

THE BROOKINGS INSTITUTION

ENSURING THE SUCCESS OF THE POST-PARIS CLIMATE AGENDA:
U.S.-JAPAN RELATIONS ON THE GLOBAL STAGE

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[Transcript prepared from an audio recording]

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P R O C E E D I N G S

DR. SOLIS: Good afternoon, everyone. My name is Mireya Solis and I'm the Knight Chair in Japan Studies at Brookings. It is a pleasure to welcome you to this program co-hosted by the Center for East Asia Policy Studies and the Cross-Brookings Initiative on Energy and Climate.

Just a year ago, a long awaited breakthrough took place when negotiators from 194 countries reached a climate change agreement in Paris with a goal of reducing greenhouse emissions. And in less than a year, the agreement has entered into force. This has to be remarkable record-breaking speed. Undoubtedly, the Paris Agreement was a remarkable breakthrough, but I think that really the success will hinge on the post-Paris agenda, and that is we're talking about a task of implementation.

Climate change has been a priority item in the U.S.-Japan agenda to globalize the alliance as underlined by the Joint Vision Statement that leaders from both countries signed in April of 2015. As two of the largest emitters in the world, the domestic measures adopted by the United States and Japan to meet the Paris emission targets will loom large in the overall success of this effort. But the challenges are steep. We know that in the aftermath of the Fukushima accident, Japan had to move and depend more on fossil fuel and the progress on renewables has not been as fast as many would have hoped. And now in the United States, there are now fresh questions about the implementation of the climate agenda commitments, and there is a lot of uncertainty about the energy and climate policy that the incoming administration will pursue. So again, implementation looms very large.

To help us make sense of this shifting situation, we have a terrific panel of experts who will help us understand better the nature of the Paris Agreement and the challenges ahead to ensure its successful implementation. So let me introduce them very briefly in the order in which I will ask them to come to the podium and make their presentations, and later on we'll have a conversation with all of you.

So, I want to start with my colleague, David Victor, who is co-chair of the Cross-Brookings Initiative on Energy and Climate and Professor of International Relations at the University of California-San Diego. In his wider-recognized work, David Victor has combined an understanding of the science behind climate change with knowledge about the domestic public policy formulation process. And he's a leading contributor to the United Nations Intergovernmental Panel on Climate Change.

Atsuyuki Oike is minister plenipotentiary and Deputy Chief of Mission at the Embassy of Japan in Washington. Oike-san served as Japan's chief negotiator for climate change at COP21, and therefore, we are very much looking forward to learning his insights given that he was really literally in the thick of the Paris negotiations. I would also like to take this opportunity to thank the Embassy of Japan for the generous support that made this event possible and to reiterate Brookings commitment to independence and underscore that the views expressed today are those of the speakers.

Phyllis Yoshida is fellow for energy and technology at the Sasakawa Peace Foundation, and before joining Sasakawa, she served as Deputy Assistant Secretary for Asia, Europe, and the Americas at the U.S. Department of Energy. Phyllis Yoshida has had a distinguished career in government, not only at the Department of Energy, but also at the Department of Commerce, and she has written extensively on Japanese technology and energy issues.

And Takeshi Kuramochi is a climate policy analyst at the NewClimate Institute. Kuramochi-san manages the Climate Action Tracker, which monitors the emissions commitments and actions of countries, and is the lead author of the 2016 Emissions Gap Report of the United Nations Environmental Program. His research focuses on national and sectoral-level policies to reduce greenhouse gas, and he has also conducted extensive research on Japan's post-Fukushima energy and climate policies.

I am very thankful to all the panelists, but I do want to thank Kuramochi- san especially. He and his wife are expecting a child any minute now and he still agreed to be here today. So thank you very much.

David, if you will please come to the podium. Thank you.

DR. VICTOR: It sounds like we should be especially grateful to your wife, in particular.

Well, thank you very much for those nice introductions. I want to say five things—we've each been given 10 to 12 minutes of fame to a talk a little bit about this in introductory remarks, and I just want to say five things in the time that I have.

The first is I want to say some nice things about the Paris process before we talk about all the uncertainties and so on. I've written, over the last 25 years, a lot about why international cooperation on climate change is going to be hard to organize and not work. I thought the Kyoto Agreement was an agreement designed to fail. I thought almost all the efforts were designed to fail in one way or another, and I'm actually very optimistic about Paris. And so I think, we have to recognize that this process, which is more flexible, more bottom-up, that allows countries to make their own pledges about what they're going to do, to start with things that are in your self-interest and then over time ratchet forward and deepen cooperation. That that's the right kind of process for a problem of this structure, and it's a process that actually largely mirrors the interests and goals of the architects that created it, and in particular the United States and China, the role of the United States and China here. And I think knowing a fair bit about the Japanese interests and Japanese industry, this is also a process that is much better aligned with Japan's on the self-interest.

The reason I mention this is because this process looks a lot like what the George W. Bush administration tried to put into place is a replacement to the Kyoto Protocol after all the blowback from when they unsigned the Kyoto Protocol. And I think that's one of the things that as the Trump administration goes from saying things, or actually mostly tweeting things, about climate change to actually governing and recognizing that there are other countries in the world that have interests here and so on, that they're going to see that there's actually a tremendous amount of support for this process and a process that is organized around this. And it's a process that largely reflects U.S. interests.

I think that introductory comment is important because we need to think about ways to keep the elements of Paris that have been constructive, even as other parts of it clearly face pressure from the new administration.

So the second of the five things I want to talk a little bit about is what will the Trump administration actually do in this area? My colleague, Nate Hultman, is in the audience here today. He's written a terrific piece about this—terrific pieces about this question. And I think there are a lot of really interesting scenarios here. Interesting in the kind of pathological sense, interesting in that they are distinct and they have different options, you know, and this territory, I think, is very well understood. There are options such as so-called canceling or withdrawing from the Paris Agreement, which is a three- to four-year process. There are options of kind of burning down the entire house and withdrawing from the Framework Convention on Climate Change. And then there are other kinds of options that involve simply getting engaged less in the Paris process and going off and doing other things, like in small groups of countries, actually very much akin to what the George W. Bush administration did after it withdrew from Kyoto.

We don't know. I think it's crucial to emphasize, and this is one of the many things I've learned, we do not know what's actually going to unfold here. And it's very easy to look at this incoming administration and the denialists who are certainly at EPA and some other forces inside the

administration, and imagine that this is an administration hostile to climate policy, and then you can look at other people—Rex Tillerson, currently boss of Exxon Mobil. You look at the appointments at Defense. You look at Treasury, Commerce, and you see folks who are engaged with a wide-range of global issues, know the value of global institutions, and so you can imagine the cabinet meetings and discussions are going to be super-heated on this, and it's very, very difficult to figure out where this process is actually headed.

Almost none of this was part of the campaign. So you have people who have taken power, who see a mandate for change. They see a mandate around the size of the first derivative of policy, if you like, but not the sign. So you see folks who believe they have a mandate for change but this is the most peripheral part of the kind of change that was being asked for. And the reason I mention that is because I think there actually is an opportunity to engage with this administration to try and find reasonable ways of disengaging or living up to campaign promises. Take the one aspect of this that has received quite a lot of attention from the campaign and now the transition period, which is to cancel the funds that are going to go to the GCF, to the climate fund, to cancel the remaining \$2.5 billion. There are a lot of ways to cancel it. You could cancel it and say, you know, I'm taking my money and not giving it to you and we're going to spend it on other stuff at home and goodbye. Or you could do, actually, what the Chinese are doing, which is to spend the money through other mechanisms and so continue to call this a contribution to the process but spend it on mechanisms that are more comfortable and more reliable. And I think this kind of thinking carefully about different ways of disengaging and shifting the engagement on climate change is the real way to engage with and talk with the incoming Trump administration. And I'm actually cautiously optimistic that that kind of conversation is going to find a welcome audience.

What will be the effects if the United States disengages by burning down the house or disengages by becoming engaged in other kinds of mechanisms and so on? I think one of the clear effects is going to be the loss of U.S. leadership. This is one of the areas where the United States has played a major role and the Obama administration has played a major role in creating a set of international institutions that largely reflect U.S. interests and capabilities, and yet a playbook on climate change that is not complete. To me it's instructive to remember that the Paris Agreement, if you look at the length of the Paris Agreement and then you look at the length of the decision that was adopted at the same time that lays out all the things that weren't done in the Paris Agreement, the decision is actually longer than the Paris Agreement itself and lays out a lot of things that need to be done.

Number one on my list of things that need to be done that have not been done as part of the Paris process, number one on that list for me is to build a review mechanism. So Paris is what people call a pledge and review system. Countries pledge to make reductions in emissions and then you review them periodically and then cooperation emerges as you review and learn what the different countries are doing and their experiences with this. Pledge and review in my mind is a very good idea but it requires review. Right now, we have pledges of highly variable quality, the so-called national determined contributions (NDCs), and no review mechanism. Somebody needs to step up to the plate and provide some examples of how review is going to be done. Very interesting examples that came out of the G20 meeting recently when the United States and China both committed themselves to have peer review of their own efforts to remove fossil fuel subsidies or energy subsidies, and there's a lot of different models that could be out there but countries need to be there in a leadership position to demonstrate how the review mechanism is actually going to work.

Some of the other effects, removing the money from the GCF and possibly removing the money all together. It's not a huge amount of money, \$2.5 billion, but it will have an effect on the confidence for other countries involved in this process that the kinds of commitments that are being made to them, especially to the least developed countries, that those commitments are being honored. And if that confidence erodes, I think it's going to be harder to get a lot of other stuff done around the climate change

agenda.

I think it's crucial that we remember that although the effects of withdrawing or moving on parallel processes around climate, I think, will undermine leadership and possibly confidence, other countries are not going to sit still. And in particular, I have been really struck—I've expected and I've been struck by the extent to which the Chinese remain committed to this process. And I expect China to basically, if not provide a leadership role, to backstop and solidify its support around the Paris process.

So, I think that's good news frankly for Paris and the Paris Agreement. The EU is ready to do the same and Norway and a bunch of others. The Chinese role, I think, is the most important. The Indian role, I think, is the most uncertain. But I think we, the United States and Japan, need to ask ourselves is that in our interest to have a very important mechanism that's going to have potentially durable impacts on industrial economies without both our countries, including in particular this country, in some kind of a leadership role. This is geopolitics around energy and climate, and the Chinese role geopolitically is really changing very, very rapidly and we need to deal with that in a serious and constructive way.

The fourth of the five things I want to talk about is about the policy here at home. Most of this meeting is focused on the bilateral relationship and on international climate policy, but I think we do need to have some realistic expectations about what possibly could change at home here in the United States. And some things are going to change clearly, especially if the courts help the EPA by removing some or all of the Clean Power Plan. We're going to see EPA slow walk revisions to the point where the Clean Power Plan is all but dead. Just in the news in the last 24 hours we've seen that EPA has basically given up on the trading rules around the Clean Power Plan. There are a variety of other areas where we won't see new rules and we might actually see under CRA and some other measures some rollback of existing rules. But to me what's really striking is how much won't change because you have the states doing lots of different activities, and to some degree doubling down on those activities. You've got industry. You've got a lot of firms that are in capital-intensive long-lived industries, and global firms. Just because there's a wiggle on the Clean Power Plan or there's a wiggle on other aspects of policy doesn't mean these firms stop doing that they were doing originally. And so you're going to see there's a tremendous amount of momentum related to the product cycle and related to the fact that energy is a capital-intensive business and technology has changed very slowly there.

And that leads to the fifth and last thing I want to say, which is about the trajectory of emissions in the United States. My expectation is that the trajectory that we're on right now will be essentially unaffected by at least the first four years of a Trump presidency. There might be a little more on nuclear power, which would help keep emissions down. There might be a little more on gas that could have kind of marginal effects on emissions. There might be some effort to roll back some fuel economy standards and so on. It might raise emissions a little bit but with a long delay. When you take a step back and look at the whole system, the trajectory is not going to change very much, but this to me is a key point about the U.S.-Japan relationship. In my read of the data, and there are a range of views of this, we are not on track to do 26 percent reduction in emissions, and Japan, I don't believe, is on track to do 26 percent reduction in emissions. It doesn't mean that the United States and Japan are not doing anything. In fact, the marginal cost of what we're doing, I would say especially in Japan, is very, very high.

Our two countries have a tremendous common interest in shifting the debate around climate change, and in the Paris process and other processes, away from people focusing on the numbers, the targets and timetables, and toward people focusing on actual effort—the cost of effort, strategies for reducing the cost of effort, making these mechanisms more cost effective. If we don't shift the debate to that, we are facing a world where we're struggling to work on the climate change topic but not focusing on what really matters, which is the level of effort being made. And this is an area where I think leadership is crucial, where I think our two countries need to find a way. And frankly, Japan needs to help the incoming

Trump administration understand how important it is to be engaged in some way so that the pledge and review systems that are emerging in this area emerge in a way that's focused on real effort and deepening cooperation over time.

Thank you very much.

(Applause)

MR. OIKE: Well, thank you very much for the kind introduction, Dr. Solis.

I think since I was a chief negotiator for Japan on this Paris Agreement, I think I have to bring you a little update. Why Paris was good, why the Paris Agreement was good, and why it was possible.

Shall I just press it to change the page? Okay.

Paris Agreement. I remember the moment when it was adopted. Those three people—the UN Secretary General, French Foreign Minister, and the French President were on the podium. We were on the floor. But I think it was about 3,000 people. Everybody was standing and applauding for how many minutes? I don't know. For a very long period of time. It was a moving moment in many ways after a long and lengthy and money-consuming process. We were finally able to achieve. This kind of achievement was rare honestly in the United Nations. In the last year, the United Nations was super busy. We started with the Sendai Conference on Disaster Risk Reduction and we had the Addis Ababa meeting on development finance. We had the Sustainable Development Goals Summit in New York in September, and finally, this one. I think the United Nations was very successful in the last year. This was the final portion of this.

Now, the attractions of the Paris Agreement are actually written there. First of all, universality. Everybody is there. As I understand it, more than 190 countries have already signed. To be precise, I think it's 192 at the moment. And then more than 110 countries have already ratified this agreement. Again, to be precise, it's 111 at the moment. So the universality is clear.

Now, the second attraction is no bifurcation. This time, by the way, was for me difficult to understand at the outset. Are you familiar with the word "bifurcation"? Yeah, this is simply to say in the Kyoto Agreement, there was a clear division between developed and developing countries. That's no longer the case. And the element which made it possible, as Professor Victor said earlier, it is a pledge and review mechanism. It's called nationally determined contributions. Everybody comes up with their own contributions with their own will. And then make a pledge and you will be under review. But this review has two different meanings. Other countries will look at what you are doing. That's one element of review. The other element of review is every five years you have to review your own commitments with the hope that some kind of improvements are made on your already-made promises.

The third element, you know, the third and fourth elements may not be so conspicuous, but these were one of the determining elements in negotiations. The climate finance. There was talk of 100 billion U.S. dollars' worth of money from developed countries to developing countries, both in private and public spheres. So this was the promise that was made in 2009 in Cancun. And also, GCF, Green Climate Fund. I have a strong personal attachment to this because I had to get a law passed in our parliament to make our contributions possible. This was not an easy process. I'll come back to the point later.

Now, the last element is very important. I'm not sure if, you know, why India was on the board at the last moment. I think this technological cooperation element was the key element for India to come on board. Now, you have Mission Innovation initiative. This is a U.S. initiative to double the R&D expenditures, and we have the Solar Alliance that is the India initiative to make solar a lot more acceptable in the years ahead. And other than these, Germany and France came up with Renewables in

Africa, and later, the United States came up with Power Africa projects. These kind of initiatives were very important in the success of the Paris Agreement. I'll come back to that point later, again.

Well, here, I just want to talk about the realities. I know many of you are already aware that at the time of the Kyoto Protocol, in the end, only the EU, Japan, and other developed countries, meaning not only Australia, Canada, and the others, but also Eastern European countries, including Soviet—at that time Russia already? Maybe the Soviet Union at that time. Anyway, so all those Eastern European countries are included there. So they are bound by the agreement but not the others. This time around everybody is bound. And as you can see, China, U.S., and India, all combined it's 42 percent of the entire emissions of the world. So times have changed a lot.

And then [this](#) is—maybe a bit difficult to see—this is OECD address. But the biggest one is China. It's about eight times more than our emissions, and the U.S. is 5.5 times more than ours. Those are the first-tier countries. And then we have Japan up there, and India is there, Russia is there. Those are the second-tier countries with a lot of emissions. I just wanted to let you know the realities here.

Now, my main presentation is this: why Paris succeeded. And I think this is a very important thing to consider when you talk about the future. First of all, there were some political elements. There was a sense of urgency, and France and Germany played a very important role. I do respect their initiative there. They did quite a lot. And as I understand it, France spent about \$100 million for the entire negotiations, and the entire French government was working on this one, including the president and foreign minister and their energy minister. And again, as Professor Victor said, U.S.-China cooperation played a very important role in terms of removing bifurcation. That is very important.

Now, terrorism, as you might remember, on the 13th of November last year in Paris, there were terrorist attacks. And at one moment, we thought the COP21 could be canceled because it was only a few weeks before the COP21, so we were very much worried about that. But the French government, I think with the support of most of us, decided to go ahead with this one. In the end, on the 30th of November, again, this was another moving moment, on the 30th of November we had heads of state, heads of government from about 150 countries. It was remarkable. I think as far as I remember this—oh, sorry for that—this was the biggest gathering ever attended by heads of state of government. So everybody was there to show solidarity with the French people, and also they wanted to show determination to fight against terrorism. So the momentum was there.

So those are the political elements. But at the same time it was very much a good compromise because everybody got what they wanted. The European Union: leadership and long-term goal—I'm not getting into details. This was a difficult negotiation, but in the end, not just a goal of 2 degrees, but also the goal, aspirational goal of 1.5 percent was also there.

For us, what was important was no bifurcation. The U.S. and Japan, together with some other countries, fought very hard. Sometimes the EU was going towards developing countries on this particular topic, so we tried to get them back on track. So we fought very hard on this one. And also, we had to make sure that China and India are also on the board. That was very important.

Now, China and India, I think they accepted this deal because this is pledge and review, essentially. So they make their own pledge and they had some resistance to international review about their commitments, but nonetheless, in the end, they came to an agreement. Technical cooperation element, as I said, is very important. And island nations, 1.5 degrees and also adaptation finance. And other developing countries, you know, climate finance was very important.

I'm not sure if you believe it or not but last year, throughout all the negotiations—Sendai, Addis Ababa, New York, and here—money was the central issue. Sometimes among our negotiators we were

saying the developing countries seem to consider ourselves as a cash dispenser. With all climate or development, whatever it is, or disaster risk reductions, whatever it is, they always participated in meetings and said we need more money. Throughout last year that was an issue. So the climate finance is there and that is one of the most important reasons why this agreement was possible.

Now, I seem to have only two minutes left. So, well, you know, these are the commitments of major countries but I'm not getting into this. This is what we are doing just for a short period of time. We are trying to reduce our gas emissions substantially, 26 percent, and as a result of it, there will be a reduction of 40 percent in per GDP basis, and a 20 percent reduction on a per person basis. In the end, Japan will be there in the middle [8.9 tons of CO₂ emissions per person]. We are slightly less than the EU but better than many other countries. The U.S. figure, 15, is actually 2025. So it's likely to be about 13.3 in 2030. Similarly, this is per GDP basis. We are one of the best [in 2030, Japan is estimated to be at 0.16 kilograms of CO₂ emissions per GDP unit], and the U.S. is there with 0.27 percent, but this is, again, 2025. So it will be something like 0.23 or so in the year 2030 if the current trajectory is not damaged.

Now, finally, GCF. Professor Victor was talking about the U.S.-Japan cooperation. This is clearly one of them. I think in November of last year, in the margins of the G20 Summit meeting, President Obama and our prime minister jointly announced that we are going to make a contribution—the U.S. was going to make contributions of, this is 3 billion, 30 hundred million. And then we are going to—we made a commitment to 1.5 billion U.S. dollars. This was a joint initiative, which is in fact 45 percent of the Green Climate Fund. So we did it together.

And in a similar way, on the climate finance, talking about the \$100 billion thing, we pledged to shoulder something like \$12 billion, both private and public. And then what we are doing is shown there in two, that we are doing a joint thermal project, urban/rural disaster risk reduction, early warning system, water supply. Those are the kinds of projects that we are doing here.

Finally, we have joint credit mechanisms with 16 developing countries. If you are interested, I'll explain that to you but I'm running out of time. So I'm not going to do it now. But in short, Paris is a gigantic enterprise. It's a very complicated enterprise with a lot of elements, and in much of it we fought together with the United States. I can say that because we are in constant consultations with the American counterparts. So as a chief negotiator, this was one of those main topics for U.S.-Japan cooperation. We need something like that. We need something like that. This is not the only one. In my area of responsibility, we also had some development issues, international health. Yes, we did have some areas where we worked together. But our alliance is not just a military or political thing. It is a lot wider than that, and global issues should be one of those areas where we have to continue working together.

Thank you very much.

(Applause.)

DR. YOSHIDA: Good afternoon, everyone.

I think what I would have said a couple of months ago is probably a little different than what I'll talk about today. I was asked to, like my cohorts, talk a little bit about the Paris Agreement's effect on the U.S. I think the one word to keep in mind as we've heard perhaps a little bit from our other speakers is uncertainty. All is uncertain. We don't know what the U.S. climate policy or U.S. energy policy is going to be.

But with that in mind, I think there are certain things that we have to put into play, some of which we've already heard today, that will affect how the United States, if not the U.S. government, reacts to Paris and moves forward. First, and we heard this a little bit already, Paris wasn't only about government-

to-government cooperation anymore. There was much more of an emphasis on practices, best practices and capacity building. Actions were also put forward by 50,000 people who attended, a huge number, at the city level, the NGO level, and the state level. So a lot of non-state actors made it clear that they were going to go ahead and take things on their own. Even Exxon Mobil, our new incoming secretary of state perhaps, called the Paris Agreement an important step forward by world governments in addressing the serious risks of climate change. So I think the whole business community out there, many feel that it really still is in their interest to be sustainable and take actions.

A letter was just sent, I think in the last week, from a group of cities in Europe urging their U.S. counterparts at the city level to keep up their activities. Carbon Neutral Cities Alliance. And as we just heard, the Kyoto Accord, I think, brought a lot of negative feelings in the U.S. because it wasn't universal. Paris now is universal. Everyone is partaking and playing. So when perhaps that becomes a better awareness of that happens in the U.S.—I don't think everyone in the U.S. has really realized the big differences between Paris and Kyoto.

Having been at the Department of Energy, we again heard a lot about technology and technology innovation. Really starting with something called the Clean Energy Ministerial and some joint efforts, bilateral efforts, that were put together while I was there as deputy assistant secretary. Bilateral efforts with China in clean energy, bilateral efforts with India in clean energy, some bilateral efforts with Indonesia in clean energy, et cetera. We really were starting to move away from really just looking at the climate accord and the numbers to see what is it practical that we can do together? What is it in terms of technology that we're going to probably work on anyway or that we should probably work on anyway to move forward?

So Mission Innovation really is another tier that came out of that. We pledged to double R&D. The U.S. Department of Energy, which spends the most in the U.S. on clean energy R&D, and the government spends about probably \$5 billion, give or take what one includes. The fact is that during the latest Bush administration, I was at the Department of Energy and we actually were spending more R&D money on clean energy than any other country in the world. There are ways to spend that money and look at it not just as climate but look at how it contributes to economic growth, look at how it pushes your high-tech industries. And as we said before, I think, it's not just U.S. government R&D, but it's also, if you look at Bill Gates and his announcement in conjunction with Mission Innovation with a breakthrough coalition, it's also really looking at that private R&D that needs to be done and the investments that needed to come that are far beyond the reach of any of the governments who were there.

We hear that perhaps China will maybe pick up the mantle and run with it. I actually agree with that. I am not sure China totally signed on to the Paris Accord totally for climate reasons. I think it partly, if not mostly, signed on because they really see clean energy as a new high-tech industry in which they want to be the global leaders. They want to reap the benefits of economic growth in things from leading in that industry.

Others, including India, face issues with pollution, with energy security. Again, the activities that we undertook under the Bush administration and under the Obama administration in those two areas really are almost the same as what we did for climate. So U.S. companies, I think, will want to be part of that global market. And if the U.S. government and others don't stand up and really support that, I worry about long-term U.S. competitiveness.

But that said, I think states, we've all seen the various things that Governor Brown has said in the last—from California—has said in the last couple of weeks. We all want to be a part of that \$285.9 billion renewables market that we see coming this year.

Another point that we have to keep in mind is there are estimates I've seen that there will be 145 million refugees in the world with a one-meter sea rise. I think as a major power in the world, the U.S. will be forced to do something with that. The emphasis might be on resilience, energy, disaster mitigation. But again, it all sort of feeds back into building a low carbon economy.

So the biggest question really is, is there enough momentum in the world without the United States to keep the process after Paris moving along? I would argue that there hopefully is. We heard perhaps, you know, whether it's Merkel or Xi or Abe, you know, will hopefully pick up this leadership mantle and push with it. I think there are a lot of people, like Governor Brown at the state level, who, for the U.S., will keep pushing for a lot of the low carbon advances that we see. And I think just realistically, in terms of economic growth, in terms of technological competitiveness, it's very difficult or it would be very difficult for the U.S. to really maintain our edge and that lead in the race, be it a race or a friendly competition, with China, Japan, and others if we don't invest.

And lastly, I think, again, as we heard earlier, there are some things in the U.S. energy market, some processes under way that will keep going. I don't think we're going to see coal make a major comeback. Gas is too cheap. One can argue that at least for the U.S. markets, solar and wind are now market competitive and are getting even more so. We have a much bigger understanding among companies, universities, and others that energy efficiency isn't just about cutting energy use but it's about increasing the productivity of your company, saving money, making money.

Less momentum. I think what we need to watch out for is that I don't see a total replacement for U.S. technological innovation. Japan can pick up to some degree, the EU to some degree. Our national lab systems, I'm sure there are scientists who will keep doing what they can, but I think that investment that we've made, we need to keep an eye on and encourage the incoming administration to keep those investments going. Again, for economic growth, for environmental reasons, not just—it's not just a climate issue.

Coal is going to be used in Asia. We've heard a lot about coal during the U.S. election. And perhaps there's a hope that maybe some of that R&D money will go into things like carbon capture, utilization, and sequestration to make that coal use cleaner. I know Japan certainly is pushing for cleaner coal use but I don't know without the U.S. presence whether they will be as successful as they would be if we joined together in making sure new coal investments are as clean as possible.

So opportunities for U.S.-Japan collaboration. Technological innovation, I think, is still an area where both of our countries excel in the world. So clean energy, work towards energy resilience. Japan still needs to resolve its energy mix question after Fukushima, so there are certainly areas for us to collaborate still in nuclear energy, in renewables, et cetera.

Capacity building together. How does one build energy resilience in developing countries? We see huge storms, bigger storms than we've seen in the past, coming in. At least when I was at DOE and chairing our APEC energy working group, that was a big issue on everyone's mind. How do we build energy resilience? And building energy resilience in your electricity and other systems actually often means renewables, distributed energy, et cetera, many of the things that we look for in a low carbon growth.

And lastly, I think there is a lot of room for us to cooperate together in cybersecurity for the energy system. Cybersecurity for smaller grids, et cetera. That's something that we all have to do a lot better at, because if we are going to have this huge transformation in energy technology and in our energy economies while we look at the Internet of things, et cetera, sort of taking off, we need to be able to make sure that we can protect that environment.

So technology, capacity building, and cybersecurity smart grid are areas that I see we can work on more together. Thank you.

(Applause.)

DR. KURAMOCHI: While uploading, I just want to introduce myself. I'm Takeshi Kuramochi from NewClimate Institute located in Cologne, Germany. First of all, I would like to thank Mireya-san and the Brookings Institution for having me here together with the distinguished experts sitting here today.

Today, I'm going to present the implications of the Paris Agreement on Japan's climate policy more from a technical perspective compared to the previous presenters.

So firstly, I would like to just go quickly through Japan's current climate mitigation policies. So Japan has placed the nationally determined contributions (NDC) to reduce its GH (greenhouse gas) emissions by 26 percent from 2013 levels, which is around 25 percent from 2005. And that's now enshrined legally under the Plan for Global Warming Countermeasures. It's a legally binding document for the NDC implementation.

And with regard to recent energy and climate policy developments—well, I will touch upon the feed-in tariff and other policies later, but in the last two years Japan has developed the new Basic Energy Plan and the related Long-term Energy Demand and Supply Outlook, which became the basis for the NDC formulation. And also, on nonenergy-related emissions, Japan has introduced a law on the F-gas control, which is relatively stringent.

And under the Paris Agreement, countries are encouraged to submit a long-term decarbonization strategy. The U.S. has submitted during the Marrakesh COP. Japan hasn't done it yet but the two ministries, METI and the Ministry of the Environment, have set up, independently, advisory councils. And now they're developing their own drafts and then they will combine it and then develop—submit the documents sometime next year.

I guess you're all interested in what's happening with Japan's power sector before and after Fukushima, so I'm here presenting what has happened, together with the 2030 plan describing the INDC documents. So since Fukushima, the electricity demand has continually been decreasing compared to 2010. 2015 total power generation is about 10 percent lower and it seems like this trend will continue for the next several years, at least. And when you look at the breakdown of the power generation, obviously, nuclear power has reduced from around 25 percent before Fukushima to almost zero. And that gap has mostly been filled by fossils. And when it comes to coal power, post-Fukushima, they used the existing hibernating coal power plants to fill in the gap, but now they have about 18 gigawatts of new power plant construction plants. And if they all come into the gig, then in 2030, the coal power share will be above 30 percent or so.

And at the same time, nuclear power—existing nuclear reactors has applied for a restart and now it amounts up to 25. Apparently, at this moment I think three reactors are in operation. And if all 25 would restart, then by 2030 these reactors will supply about 16 to 17 percent of total power generation in 2030.

And you can also see that renewable energy growth has been quite strong after Fukushima, partly thanks to the feed-in tariffs scheme, particularly for the solar PV technology. And when you compare all these recent developments with the 2030 planned electricity mix, it's really uncertain whether the country is really going towards the direction that is planned. It is very uncertain. However, you can say that under current policies, the fossil fuel power generation will remain the major electricity generation source.

At NewClimate Institute, together with other research organizations, we're running a Climate

Action Tracker project. We've been tracking national-level mitigation efforts since 2009, and we just recently updated the analysis for Marrakesh COP. And here you can see for Japan the NDC target for 2030. Compared to the global 2-degree goal, the ambition level is not sufficient, meaning that Japan should set targets that are more ambitious than 26 percent. And also, when you look at the currently implemented climate and energy policies, the set of policies would not take Japan to the 26 percent reduction. So Japan would also have to implement more policies or strengthen existing policies to meet the current NDC targets.

Japan is not the only one country. Obviously, most of the countries around the world are not doing enough. This is a figure from the 2016 Emissions Gap Report. So when you look at the INDC scenario in comparison with 2-degree compatible pathway, or 1.5-degree pathway as laid out in the Paris Agreement, the emissions gap in 2030 is above 12 gigatons, which is more than the total emissions from China today, so you can understand the magnitude of that gap. So a lot has to be done.

So what are the implications of well below 2 degrees, which is the word used in the Paris Agreement, on developed countries? There aren't that many studies, especially like modeling studies, scenario studies, on well below 2 degrees, or 1.5 degrees, but based on a limited number of literature, we made an estimate on more or less at which timeframe the OECD countries would have to reach zero emissions for different emissions categories.

So for energy industry CO2 emissions, the net zero emissions have to be achieved by around 2050, and the full decarbonization of electricity has to be achieved even earlier, around 2040 or so. And before that, coal power has to phase out. That's what the models indicate. And this is an enormous challenge. I'm not going to discuss here whether it's possible or not but it's an enormous challenge for sure.

And if we want to stay on the Paris Agreement compatible emissions pathway, we need to implement strong policies well beyond energy efficiency improvement and addressing the low hanging fruit or low cost mitigation measures. And that would include not only negative emissions technologies, but also the policy has to look into maximization of resource efficiency and also reducing the energy service demand. So if we really are to be on track on the Paris Agreement goals, probably I won't be able to travel from Cologne to Washington, D.C., just for a one-day event. That would not be acceptable.

Here I'm showing an example of sector transformation that will be required to achieve Paris goals. This is an example of adoption of electric vehicles. We did an analysis for the Netherlands and we looked into, basically, OECD countries. And as you can see, almost all new passenger vehicle sales have to be electric vehicles or other sort of zero emissions vehicles before 2040. And in case of the Netherlands, none of the advanced scenarios that the governments and other organizations developed are anywhere close to that. And achieving 100 percent EVs or low emissions vehicles by 2040 requires diffusion of EVs at unprecedented speed. It's way faster than how much the diesel vehicles were adopted in the EU in the late 1990s, and it's way beyond Japan's current target on next generation vehicles for 2030. So again, it's an enormous challenge that we're facing.

However, when you look at—well, this is a particular case for the transport sector or the passenger vehicles, there are signs that changes are already starting to happen. So when you look at Norway, almost 30 percent of the new car registrations this year are electric vehicles. Well, it's a small country and it's a very specific case, but nonetheless, it's quite interesting. And also in the Netherlands and Germany, there were political actions to phase out conventional combustion engine cars by 2030 or 2035. Of course, it's not always the binding targets or policy, but nonetheless, the development is quite interesting. And also, for Japan, the government hasn't set any new target beyond what's written in the 2014 Basic Energy Plan, but Toyota just recently announced that they will mass produce electric vehicles, and I think this is a new development since Toyota has always focused more on the fuel cell vehicles. So

this is also something interesting to see.

This is my last slide of the presentation. So to summarize, basically, we are facing enormous challenges to stay on track for Paris Agreement goals. For energy and industry CO2 emissions we have to reach net zero before 2050. And if you really want to achieve that, conventional energy policies and the conventional analysis to marginal abatement costs, these economic assessments are just not enough. We have to go well beyond that and we have to look into resource efficiency. We have to look into changes of our way of life—lifestyle; all these different aspects of our economy have to be taken into account. And lastly, in some sectors, like I showed with the transport sector, changes are already happening. And as a high-tech powerhouse, Japan can potentially lead that change together with the U.S.

Thank you very much.

(Applause.)

DR. SOLIS: Okay. So we're going to move on to a discussion, a conversation among the panelists and also to bring the audience with questions. And you know, I appreciate very much all the presentations. They were really on target and excellent. And it's a challenging time to be talking about energy and climate policy because, you know, I'm sure that you've all attended a number of panels in town and there's one word that keeps repeating itself and that is uncertainty. And I have to say that after the presentations, despite the fact that there's a lot of uncertainty on very fundamental questions as to what will the United States do vis-à-vis Paris? Will it be the nuclear option? Will it be disengagement? We don't even know exactly how that would work out.

I came out of these presentations with some level of optimism until I listened to some of the scenarios that Kuramochi-san was discussing. Optimism, why? Because I think that we heard from the presentations that many other countries remain undeterred and are prepared to continue reducing emissions, continue with a commitment to the Paris Agreement, but also because we heard that market trends, private sector investment strategies are already taking many of these industries towards the path of clean energy.

But I would still like to probe on these questions, and to ask you to go deeper and to interact with one another. First, at the international level, as to what may be the reaction from other countries if indeed there is an exit from the United States, if the United States abdicates leadership. And on two specific issues. I thought it was very interesting, David, what you mentioned about the Paris Agreement or the climate change regime as under construction. We have not yet put all the pieces together. We have the pledge part but we don't have the review part, and that's actually fundamental to ultimate success. So who is going to deliver on the review part if the United States does not play its traditional leadership role?

We also heard, Oike-san, about the importance of the GCF, how it was the focal point of negotiations making sure that the funding was there so developing countries could also make progress in their emissions reduction targets. Well, what happens if the United States is not there to provide the funds that we all had assumed would be there? So if you can sort of address one another on what are your expectations of the international response and the future of the climate change regime if the United States abdicates its leadership?

So, whoever wants to go first.

MR. OIKE: Well, I was a negotiator so I can't think of a situation where the United States disappears. But --

DR. VICTOR: I'm grateful that we're not going to disappear.

MR. OIKE: Whatever happens, I don't think the Paris Agreement—as I said earlier, the Paris Agreement is so comprehensive, I think we have already passed the point of no return. So even if the United States withdraws this time around, this is not going to lead to the demise of the entire structure of the Paris Agreement. That will be there.

Who is going to lead the process? In terms of political leadership, unless the elections next year prove to be otherwise, the European countries, the EU will continue its initiative, and we will, of course, be a part of it. People are talking about China. China has their own reasons why they need to keep this agreement alive, so I think they will be there. India is very much for the technological innovation, so I'm sure they will be there. So collectively, countries will provide leadership. That's what I believe.

DR. SOLIS: Okay.

DR. VICTOR: And first, let me apologize. I'm not just trying to strike a relaxed California attitude about our conversation. I threw out my back on Saturday morning and there's no amount of Vicodin in the world that will make it possible to sit upright. So I apologize for relaxing.

I agree with that assessment. I think it really depends on how they exit. If they exit by disengaging a bit, spending some money on bilateral programs, and calling it their contribution and doing other things in small groups that that's actually not going to be so toxic to the Paris process. It might actually be helpful in some regards by creating some mechanisms where other ideas are experimented with. And you know, one way to think about this is this is an experimentalist regime. They don't know what works. We have lots of countries that are in various ways are trying to do things but they don't know which mechanisms are actually going to function. And so I don't know if that's the most likely scenario but I think the Trump administration is going to learn very quickly that other countries want this thing to work. So it really depends a lot on how we leave, to raise in a different context what Clinton might have said decades earlier, it depends on what you mean by the word "leave."

But I guess the other thing I'll say is I appreciate the scenarios about what might happen on Japanese energy policy. When we take a step back from this, the whole world is not on track to meet 2 degrees or well below 2 degrees. I mean, there's just—there is essentially no scenario on this planet by which we meet those ambitious goals. And so I think the entire world community needs to grapple—will start to need to grapple the fact that some things that were crucial to get some countries to agree in Paris are in fact not going to be feasible. And one of them is going to be the long-term target, and so there's a really difficult conversation that's going to have to happen about what are realistic goals. It doesn't need to happen immediately but that's something overdue, and that's regardless of what the Trump administration does.

DR. SOLIS: Great. Other comments?

DR. YOSHIDA: Just to build upon what you just said, I really like the word "momentum." And I think there is momentum to keep a lot of these pieces going, especially at the NGO, city-to-city, state-to-state, et cetera, level. But I worry a little bit when we come to that five-year point where we're supposed to come up with perhaps what was thought to be stronger INDCs and change, you know, make our commitments stronger so that we could actually reach perhaps these goals that we're not on target to reach now. If the U.S. isn't there, I am not sure quite how that happens. And certainly on the technology side, we played a very big role in working with other countries on their INDCs and on clean energy. And if that goes down too much I also would worry, not just about U.S. competitiveness in this very high-tech, increasingly high-tech technologies, but also just, again, putting something forward to keep the momentum moving between—for those countries who maybe quite don't have the resources to do it even if they want to.

DR. SOLIS: Kuramochi-san?

DR. KURAMOCHI: Yeah. I agree with Oike-san that that the world has already gone beyond the point of no return. So even if the U.S. pulls out of the Paris Agreement, I think the world will move forward. However, there will be some countries, or certain sectors in certain countries that would think, okay, the U.S. is not taking action so why should we? And that can also happen in Japan.

DR. SOLIS: So I was talking about the optimistic message that I heard from your presentations, but I also want to address the pessimistic message that was also part of the conversation. And you know, it has to do with how unrealistic the target goals are, and I think Kuramochi-san also in his presentation repeatedly showed us what a tremendous effort we would need to do, not only Japan and the United States, but all of the countries in order to get us on track to meet the Paris emissions targets.

And, David, I was struck by an observation you made, and I wonder if you can flesh it out and have others react to that, that instead of looking at numbers, we should look at the level of effort. So how would that become a U.S.-Japan dialogue? If you can walk us through some of the discussions that that would open.

DR. VICTOR: Well, this is precisely why leadership is needed on the review process. So when we look closely at the review process, the first review process after five years, there actually won't already be enough data to be able to know whether countries are implementing their policies. And so the first round is going to be kind of like a fake review process, if you like, where it's going to be more procedural than actually substantive. But this is precisely why we need countries to go out and show how it's done because there's no scenario by which 190 countries are going to agree under consensus decision-making rules. You know this having been in the room. You know, you're not going to get consensus around things that are very complicated and difficult where there are going to be some significant number of countries that don't want the mechanism to work, that don't want the mechanism to be intrusive. Can you imagine Saudi Arabia or Russia or others agreeing to a formal intrusive review system? That might happen eventually, but it needs to start with demonstration.

And I think this is a pledge and review system where countries are pledging right now to make their best efforts, and I'm worried that if we don't have leadership around the review mechanism, we're actually not going to know very much about the actual level of effort. And I would think that's in our interest. I think it might even be to a greater degree in Japan's interest because at the margin, the Japanese program is actually—for emissions reduction with the feed-in tariffs and so on and I think optimistic assumptions about the nuclear restart—it is a very, very expensive program. And if you're worried about industrial competitiveness, you've got to really focus on how do we make our emissions reductions in a way that's cost effective and start to link together the different economies. And unless you have a mechanism that reveals that information you won't be able to get there.

DR. SOLIS: Other comments?

DR. YOSHIDA: I would just totally agree. We've looked under the G20. You mentioned, I think it was you who mentioned that the U.S. and China are looking at—are in the process of reviewing getting rid of fossil fuel subsidies. Well, the negotiation process to get that underway and up and running took over a year or more and is still not as robust as it probably could be. So having leadership still pushing on that review process is very important.

DR. SOLIS: Great. Oike-san?

MR. OIKE: I just want to make three individual points. The first point is our problems essentially I think are in the area of nuclear power generation. We used to have 54 reactors and then we lost six in Fukushima. That's 48. But we have restarted operations only in three. So it takes time. It's not very easy.

So the nuclear power generation component is perhaps the biggest challenge we have to face. That's number one.

The second thing is the area of cooperation between U.S. and Japan should be technological innovation. As many others said, this is an area where we can work together regardless of what happens to the Paris Agreement itself. On the other hand, technological investment has to come with some kind of finance. And the beauty of the Paris Agreement is that we have China and India onboard. They are lured to this agreement mainly because of the technological elements. So we have to keep that, and for that we need some finance. So the U.S.'s possible withdrawal from the Green Climate Fund is very damaging. I'm more concerned about the symbolic elements coming from the U.S. withdrawal from international finances.

DR. SOLIS: Great. So let me then bring the audience. There's going to be a microphone. Please wait for me to identify you and then the microphone will come to you. And if you can say who you are and ask a concise question.

We'll start with this gentleman.

QUESTION: Hi. Alan Lobe, attorney in Washington. So one of the things I see here, it reminds me of the Clean Air Act, which I worked on in the U.S. at one time. And there's momentum until the day that there isn't. So at the point you get bogged down, you ask yourself what do you do then? Well, the Clean Air Act was designed intentionally to have backstop mechanisms, so that if there was some sort of obstacle at some point, there was some other provision in there to drive things forward despite the resistance that might have appeared.

And so one of the things that makes me wonder is, you know, if you—well, there's a quote by Mark Twain, "If you put all your eggs in one basket, guard that basket." So in this case, we can guard the basket but the Clean Air Act example says that might not be good enough. So one suggestion would be to have as a backstop mechanism, a universal carbon tax that all countries agree to. And so if somebody is a recalcitrant country and doesn't meet their obligations and starts tempting people with, you know, with -- I'm bogging down myself, actually -- that people can gather together and say, okay, well, everybody else adopted a tax and this is a trade advantage, we're going to impose the tax on them that they haven't imposed on themselves. What about that as a backstop mechanism?

DR. SOLIS: Thank you. Go ahead.

DR. VICTOR: There are—I mean, as just a blunt statement of life in international politics—there are very few real backstop mechanisms in foreign affairs the way there are in domestic law. So I think that's a reality.

I actually don't think that we are with such momentum that we are beyond the point of no return. I think -- I don't see us going back to the earlier days where there was kind of nothing going on, but I could see the system, if the U.S. exits badly and other countries don't lead, the system going into a kind of stasis.

I'm intrigued by -- my economics training tells me to love the idea of a universal carbon tax. I love tax -- I can't say I love tax measures because now I'm unelectable, but I'm probably unelectable for other reasons as well. But the problem with that is it requires countries to agree. And we know that they're not going to agree.

There's been -- I frankly am very intrigued by the idea of using trade measures. There's been a lot of work in the trade law community that broadly suggests that you could design trade and counter measures, trade border measures, in a way that would be WTO compatible and could create an incentive

for countries to do something. I don't think we're anywhere near there yet, but that looks intriguing. But it requires enough countries who are willing to implement that and threaten that measure, and those are not easy measures to threaten because the countermeasure then is potentially ugly. And so I think -- I think actually there's still a lot of risks for the Paris process right now.

DR. SOLIS: Okay. This gentleman in the front?

QUESTION: Thank you very much. I'm a member of the UNESCO Task Force and we started this year to upgrade the task force with the objective to enable local communities to manage both cultural capital and natural capital in an integrated matter, whether it's (inaudible) developing countries. My first question is how do you relate the Paris Agreement with sustainment development goals? Could you elaborate very quickly? Are they reinforcing each other? I attended the Annual Meeting at the World Bank in the fall. It did not appear clearly that it is really feasible to sustain the development goals, but everyone was talking about the connection between the Parish Agreement and Sustainable Development Goals.

Second, in the United States, the federal government cannot do that much because the states are in charge of regulation and so on. Japan is quite advanced in many technologies. Suggestion, why don't you join a new project like (inaudible) so many countries, communities, and you offer a unique contribution -- knowledge, experience, technology from the United States, experience from Japan -- and try to address some critical issues very quickly and not talking about bureaucratic, political? Because the European Union is much weaker. The last two months, the European Union lost the capacity to ask the countries, the members' countries to move forward. The same is going on in France, pending elections, in Germany. So the U.S. -- and I challenge you, U.S. and Japan, get along together, implement what you can do and you can do a lot. And forget discussing too much about global agreements. Thank you.

DR. SOLIS: All right. So any comments?

MR. OIKE: Yeah, two things. Sustainable development -- the relation between climate change and sustainable development. Sustainable Development Goals have 17 pillars and one of them is environment. And in environment we have climate change. So the link is very clear. And climate change after all is for the sustainable development, so the links are very clear.

On the second issue, yes, I think Europeans are very much in trouble. This was more or less expected in a way. But individual country like -- if the government doesn't change, France and Germany anyway will continue their initiatives. By the way, GCF was meant to be the mechanism that you were talking about. GCF is an international financial institution, but nonetheless, it was meant to be very flexible in terms of finance. They can do all sorts of different activities involving private companies, so I think the best methodology is to make use of a GCF. But I have to say that I was a member of the board there and you probably know that board meetings can be very rough. Very rough. But nonetheless, GCF can play a very important role in coming up with new ways of finance.

DR. SOLIS: Kuramochi-san?

DR. KURAMOCHI: Yeah, between SDGs and the Paris Agreement goals. So there is now emerging literature, there's one chapter in the UN Emissions Gap Report this year and also some other research organizations doing the modeling analysis, and they're not always compatible or reinforcing each other. For example, when you want to stay on the Paris Agreement track, the 1.5 degrees are well below 2 degrees, you have to have this biomass -- bioenergy combined with carbon capture storage technology and that would require a huge amount of bioenergy. And that can compete with food production and there will be a conflict with food security, for example.

DR. VICTOR: That will require magical thinking. Yes.

DR. SOLIS: Very interesting. Other comments or should we take more questions?

Other questions from the audience? No?

Well, if there are no more questions, I think I want to thank all the panelists. This has been a really fascinating discussion, a lot coming. We need to be watching closely developments, and thank you for sharing your expertise today. Thank you for coming.

(Applause.)

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