FRIEDMAN: Before I turn to Amar, I'd like folks to get your questions ready, we'll have questions. And do we have someone going around with a microphone? Yes. In the back; so start raising your hands.

Amar, let just, you know, in this round with you. You and I talked on the phone about this, you know, this is not the first time that the United States has convinced other countries to shape a global climate agreement in a certain way, you know, under Kyoto, the carbon market structure was all us, and then a new President comes in and says, this is not happening. So, if in three-and-a-half or seven-and-a-half years a new U.S. Climate Envoy goes to Bonn, and again says the U.S. is back, will anyone believe us?

MR. BHATTACHARYA: Well, it will, especially if we get, you know, U.S. businesses and U.S. states and U.S. cities on track. You know, remember that so much is now happening at the cities' level, and there are many, many global coalitions of cities now, C40, the 100 Cities, breakthrough urban coalitions, and I wanted to say that this is not just about energy, it's about infrastructure more broadly, and building a better, smarter and more resilient infrastructure.

Most of the development will take place in cities, and if you build smarter, better, cleaner cities, it's not just good for the climate, it's good for lives, it's connected, it's accessibility, lots of things, and remember that in the next 15, 20 years, the world will build more infrastructure than exists on the planet today.

So, if you did it right, you'll have a tremendous opportunity to change the footprint of the world. So think of it as an opportunity not as a cost, and that's where the Chinas and Indias can play a big role. It's in their interest to do so.

I just wanted to add one final point about the U.S. which is, the U.S. also withdrew from climate financing, and primarily because the word climate was associated with the financing. And that's unfortunate because, you know, the reality is there are going to be countries that are really going to be hit by climate change, and it is important for the U.S. to exercise leadership, and sure, say, yes, we care about these countries, and we are willing to put the finance on the table.

Second, you know, Brazil has tremendous amounts of forests, but when Brazil protects its forests it's good for the world. Why should be Brazil be the only one paying for it, it should be the

world at large paying for it. And third, it's this issue of infrastructure, we need to build a better infrastructure, we need the financing for it, and the amounts of financing that we are talking about coming directly from the U.S. taxpayer, is extremely small.

What is going to be a main catalytic effect is going to come from the multilateral development banks. And where if the U.S. blocks the expansion of the multilateral development banks, then it will be a lose-lose for no purpose at all.

MS. FRIEDMAN: Let's go to the audience; a question here in the fourth row, on the aisle? And let me just preface this by just saying we have a huge crowd, if you could ask a direct question and not give statements; that would be a huge help for us.

MS. BOURBON: Hi. My name is Contessa Bourbon, from The New York Times. I'd like to get the views of the panelists. With sentiment mostly from conservatives that the Paris deal is not really that significant, because U.S. private businesses and entrepreneurs are investing greatly to curb carbon emissions, so even if we don't abide by the Paris Agreement there will be great cap on carbon emission. What is your view on that?

MS. FRIEDMAN: Maybe I can take -- That's a great question. Let me take, since we have so many, two or three at a time, and write these down; in the second row on the end, and then in the back on the right.

SPEAKER: You've said that the universities are behind the Paris Accords, how are the universities going to contribute anything when all of the federal funding that goes to university research is all being taken away. The National Science Foundation, for example, and the Energy Department.

MS. FRIEDMAN: Great budget question. And then, yes.

SPEAKER: How much of an impact is climate change going to have on congressional elections in two years -- next year, and then presidential elections in 2020? I'm guessing that it's not much but, please?

MS. FRIEDMAN: And also, I forget to say this, if folks can give their name and affiliation, that will be terrific too. You know, if I understood your question correctly, you know, is Paris a dangerous (phonetic) solution of a success -- of a solution, rather, of cutting emissions?

MS. GROSS: I'll take it very briefly. I will describe Paris as a framework. The world

needed a framework to allow cooperation, and to allow the sort of virtuous cycle of seeing that we can do more, bringing costs down through economies of scale, in better technology, and continuing to get better. And so the whole idea of innovation and of steadily improving technology that's definitely part of what the agreement is allowed to encourage.

I certainly don't think the existence of improving technology and improving innovation in any way negates the Paris Agreement. I think the Paris Agreement relies on that to achieve its goals.

MR. HART: Can I just reply on that a little bit.

MR. HULTMAN: Go ahead.

MR. HART: Well, I just want to mention mission innovation which was negotiated in parallel with the Paris Agreement, and announced at the same time, which is a commitment by the major R&D, the public R&D investing countries to double their commitment, and that is also as the second questioner suggested, I think it's beyond endanger. I think the U.S. will not be able to meet its commitment, and while some market forces are pressing in the direction of lower emissions now, there's no reason to think that that will last forever.

Moreover, as I mentioned, over the horizon, beyond 2025, we are going to need solutions that step beyond what we have now, and that requires some foresight, and unfortunately some of that is being lost right now.

MS. FRIEDMAN: And David, since you have your finger on the pulse of Metro, maybe you can also speak to how this will play in local elections, congressional elections. Do people vote on climate change?

MR. HART: So, I think this comes back to Phil's point, in some places it may matter a lot, in many places it will just matter a little bit at the margin. I think as part of a broader picture, the dominant fact of the last election was partisanship, and there's no reason to think that that will change anytime soon. That has been a growing trend, the partisan polarization of a country, and I think the pressure is still to push us to the wings, and this issue can be used for that purpose.

And I think that's somewhat unfortunate, because it is a shared problem. There are solutions, commonsense solutions that would be win-wins, but it's difficult for us to get there with the dynamics that we have.

MS. FRIEDMAN: So, one thing that was really noticeable during the presidential election was that climate change didn't -- barely came up during the debates, but in addition to that, when it did come up, you know, it came up in the context of: do you believe in climate change? And, you know, getting people on the record and making them, you know, using that politically.

You never heard Hillary Clinton talk about the Clean Power Plan. And so I wonder, do you think that Paris is something that is going -- you know, it's not an easy thing to describe what it is, why it matters, you know, what it means for emissions. Do you see Democrats using the withdrawal of the Paris Agreement in elections coming up?

MR. HART: I think the winning issue is jobs, the winning issue is clean energy jobs, the winning issue is that the emerging market opportunities, some of which are already here, are bigger than those that are being left behind. And I think we'll see -- I actually think we'll see candidates on both sides of the aisle speaking in those terms.

As I mentioned, in many states that are controlled by Republicans, there are large opportunities for renewables and for other low-carbon energy sources to put to use, and they are being put to use. So, I think that that's where the opportunity is from a political point of view. I do think, and this comes back to something Amar was alluding to, it has been used in the context of globalists versus --

MS. FRIEDMAN: Nationalists?

MR. HART: -- nationalists I guess that's the frame. Now, and then it becomes a caricature, and it becomes much less than the actual terms, and much more about sovereignty, you know, in my view phony claims about sovereignty in particular, especially given the way it was crafted as we've heard.

MS. FRIEDMAN: We have a whole discussion on whether the world is laughing at us. But let's take a few more questions and then -- because I know folks have a lot to say. Over here in the aisle, the gentleman in the brown suit, and then in the second row, and then I see a hand way back, on the right side, with the red shirt.

MR. MILLER: Yes. Thank you. Jerry Miller with Science for Decisions. I'd like follow up on David's comment a moment ago, and ask about a specific case, that is the State of Texas, where there is a substantial and rapidly-growing renewable energy economy, and of course a traditional oil-

based economy as well. If you look under your crystal ball, I'd like to hear the panel's thoughts about, how it's going to play out in Texas, an otherwise conservative state that now is becoming more dependent on renewables.

MS. FRIEDMAN: Great question. And over here.

MR. YOUNG: Thank you. Jesse Young with Climate Nexus. Really quickly, there's this conventional wisdom that China will sort of step up to the plate to be international climate change leader in the place of the U.S. Although, I think when you talk to a lot of folks who do that stuff for a living, it's their sense that China doesn't want to play that role. They don't want to expend the diplomatic muscle to convene the major economies' forum, or browbeat other countries into raising the ambition of their targets, and they are just getting a lot of credit right now, basically for treading water. I'm curious if the panel feels that way, or if there actually is some sort of impetus on China's part to step forward, or whether that's just sort of a consensus that isn't based on anything. Thanks.

MS. FRIEDMAN: And then in way back.

SPEAKER: Hi. My name is (Inaudible), I'm from JICA, Japan International Cooperation Agency, the government agency of Japan's overseas official development assistance. And my question relates to the zeroing out of a green climate fund of the United States. Amar, you mentioned about the possibility of blocking multilateral institutions from financing on climate issues. And I wanted to ask whether there is a real threat of the Trump administration putting pressure on multilateral banks to prevent them from following through on the commitments that were made around the Paris Agreement.

MS. FRIEDMAN: Let's start with that one, if we could, Amar, because I think there are a lot of tentacles to that.

MR. BHATTACHARYA: Yes. So, let me explain why it's not a threat, but why some people may think it is a threat. So, what the multilateral development banks primarily do is finance infrastructure. That's what their main line of business is, and because they've not been doing enough, there are new institutions that have come to the fore, like the Asian Infrastructure Investment Bank, and the New Development Bank, the BRICS Bank.

The U.S. position on The World Bank in particular, but also on some of the other MDBs, has to be very cautious about the capital increases of these banks, which means that they can do less,

and there's a lot of pressure that you can do more with less, but given the scale of the challenge that we face, you know, the climate change agenda is quintessentially, about changing the part of new investment.

And there the multilateral development banks can do two things that are unique to them, (a) they can ensure that these investments are indeed the smart and newer kinds of investments, and then they can help mobilize financing with most of the financing coming from the private sector. That catalytic role is key to getting us that 90 trillion of investment, most of which has to be in emerging markets, and the developing world.

So, those of us who work on this issue argue very much that we should really scale up these institutions, not just for money, but for doing a better job in terms of the quality of investment. But if the U.S. has already made clear, the new administration has already made clear that they do not support the capital increase, for example, for The World Bank, and that would be very unfortunate.

So, the way that, you know, we would like to persuade this administration, indeed the world at large, is that investing in sustainable infrastructure is good for the countries, is good for the world, it's a domestic-demand-based development, it produces jobs, it produces inclusion, and it helps it poor. So, if we can make this a cooperative agenda, again as very much my fellow panelists were saying, we will get out of this thing that climate finance is about some kind of me giving money to somebody else, but rather it's a really a cooperative agenda.

So, that's why I brought in the multilateral development banks rather than seeing this as handouts that you are giving to countries. And indeed, you know, the Foreign Minister of India took exception to President Trump's statement that, you know, India got into the Paris Accord, because it was expecting billions and billions and billions of dollars. And India basically said, no, we are not expecting that our motivation very much is with climate change, matters to us because of the impacts that it has.

And as more and more countries spin it in a positive way, rather than, you know, this is about us versus somebody else, the more chance we will have of creating a virtual cycle.

MS. FRIEDMAN: And you've already stated that even China for its part is going to stay the course; does anyone have any other thoughts on -- to that cost on China?

MR. HULTMAN: Yeah, let me take that. I would sort of echo, first of all, on China's

target, it doesn't, you know, China seems to be deeply committed to hitting its target and may well exceed the goals that it set for itself before Paris. On the China leadership question, just a brief thought, you know, I don't know what China's thinking is about how hard they are going to be able to -- how much interest they have in browbeating and doing that kind of leadership, but I do think it's noteworthy that many people -- I'm sorry -- many countries around the world, China has by default now become this kind of leader in the climate space.

They of course did a lot of work ahead of time with a lot of the other countries, but with the U.S. pulling back, I think it's important to note some of the comments have been bouncing around this topic during the discussion today, but many countries view climate change as not only a sort of threat to their populations but in some cases an existential threat.

And here you have the United States essentially saying good luck, or not even good luck, or not even good luck, you know, like -- No, not good luck --

SPEAKER: America first.

MR. HULTMAN: -- we'll see you in the competition space, and hopefully we may not be damaged as much by climate as you are, and that helps us. So, a lot of countries can look at this kind of issue, Samantha was talking about this, right, like this creates all of a sudden this kind of bifurcation again, and this kind of oppositional strategy, which is now part of the U.S. sort of foreign policy.

And many countries view this as an aggressive act, right; by the United States, and so other countries who can say: look, developing countries we are in it with you, we are concerned about you, we are in the Paris Regime, the Europeans, the rest of the world, and China, can make a case that they are, you know, engaging with the world community, and thereby helping protect the vulnerable countries, and the U.S. doesn't have that position right now.

So, that does, in fact, play to other countries' advantage, and that was a loss that we incurred by the decisions. Let me say briefly --

MS. FRIEDMAN: Can I just ask?

MR. HULTMAN: Yes.

MS. FRIEDMAN: To follow up on that, before (inaudible), too. How much of that is substantive in the long run, and I keep going back, and I know I can't remember -- I've talked on this

offline with a couple of you. You know, ahead of the Paris negotiations there was a discussion at OECD, where the U.S. and Europe leaned on other countries, and successfully were able to get an agreement where the vast, I think, was 80 percent of coal technology in the export credit agency pipeline became ineligible for financing.

Amar, you were talking about how the next wave, of what's important is changing the scale of investment and where that goes. I mean, in that debate, not central to the Paris Agreement, but certainly important to making those goals a reality, you had the U.S. and Europe versus Australia and South Korea, and Japan, who ultimately came into the Agreement; and those countries were arguing that China will fill the void. If we don't export coal technology to poor developing countries, China will.

And so without the U.S. making the argument that all countries need to scale back on coal, doesn't the reality on the ground mean that, you know, there will be -- coal will flourish more overseas, if not here at home? What happens to negotiations like that?

MR. BHATTACHARYA: I'm personally optimistic that it won't. I mean, India announced that it doesn't plan to build anymore coal fire power plants. Why? Because, again, it's in its self-interest, and as you mentioned, energy prices, relative energy prices can determine choices, and it's better now, in India at least, to go from more renewable-based distributive power trajectory.

MS. FRIEDMAN: Pakistan wants to build coal, Bangladesh wants to build coal, and --

MR. BHATTACHARYA: Yes. And Indonesia wants to build coal, a lot of people want to build coal, and that's why you have to give them alternatives that say, you can actually be as well off, and we have the financing to support those alternative trajectory. So where will the leadership come from, now if the U.S. pulls out?

I don't think that the U.S. will pull out. I mean, just take that the clean energy partnership between the U.S. and India, that was established by the previous administration, there is no signal that this administration is pulling out from that, because it's great (inaudible) supplies. So, I think, you will find the U.S. was still active, because it's a business-to-business partnership ultimately.

MS. FRIEDMAN: And Texas, maybe, Dave, you can speak to the changes we are seeing there. Yeah.

MR. HART: Yes, I will do that. But I want to comment on this previous question just

briefly, which is the bigger self-inflicted wound, I think, of the current policy is the loss of emerging technology markets. And as The New York Times made clear in its cover story today, China has decided that it's going to win these markets, it's already done so in solar manufacturing, and if we are not careful the next-generation of automobiles will be made in China. And I think that's the bigger prize out there at the moment among a number of markets.

Okay. So, Texas, I think Texas in one way shows the virtues of this bottom-up approach, it's a unique place, not just because of the diversity of resources that has a lot of oil, but also a lot of wind, also a lot of sun. It also has its own electricity grid, which isn't the case in any other state, and it has a unique way of operating it. And so we have seen some dramatic growth in our low-carbon energy in Texas, and at the same time it's one of the most polarized states politically I think, and I don't see any sign of their alignment changing.

So, I think there are some limits to the progress that could be made in this sort of free market space in Texas, and especially with massive petrochemical facilities going in on the Gulf Coast to take advantage of cheap gas, that's a lot of infrastructure that's going to be hard to write off in the long run.

So, here has to be some federal push ultimately. And the other piece we haven't really talked about is transportation, and Phil might want to comment on Café (phonetic) standards, so that's another the administration is talking about rolling back. Clearly we are not going to make a transition in our transportation system without a push from the federal government, and I think a place like Texas is where you would see that in action.

MS. FRIEDMAN: More questions from the audience. Right here in the front; and right here next to you; and also in the front and then back.

SPEAKER: Thank you very much. My name is Stefan Oyer (phonetic), I'm from Florida International University. My question is in regards to something that wasn't really touched on, it's about geo engineering. I understand that -- Or, the manipulation of climate and weather, the U.N. states and private citizens have been discussion whether geo engineering is this new frontier for helping climate change, and in your opinion, this is a sort of a two-part question too.

In your opinion, does geo engineering with this debate over climate manipulation versus

climate mitigation, and if it does, do you think, as we know, the Paris, Kyoto and Montreal Protocols all had like different articles that limited geo engineering to a certain extent, and now that the United States is outside of the Paris Agreement do you think geo engineering will flourish here in the private sector, or, federally funding? So, what's your opinion on the relationship between geo engineering now and the U.S. Government.

MS. FRIEDMAN: I'm not certain if we have geo engineering experts on the panel, but first over there.

SPEAKER: Hi. My name is Michelle. I'm also from Florida International University in an area that would be severely impacted by rising sea levels. And my question is, in terms or when looking at the role of the federal government, they can scale back on funding for agencies such as the EPA. They can provide the necessary funding for research and development, for climate change resilient infrastructure, and you know, they can make it easier tied to the renewable energy market.

To what extent would you guys say that the federal government's lack of involvement now will help these businesses that are still committed because, you know, we are going the sentiment that America will continue on despite the federal government not involved, but given their power, and given the resources that they have, do you think that the efforts towards continuing this momentum by businesses and by states themselves will be hindered significantly by a lack of federal government intervention?

MS. FRIEDMAN: And are you Florida State, you too?

MR. DORSEY: No.

MS. FRIEDMAN: I was thinking it was a whole contingent.

MR. DORSEY: Michael Dorsey, National (Inaudible). Two questions, a positive and a negative one, on this issue of diplomacy and existential threat, and the negative side of it is some have talked about, you know, border taxes, and so forth, sanctions. What's the space for that, that's the negative version of this question? And then just as you all began to speak, it was put in the news, not just of Governor Brown being in China, but the agreement, the nonbinding agreement that they put together.

So, what's the -- The positive side of that question is what's the space for cooperative diplomacy in sort of the bilateral space on the positive side, and not that California and (inaudible) need

help, but also the opportunities on the bilateral side? To speak to those points, yeah.

MS. FRIEDMAN: Bilateral domestically, or like the U.S. -- the EU, China --

MR. DORSEY: Country-to-country. You know, the reason why I ask that and I'll reveal without revealing the who, but the message came to me from someone on the state saying there's now a conversation internal about how they can maybe open up some of those positive conversations on the bilateral side, which speaks to a different level of magnitude than cities and individual states. I mean, there's a lot of countries that still want to work with some of the more willing parties in place, right. Maybe talk to that, yeah.

MS. FRIEDMAN: And I would love to start with border tax, and what we might see from retaliatory measures, perhaps from Europe or other countries. Samantha, do you -- what is the likelihood of --

MS. GROSS: I think that no, those are quite unlikely, and I think it will be very difficult -- I think you could probably get it through WTO rules (phonetic), and probably a lot of people up here probably a lot of people up here probably know more about it than I do, but I don't think it would be an easy thing to do. And starting a trade war is not necessarily something that anybody really wants to start. You tend to end up hurting everyone, involved in a trade war with the United States.

MR. HULTMAN: But if Donald Trump wants to start a trade war (crosstalk).

MS. GROSS: It seems like he does, but I'm hoping that cooler heads prevail on that, because starting a trade war with the U.S. is probably not good for anyone involved. I'll also say a quick word about the cooperative policy question.

MS. FRIEDMAN: Okay.

MS. GROSS: There's quite a bit of that that's been going on. U.S., India; Amar mentioned U.S., China as well, and a lot of those are technology exchanges, they are business-to-business exchanges, coordinated by federal agencies, by states, and by the Department of Energy, are the ones that I know best.

And I think those will continue, those are -- there a lot of good reasons to do those, they are good for U.S. businesses, and U.S. businesses encourage them. And so I think you can continue to see a Republicans agreement that trade is a good thing to do, and that encouraging business is this

space is a good thing to do. So I think those are the kinds of things that you might see going on, and continued bright spots.

MS. FRIEDMAN: Phil, you are -- on the cooperative agreements?

MR. WALLACH: I mean, to the extent that you have cooperative private partnerships, I think I totally agree with Samantha, to the extent that California wants to frame itself as conducting its own international diplomacy, there's some obvious constitutional problems with that, and so I expect you'll see a good amount of that kind of thing over the next few years, and some interesting federalism clashes because of it.

MS. FRIEDMAN: Also on geo engineering.

MR. HART: I guess I can say -- I don't know. I was hoping Nate knows more about this than me. I guess I would say two things, one is he need for drastic actions in the future are made less likely if we take some gradual steps now, and I think the biggest fear about geo engineering is radical unilateral action by a party that feels like they have no other choice. So I think a gradual step now makes sense.

The other thing is geo engineering and mitigation are not necessarily intentioned with one another, and I would refer to the work of David Keith (phonetic), that's where he talks about the complementarity of these opportunities. I do think there's an increasing space to talk about it, it was off the agenda completely for a long time, and now the Academies, the National Academies has put out a report saying, hey, we ought to start thinking about experimenting, the first direct air capture of CO2 installation just went in, in Switzerland.

And so I think there is increasing opportunity to talk about it, but it will be a shame if we would only talk about it as the solution rather than as part of a larger package. And in some cases, you know, only to be like -- only break the glass if there's an emergency kind of thinking.

MS. FRIEDMAN: And as our audience member from Florida reminding us of the impacts on not just in other countries, but here at home. What do some of the budget cuts that we are seeing mean for efforts to build resiliency in the U.S.?

MR. HART: They hurt. I mean, I think that's really the only thing you can say, and I think Congress is going to step in and mitigate the worst of them.

MS. FRIEDMAN: You do?

MR. HART: I do. I think this budget was not taken too seriously on the Hill, but we have to have a top line number before we can figure out what it means for all the other accounts. So we are ways away from knowing exactly what will happen, but there's no question there's going to be some cuts, and I do think the pressure is going to be pushing in that direction, and to more austerity.

MS. FRIEDMAN: I've got room for one last round, so raise your hand if you've got a great question. The woman over here in the middle, the gentleman in the back in the blue shirt, and the gentleman off on the end there. Thank you.

SPEAKER: Stephanie Kenny (phonetic). I happen to be one of the original State negotiators for the first framework, and I would simply remind people, and I want to underscore everything Amar has said. In those days there was a pervasive fear and ideological conviction among the developing countries that environment or climate or energy was only a way to keep everybody else down. It is sad to me, that now we are engaging in that kind of thinking.

I have great faith that the next generation that has come on, is more sophisticated, more educated, and their self interest is going to dictate that they will run with the opportunities and that's, you know, both good and bad, it's bad for us, it's great for them.

I'm concerned about the amount of misinformation and disinformation, and I wonder whether you all have any thoughts on how we break through. Part of it I think will be helped by acknowledging that this is really about energy, environment is the benefit, the consequence, and how can we break through on some of the basic educational issues about energy.

People may also be interested to know, that when we negotiated the first framework, the U.N. framed it as environment, the United States negotiated it as an energy treaty which is why it focused on national diversity and solutions, technology cooperation and finance. The good thing about the second framework is that now everybody is in it, and will come back eventually, but I'm more concerned about the fundamental educational issue here involving energy.

MS. FRIEDMAN: A great a question.

MR. GROSS: Thank you. I'm Tom Gross, I'm recently of UNESCO, so perhaps my question is from a U.N. mind. In the past as we went from Kyoto to Copenhagen to Paris, really the story

was, can the U.S. ratify a treaty? And the answer became really clear at Copenhagen. No, they can't. And the rest of the countries and Copenhagen still had a thought that perhaps something binding could be created.

But nothing was negotiated correctly. We came out with that agreement, during the years past when we come to Paris, nobody even thought about a treaty. It was always geared towards something the U.S. could swallow. And that was really a fundamental part of a form that it came out in, nonbinding agreements, et cetera.

So, I'm just curious, the hole that's been left now, as the U.S. leaves the process, what would be your thoughts about the next COP? Will be aiming at an international agreement with more teeth than would be possible with the U.S., now that the U.S. is gone?

MS. FRIEDMAN: That's interesting, if the U.S. isn't there, why not have it be legally binding?

SPEAKER: Thank you. My name is Lin Tsiang (phonetic), from Energy Blockchain Labs. We are working aligning financial technology to green finance worldwide, and we have some partnerships with institutions like China Central Bank, MIT, and so on. My question is, what role do you think will financial technology play in green finance, especially in the U.S.? Thank you.

MS. FRIEDMAN: Thank you. COP 23, what happens?

MR. BHATTACHARYA: So, my sense that the focus of will be: let's get on with the job.

MR. HULTMAN: And it will be on Paris. It will be on the Paris Agreement.

MS. FRIEDMAN: But do you think that there will be any desire to --

MR. BHATTACHARYA: There's no appetite -- As I said, the framework is about ramping up actions, and with greater transparency.

MS. FRIEDMAN: And if I was going to channel the Former Envoy, Todd Stern, I think he would say that while the U.S. was out front on this, other countries didn't want this to be legally binding anymore than the U.S. did. China doesn't want this legally binding, India didn't want this legally binding. Am I right? Is that --

MR. HULTMAN: I think that's right, and I think that, you know, again, you know, there wasn't a consensus on exactly what this architecture would look like, you know, five years ago when the

kind of Copenhagen was the early Colonel of an idea for it. But I think over time, and as countries have kind of gotten on board, that that consensus has really crystallized and even, again, after the announcement, that countries of all kinds look at the structure of Paris and think, this is the best we are going to get for an international agreement to collectively raise ambition over time. And I think that consensus is there and it's robust.

MS. GROSS: One of my earlier points, I actually think -- I know that a binding agreement sounds really good in many ways, but I don't want us to get back into that argument, because that gets us away from thinking about implementation. How do we get to a low-carbon economy? It takes us back to sort of fussing over the particulars, which I don't think is where we need to be right now.

MS. FRIEDMAN: And when we talk about implementation, what then is the role now for financing for clean energy technologies? Where does that happen if it doesn't happen through the Green Climate Fund?

MR. BHATTACHARYA: The Green Climate Fund is a very, very small piece of the pie on finance.

MS. FRIEDMAN: The World Bank, as you were saying.

MR. BHATTACHARYA: As you've just said, you know, there's green finance at 10 times the level of the Green Climate Fund, that's already happening at a national level, and also at the international level. And finance is playing the role in two ways. One, is a positive role, so this tremendous interest amongst institutional investors now to invest in green projects, you know; and that market is growing at 25, 30 percent every year now.

The other side, which is also extremely important is what's called the climate-related -- well, financial risk disclosures of the, you know, the Bloomberg Marconi -- I mean the taskforce that has just come out with its report. And what that does is it puts a tremendous disclosure now, pressure on companies to disclose climate risks, and the impact of their climate work.

And then, you know, the New York Attorney General, is claiming that Exxon Mobil didn't make the right disclosure for example. So both on the positive and the negative, that's why I don't think that businesses are going to change their behavior, because they know that this is not a three-year game.

MS. FRIEDMAN: And finally when we talk about, you know, the information that people

are getting on climate change, what kind of final thoughts on that, and the information on the Paris Agreement. I wonder if, David, you might even give me some thought to how to talk about climate work and energy work.

MR. HART: I was just going to, you know, reference Crosby, Stills, Nash & Young, teach your children well. And actually The New York Times and The Washington Post have both run really interesting stories in the last few days on some of the challenges facing, particularly in the U.S., where climate change is somehow, now, pulled into a (inaudible) much like evolution. And other, you know, issues with religious dimensions, and it doesn't warrant that, and I think that would be a shame.

But I do think we are all working hard in this new information environment, and there are some good rules of thumb, you know, don't retweet something just when you receive it. Think it over twice, and applies to all of us to try to be good citizens in this information world.

MS. FRIEDMAN: We are already over, so I'm just going to ask everybody, quickly, you know, 10, 15 seconds on closing thoughts on where we go from here. Or where your level of optimism about the U.S. dealing with climate change in other avenues, even if not through the climate agreement. I open it to the floor, if anyone wants to --

MR. WALLACH: I'll take my stab --

MS. FRIEDMAN: Please.

MR. WALLACH: -- which is a modest one. I mean, partially on this education point. Really that the big trick is to get this not stuck in this horrible polarization dynamic that dooms so many issues to futility in our politics right now, and so that's the trick, you know. Unfortunately there is good social science showing that just giving people more facts, shoving facts down people's throat is not the answer. That actually tends to polarize people more. That's what the evidence shows, so you have to -- it's in different --

MS. FRIEDMAN: All right, but so does that (crosstalk).

MR. WALLACH: It's a different trick than that that we have to figure out in this country.

MS. FRIEDMAN: Amar?

MR. BHATTACHARYA: I think of it as a positive agenda, you know, of growth, of sustainable infrastructure, better cities, better lives, protecting your ecosystems, and that you can have

your cake and eat it too.

MS. FRIEDMAN: Nate, where do we go from here?

MR. HULTMAN: so on this topic I agree that more facts doesn't necessarily help, and it probably is not the -- you know, it's important to make sure we are getting the right facts out there, but also to remember this is values question, and it's a question of shared values, and we have shared values in this country, we have shared values in the world, and I think to kind of remember to always go back to those values and the things that we can share.

That's an area for common discussion, and that's an area where we can make progress, and I'm heartened, despite what I consider the bad news of last week, of the U.S.'s temporary withdrawal from leadership in this topic, I hope, I'm heartened by the strong reaction that we've seen globally, and in this country. That is a reaction that is fact-based, but rooted in the values that we share.

MS. GROSS: Let me give an amen to the folks to my right, and also point out that, yes, particularly in terms of jobs, in terms of economic growth, and in terms of the fact that the U.S. hasn't gone away. That the U.S. society, and the people in our nation are still involved in the issue. I think that's the key to both advancing things here in the U.S. and also internationally.

MR. HART: I'm going to quote Yogi Berra, the famous baseball player, and a philosopher and who said, "Prediction is hard especially about the future." If you think you know what's going to happen in world energy markets 10 years from now, you are surely wrong. What we are going to need are a lot of options, and the diversity that we see emerging both on the global and in the U.S. is encouraging. And that's something we need to all work on to build.

MS. FRIEDMAN: And that's a perfect place to stop. I'm sorry for going a little bit over, but this was a terrific discussion. Please give a round of applause for our speakers. (Applause) Thank you very much for coming.

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