

TRANSCRIPT
TOWARD A LOW CARBON SOCIETY: CLIMATE CHANGE AS A
TRANSATLANTIC CHALLENGE
Saturday March 15, 2008

Welcome: **Mr. Craig Kennedy**, President, The German Marshall Fund of the United States

Discussants: **H.E. Anders Fogh Rasmussen**, Prime Minister, Denmark
Mr. Jim Rogers, CEO, Duke Energy
Dr. James Steinberg, Dean Lyndon B. Johnson School of Public Affairs, University of Texas

Moderator: **Ms. Katrin Mueller-Walde**, Journalist, German Television ZDF

CRAIG KENNEDY: We are going to be making some -- a few changes including in the next panel. There was a terrific effort to have a great delegation here, you just can't work against the odds some time. So, one of the issues, as I mentioned last night, that many people urged us to put much more to the forefront is climate change. And today, we have a really terrific panel and let me start by introducing the moderator, Katrin Mueller-Walde, who is one of the key people at ZDF Television in Germany, one of their major anchors, and she has agreed very kindly to moderate this session. Katrin?

KATRIN MUELLER-WALDE: Craig, thank you very much for these friendly words. Thank you for the introduction. Ladies and gentlemen, I am really happy to see such a great number this morning. Yesterday, it was an interesting day and it was a long day, especially for those who came over from the United States. You already heard it; we have to change our program a little, but I think you will have an interesting discussion this morning because we have a great panel. We added a new panelist and I have the great pleasure to introduce to you one of the best foreign policy experts in Democratic Party, Jim Steinberg, and I would like to invite you to pose questions. That is a good tradition here; you are always invited to pose questions and to make quick interventions. And because of that, I would like to start out very quickly and to begin with our panel discussion that is about climate change as a transatlantic challenge. And my first question, this is not a surprise, will go to Anders Fogh Rasmussen.

As a Prime Minister of Denmark, you will be the host of the 2009 United Nations Climate Conference and in your capital in Copenhagen, the next global treaty is supposed to be negotiated. And from point of view, the transatlantic partners haven't been able to agree on much during the last years. So, what kind of contribution does the transatlantic community has to make in order to -- for a conference to be a success, and then also for a treaty to be finalized. And I am posing that question facing the results of the EU leaders



meeting this week. So, maybe you can tell us a little bit more what was going on there this week and how do you want to manage that all till 2009?

ANDERS FOGH RASMUSSEN: Thank you very much. First of all, I think it is important to stress that we need a strong transatlantic corporation to ensure a comprehensive global climate agreement in 2009. On the European side, we have decided to show the good examples, so to speak, by setting very ambitious targets for the reduction of greenhouse gas emissions and the development of renewable energy. We decided on these targets last year and we have decided that the European Union will unilaterally be prepared to reduce the greenhouse gas emissions equivalent to 20 percent. And in the context of a global agreement, we will be prepared to reduce the emissions by 30 percent.

And I have been informed that the media today or at least some of them report that we have stepped back from these targets at our meeting yesterday. That is not the truth. On the contrary, we confirmed the targets. Of course, we have discussed instruments, ways and means to achieve the targets, but I would like to stress we stick to the targets, and that is our approach, binding targets for reductions in emissions.

On the American side, we need a strong American leadership in our endeavors to take all major emitters on board in a comprehensive global climate agreement. We need the United States as a part of an agreement because the United States is by far the largest emitter in the world. We also know that a prerequisite for taking the United States on board is that China and India will participate in the global agreement. And for China and India, it is essential that the United States participates in a global agreement. This is the reason why we appreciate the American major economies initiative where the 15 biggest economies in the world gather in an attempt to agree on certain elements in a global agreement.

And to be more specific, I do hope that the major economies could agree on a long-term target for reduction of greenhouse gas emissions, for instance, a 50 percent reduction in greenhouse gas emissions by 2050. If the major economies could agree on that, it would be a valuable input to a global agreement in Copenhagen. And then of course, we have to set intermediate targets, find cost efficient market oriented instruments and so on, but we need American leadership in that respect. So, both the American side and the European side have responsibilities to ensure a global agreement in Copenhagen in 2009.

MUELLER-WALDE: Just on that, what do you think, is it possible to get the U.S. administration -- the next administration on board to such a treaty?

JIM STEINBERG: We have been talking a lot over the last day or so about the uncertainties about the political situation in the United States. But, one thing that is almost certain right now is that we are going to have a President who believes that we need to take this problem seriously. Senator McCain has been a leader on this issue. Both Senator Clinton and Senator Obama have staked out very strong positions on this. And so, at least

in principle, we are going to have a very different attitude irrespective of who gets elected. So, in terms of getting engaged and recognizing that the United States does have to play a leadership role, as the Prime Minister said, I think there is going to be a sea change and I think the politics of the United States has changed dramatically in the last couple of years. You are seeing these remarkable coalitions between environmental groups and business to try to find sensible solutions that can provide a predictable future for American firms.

So, as a sort of a general orientation, I think we can be optimistic. The problem with climate is it is enormously complicated. The devil is in the details and going from the kind of indicative agreements that the Prime Minister talked about sort of a general target is one thing. But, actually enacting the kind of legislation or adopting a treaty that will implement it is a more challenging prospect.

MUELLER-WALDE: Thank you for the moment. Jim Rogers, in a recent, on one of those articles I read in preparing of this panel discussion, I read a very nice expression, you are called a great American paradox, and I think I have to explain it a little. You lead Duke Energy, a company that supplies four million U.S. customers with electricity, and I think another important figure is 70 percent of Duke's power is generated in coal power plants. Your company is one of the biggest CO2 emitters within the United States. But, on the other hand, at the same time, you are a leading member of the U.S. Climate Action Partnership, an association of major U.S. companies like DuPont or General Electric or Alcoa, which promote the idea of strong federal legislation. Could you please explain to other companies where the advantages are for you to support a policy that goes for a reduction of greenhouse emissions?

JIM ROGERS: I think probably the best starting point for me is to really define the carbon footprint of our company a little more because it is in that context that we have developed actions and plans going forward. There are three numbers that are important for you all to understand about our company, and the three numbers are 3, 12, and 41. Of all the companies in the United States, we are the 3rd largest emitter of CO2. Of all the companies in the world, we are the 12th largest emitter of CO2, and if we were a country, of the 192 in the United Nations, we would rank 41st. I share that with you not to brag, I share that with you to let you know how daunting the assignment is for us to address this issue, and at the same time, provide affordable reliable electricity to our customers as their demand grows in the future.

But, recognizing that is a problem. I have come to a place where I listen to the scientists and actually Saturday morning a week ago, I had breakfast with James Lovelock who wrote *The Revenge of Gaia* who has a very pessimistic view in terms of where we are and going forward, and that's another conversation. But, I believe that we need to act now because it took us 100 years to get here, it is going to take us many decades to move forward and that we need to take action now.



One of the reasons that we were a founding member is USCAP, and USCAP is a unique thing in America because you take major corporations in America like GE, like DuPont, like Alcoa, our company and many others joined together with four major NGOs and called for 60 percent to 80 percent cuts in CO2 by 2050, and said that the government should act now. And I think it is unique to see corporations and NGOs moving ahead of the government. So, I think all the legislative action that happened last year in part was a consequence of that tipping point and that call for action within the United States.

MUELLER-WALDE: Have you always been an advocate for tougher climate policy, did you have some sort of conversion moment?

ROGERS: The epiphany? No. I think what happened is I slowly got up on the learning curve and it really goes -- really back to early in my career, shortly after I became a CEO back in '88 and I had to address the issue of sulfur dioxide because we own so many coal plants. And actually, that was the first legislation back in 1990, actually adopted cap-and-trade which became kind of the cap-and-trade approach which we support now on a nationwide basis. But I think over time, as I learn more about it, and actually a lot of my learning came almost a decade ago as -- because I have been attending the World Economic Forum, I have started listening to the debates here in Europe, and then as I learn more and more about the issue because the debates here were more sophisticated, more advanced than debates we were having in the U.S. As a consequence of that, I started learning about it and it gave me a little head start of the issue where we started to seriously address it within the U.S.

MUELLER-WALDE: But, why can't you convince more of your CEO colleagues for example?

ROGERS: I think it is -- I actually and I am going to say this is a self-serving way, but to say it in a way to show how the process works, I just completed the Chairmanship of the electric industry's association and the good thing that happened on my watch is our industry changes position of saying, 'no' to regulation and 'only voluntary measures', and actually have moved to embrace carbon regulation going forward. The utility industry in the United States represents 40 percent of the emissions, and so if that major sector is stepping up and calling for action, that is a signal to our government leaders that action needs to be taken. We recognize -- I mean we make investments. I build coal plants, gas plants, nuclear plants, wind, solar, all these investments are 40 and 50-year investments and I am now sitting there saying I have got to make more investments to serve our customers, to keep our economy going, to keep jobs in the areas that we serve and for me, the uncertainty around CO2 makes it more difficult. So, as a pragmatist, as a businessman, I say, let's regulate it, let's put a price on it, let's get to work making decisions because my job in the world is to provide solutions and building plants and the type of plants I build is very critical and having a price of carbon which comes from cap-and-trade will allow that to happen.

MUELLER-WALDE: Yes.

STEINBERG: Just to add a point on this which is the issue of predictability, I think has made a big impact on changing the American debate because the states, this is the companies in some respect who provides a leadership more than Washington has in the last couple of years, so are the states. And the fact that you have so many states, California, New England and others beginning to make their own regulatory initiatives, I think has made people realize that something is going to be done and it is much better to do it in an national level. So I think that's another of the important factors that leads one to think that there is a momentum building to get something done in Washington.

MUELLER-WALDE: So, Mr. Prime Minister, do you think it is better to talk in smaller groups than in such a huge conferences like Bali or Kyoto?

RASMUSSEN: I think we need both. In the preparation for the Global Conference in Copenhagen, we need a lot of preparation. There is a UN Climate Conference in Poznań, in Poland, in December, this year. In between, we need meetings in smaller fora where people can meet, get together, discuss instruments, how to achieve the ambitious goals. And I think it is essential to make sure that the final solution will be growth compatible and cost efficient. We need to combine continued economic growth and our endeavors to prevent climate change because the poor countries have a right to continue their endeavors to eradicate poverty. The rich countries need resources to invest in green technology and I think it is possible to combine the two and I can use my own country as an example. During the last 25 years, we -- the Danish economy has grown by around 70 percent. During the same period of time, we have seen zero growth in energy consumption, so we have decoupled economic growth and energy consumption, and at the same time, developed renewable energy – 20 percent of our electricity is produced by wind power, for example. And we will proceed in this direction, increase energy efficiency, more renewable energy, and I think it is possible for all countries in the world.

MUELLER-WALDE: But, what are the lessons you can offer to the others to Jim Rogers, for example, or to people in other countries? So, in fact, you decoupled the economic growth and the growth of emissions, so this is a very special point and a very important point, so how did you do that?

RASMUSSEN: Well, I think the main message is that climate policy can be turned into profitable business. That is the main message and a very important message, and we need engagement by leading business people in this process. We have developed a strong environmental and energy sector in Denmark. I think we have established around 10,000 windmills in the United States. The United States is one of our main markets for wind power. And all in all, Danish energy technology exports represents around 8 percent of our total exports.

So we have turned all these efforts into business.

MUELLER-WALDE: If it is so easy to build a vibrant green industry, why don't we do this all over the world?

RASMUSSEN: Well I think we need a global carbon market. We need to use market instruments to make sure that all these things can be turned into profitable business.

Well a very simple system, I do realize that it is too simple, but just to illustrate the problem. A very simple system would be to make a global agreement on an average emission per capita, globally. That's what we can afford in the future is X tons per year per capita, OK.

Those countries that emit about above the average can then either reduce their emissions or buy quotas from those that emit below the average. And then we have a price on the global carbon market. It's too simple, but based on that, based on that, we could develop a global carbon market and through buying and selling quotas we can generate revenue which can be used to finance dissemination of green technologies to less prosperous countries, et cetera.

So it is possible. It's only a question of political will.

MUELLER-WALDE: Jim, do you want to add something?

ROGERS: I think I would defer to the prime minister on that point, but make an observation. I think to build the debate around a per capita, GDP per capita or carbon per capita or energy use per capita.

MUELLER-WALDE: CO2 emission per capita.

ROGERS: Per capita, I think ...

MUELLER-WALDE: As just America proposed, yes.

ROGERS: I think that's a dangerous approach for a couple of different reasons. It really brings into light the inequities in the world and a couple different points. One is I believe in the politics of possibilities not the politics of limitations and punishment.

And in a sense as we craft our way forward, while we don't have the right in Europe or in the United States to tell the Chinese or the Indians, we have no moral right to tell them that they can't aspire to have GDP per capita the same as ours. But what we recognize is as their GDP per capita per – grows, their energy automatically grows and their carbon

emissions grows. But there has also been studies that say the higher the GDP per capita in a country the more responsible they are and their environmental are far superior then those countries that are poorer.

In the same way it would politically unacceptable in Europe or the United States to say that we're going to pursue a policy that's at the end of the day, going to translate into GDP per capita either declining which would be totally unacceptable or even flat would be even unacceptable because our citizens are – have grown up with and are comfortable with GDP growing modestly per capita, with the notion that the next generation will have a better world and a generation that we live, or the prior generation.

So, I would suggest respectively that that approach really focuses the inequity on the inequities and the differences and that we need to find a better way. And I think a better way involves two things. One is that we need a cap-and-trade system. I think with the EU has done on their cap-and-trade systems, there's been some missteps but good learnings and a lot of people that are against carbon in the U.S. like to point to the EU shortcomings.

But quite frankly I think we learned from that and will be better and Europe is going to be better on the trading system and everything will be better as a consequence of the experience that you all have had. And so I think we need a trading system with a cap.

The second thing that I would quickly say is we can not build in this world a bridge to a low carbon world without technology. We need to make billions of dollars of investment in technology. And just for my sector, everyway you generate electricity needs new technologies.

Wind and solar, we need storage technology to allow them to contribute in a low carbon world. Coal, if we find a way on carbon capture and sequestration. In the U.S. 50 percent of our electricity comes from coal that would make a huge difference. And particularly in the context of the Chinese which would build 800,000 megawatts over the next eight years. So we need that technology.

We don't even talk about how to take out carbon from gas which has about 40 to 50 percent of the carbon of coal. Nuclear, I know there's a renaissance occurring on nuclear in the U.S. because it's the only source that has zero carbon emissions. But we need to make recycling work as the French have.

And then energy efficiency which I think is probably the most important thing still needs new technologies. My only point is we need regulation but we also need huge investments in technologies. And I think our countries have got to be prepared to make those investments as well as the companies within the countries.



RASMUSSEN: Well actually I'm not going to propose a per capita emission system. I just used this example to illustrate the principal of a global trading system. I fully agree with you that the most important element in all this would be to develop new green low carbon technologies.

But this discussion just underlines the necessity of having a global and comprehensive agreement in Copenhagen in December 2009. Because we need regulation, I agree with you. We need regulation otherwise we will not have a level playing field for businesses all over the world.

If it is up to each individual country to decide how to achieve the target then we will not ensure a level playing field for businesses all over the world. That's the first reason why we need a comprehensive deal taking all major emitters on board. And next we need a comprehensive agreement to make sure that all sectors are included in our global framework. Not only business, but also housing and transport, including intercontinental air and sea transport. Not to speak about deforestation, which is also a very important part of our endeavors.

So I don't think we disagree at the end of the day. This per capita system is too simple. But it's a good way to illustrate the principal of that global trading system.

STEINBERG: I think – I think these are important observation that the Prime Ministers made and having given sort of the optimistic side about the fact that I think that there is a broader political change in the United States. The kinds of issues that he's just identified are enormously complicated and enormously controversial in the United States.

And the time table that we're talking about, frankly, is hard to imagine that a new administration could conceivably meet in the kind of comprehensiveness that the prime minister has talked about. We don't have an agreement to cover all sectors.

For example, if you look at the legislation in Congress, many of the bills which have the broadest support exempt sectors like residential sectors. We have lots of debates about some of the points that he's raised. And the plausibility of a new administration coming in with only 10 or 11 months to get its act together, to come up with a proposal that has a broad base of support in Congress, that won't be as we like to say in the United States, 'dead on arrival' with the Congress, is very difficult.

And so I do think as we think about the Copenhagen Summit, I think that, you know, we're in a better place now than we were going into Bali. We will be in a better place after January of 2009. But I think there's a reality about our own timetable in the United States. It means that we have to think as we look towards Copenhagen about how far the U.S. processes can reasonably get in that time frame, what we should – so that Copenhagen can



be a success for everybody rather than a glass that's half empty.

MUELLER-WALDE: In other words you aren't optimistic that a global treaty will be finalized till 2009.

STEINBERG: I guess what I'm saying is that there is a risk that if we rush to do a full treaty that, as I said because the details are so important and so complex, that you run the risk that you have something that is incompletely digested by the American political system.

And so I think that's going to be an immediate challenge for the next President to engage with our – particularly starting with our friends in Europe, Japan and others, to try to think about how do we make Copenhagen a success in ways that not only lead to an agreement, but one that can actually be adopted in the United States.

I think that having gone through the experience in the Clinton Administration with Kyoto where we were determined to try to be a constructive participant, we also dealt with the fact that we hadn't fully brought Congress on board and we had problems. And we knew as we were in the – involved in the Kyoto negotiations that the fact that, at least in its initial terms, Kyoto excluded the developing countries, was going to be enormously problematic.

And we had a view about, you know, sort of starting to provide leadership and hoping to have that come along in the end. But I think it's going to be important that we use these smaller groupings, very quickly in the new administration, whoever the President is, to try to figure out how to make Copenhagen a success, given the relatively short period of time between a new administration coming into office and the Copenhagen meeting.

MUELLER-WALDE: I would like to talk about another topic with you because at the end of the day comes down to the question, does climate protection impede global economic growth? And if yes, how will these losses be allocated.

If you try to imagine what kind of view the northern countries have if we are going to talk about reducing green house gas emissions and what kind of view the southern countries have. There's a huge difference in perception.

So which answers do you have for example for China, for example for India, for Brazil, et cetera, et cetera. They expect that the northern countries pay for everything that is connected to save the world. So what kind of answers to you have?

RASMUSSEN: Well obviously there is a cost of action. There are different – oh there are a lot of surveys on that. But my point of departure is the surveys published by the

U.N. Climate Panel. And according to these surveys there is a cost of action equivalent to around 0.12 percent a year. OK.

But there's also a cost of inaction because inaction climate change means water shortage in some areas, devastation of agriculture in other areas, destruction of residential areas, et cetera, et cetera.

MUELLER-WALDE: Yes.

RASMUSSEN: So there's also a cost of inaction and according the climate panel, the cost of inaction is more or less equivalent to the cost of action. So my political conclusion is that provided that the cost of action is more or less equivalent to the cost of inaction, we should act responsibly and ...

MUELLER-WALDE: That's right.

RASMUSSEN: Based on common sense.

MUELLER-WALDE: That's right, but how can you convince China for example to get into the, yes...

RASMUSSEN: Well first of all, because China will suffer from the consequences of climate change, so will India. So will other poor countries. The fact is that the developing countries are those who have contributed or they didn't contribute to climate change to the same degree as the industrialized countries. However, they will experience severe consequences of climate change.

But in addition to that I would say that we need a global financial mechanism to assist developing countries in the financing of adaptation to climate change and the transfer of green technologies.

MUELLER-WALDE: Jim, as a democrat, would you agree to the solution the northern countries should give technology to China, to India, to everybody just to make sure that, you know, we save the world?

STEINBERG: I mean, on the technology issue there is potentially a win-win here. Which is, it's not just a question of giving it, it's a question of how do you make this attractive on both sides, both your financing mechanisms to creating carefree trade and other things.

MUELLER-WALDE: You wouldn't agree to the point that it's a welfare problem?

STEINBERG: Well there is, there is a welfare problems here and I do think that it's important not to try and run away from it. That is a lot of these proposals and I think Anders correctly identified the problem with per capita emissions is that that, you know, you don't have to peel back the onion too far to see that there is a massive transfer that goes if you use metrics like that.

And that the challenge will be on a political level to sell the idea that at a time when there are lots of issues about our relationship with China, about trade, about all these other issues, that the United States or other countries should be involved in a massive welfare transfer to China or India or to others.

And I think that is a political reality that has to be taken quite seriously. I think the other problem is that, you know, when we put on our public policy hat and you net that, there's a very powerful case that the IPCC has made for the fact that it's either more costly not to act or at least it's a close call. But we also recognize the people who bear the cost and get the benefits are not identical both in terms of people who are alive today and for future generations.

Much of this calculation is based on the fact that the burdens are born by later generations and we know that in our political systems how hard it is to take decisions, keeping in mind the welfare of subsequent generations. We deal with this in social security and Medicare, all of our problems.

And so there are real costs for real voters today and again, having expressed the optimism in the outset, another complication for us will be the current economic climate, which is not one in which people, are going to be expansive about additional paying. People are going to worry about the near term economic dislocation.

So a lot of this will have to do not only with dealing with what are the welfare transfers from the developed countries to the developing countries, but also how do we ease the pain in our countries for people who will be displaced by the kinds of changes that will take place as we take on this responsibility. And unless there are strategies to deal with it and you see this in the whole debate that Congress just had about fuel efficiency standards that there are real voters with real pain who will matter a lot in 2008 and beyond.

And so that's why this calculation is quite complicated is to get all the side deals and all the arrangements worked out so that the clear public good that can be achieved and must be achieved. I think there is a broad agreement that we have to take this on.

MUELLER-WALDE: But it's really complicated too, because there are lots of people who doubt there is – that there is any man-made global warming problem.

STEINBERG: I don't think that's a problem any more. I think politically that threshold has been crossed. Even the president has now ...

MUELLER-WALDE: You don't agree with that?

STEINBERG: Has now accepted the proposition that this is, as presented (inaudible), that that is a problem that has to be addressed. That's, you know, it's a necessary but not sufficient condition. But I do think obviously there are going to be people who are naysayers. But I think on a political level, that battle has been won, I don't know if Jim agrees.

MUELLER-WALDE: OK.

ROGERS: No I totally agree. We are there. I mean the science, the scientists have spoken and that's where we are. But let me put a kind of measure of pragmatism into this.

Negotiations in the United States as Jim pointed out will probably get legislation in '09 or '10 if we really work hard at it. I participated in the U.N. Foundation, the Club of Madrid to drive principals that should be looked at post-Kyoto. And having sat through that I looked at the complexity of this issue on a worldwide basis and it's going to take time to bring 192 countries in and to join together even under the though of common but differentiated responsibilities.

My point I would make is, and this is a conversation that might not be politically correct, mitigation is critical and we need to go to work to get mitigation measures in place. But even the best mitigation messages, approaches are going to take time in the U.S., it's going to take time worldwide. And the question is what do we do in the interim?

Because I think what is not talked about very much and I've come to believe that it's just not about mitigation anymore, because I don't think we slow down China. I don't think we slow down India. I don't think we slow down the fact that 75 percent of the incremental CO2 emissions in the world will come from developing countries over the – between now and 2030. I think that's a reality.

I think we're in a world about mitigation and adaptation and we're not talking enough about adaptation strategies because I think that is the practical reality. If mitigation is tough, I know the debate in the United States, they've really shut down the idea of getting offsets outside of the United States.

If they're reluctant to allow companies like ours to seek low cost offsets around the world, think how difficult the political conversation will be about spending U.S. taxpayer's money to do adaptations on problems that are uniquely local because we all know that climate has an uneven impact on different regions of the world.

MUELLER-WALDE: At that point I would like to bring you all in. So maybe you agree with that opinion, maybe you have a question. Maybe you want to make a quick intervention. Is anybody here who's interested – who, who, who's the first? OK, you please. Do we have a microphone?

C. BOYDEN GRAY: I am the U.S. Representative here in – for the EU in Brussels, Sam Fox is our bilateral ambassador, so you don't get us confused. I'm a lot taller than Sam is. Well maybe, I don't know. I would defer to you on that.

My question is though, how, what strategies would any of you suggest for how we get China into and the developing world, advanced developing world, into this game? Jim just mentioned that the U.S. legislation, the political climate will shut down these trades, so-called Clean Development Mechanism offsets from abroad unless those countries have come into a comparable international regime which we are now trying to negotiate.

And here I don't think there is a difference between the parties in our country, Republican and Democrat in terms of whether any treaty is possible without China's participation. Senator Kerry was the only senator who came to Bali where I was with our negotiating team and he made one very simple statement.

Without China, if you don't get China in, you can count the United States out. And I don't think you would disagree with that. Kyoto was initially rejected by the Democratic Administration 95 to nothing because China was not in.

So my question is, what are the strategies for getting China into this? We have a tactical difference now with Europe. Europe is not really helping us frontally trying to engage China. They're kind of playing another kind of – if we, I think, confront China directly, unitedly with Europe, I think we can do it. But there are differences about this.

MUELLER-WALDE: OK.

GRAY: So what is the strategy?

MUELLER-WALDE: OK, I think the question is understood. Thank you very much. Who wants to answer this question again?

STEINBERG: You know I think one of the things that is very important ...

MUELLER-WALDE: That's OK.

STEINBERG: One of the things that is very important is to recognize that on one level, China wants to be in, in the sense that the Chinese themselves recognize that their own future has to have a different carbon path than the ones the developed countries have.

I mean they recognize themselves particularly given their dependence on coal that all the collateral consequences of, if they have an emission pathway that parallels what we did as they grow, they'll choke themselves. And so on some level, China has accepted the proposition that it wants a different energy future for itself.

The question though is, one what is the – what kinds of limitations are going to be put on that, that is. And what price they have to pay if they don't live up to it. And second, how is it done politically. Because for them a lot of this is a political problem for China, which is why they should accept limitations and, that others haven't done.

So I think part of it will be the question of whether we can accept a concept that says China's own strategy for growing is in effect a deflection of business as usual and that find ways to codifying that into a treaty. So it's suggested that you have common but differentiated obligations. And I think that's doable. But clearly Europe and the United States are going to have to give a leadership roll in their own commitments before the Chinese are going to come to the table.

ROGERS: I think one of the things that I would suggest is the one thing that helps China achieve their problem. Because they have a fundamental problem of the rural part of their country moving to the urban areas. They've got a lot of potential political unrest unless they can provide jobs. So they have the imperative, an economic imperative. But they also look at the ecological disasters that they are developing.

And I think people underestimate how aware they are of their environmental problems. I think the media has underestimated how aware they are and what the tension is. But the thing in my judgment that brings them to the table is really the technology. If we can put money and develop the technology, carbon capture sequestration because they're so dependent on coal. I think that at the end of the day that's something they will embrace because it will allow them to achieve their twin objectives of cleaning up their environment and making and ensuring economic growth.

MUELLER-WALDE: Who should pay for that? Who? The industrialized countries or who?

ROGERS: I actually think because 50 percent of our electricity in the United States comes from coal, we have, we're uniquely positioned to invest in it to reduce our own emissions. And at the end of the day, these technological advances should be, can be, and will be shared with the Chinese and they need to have confidence in that and I think that we can give them that confidence.

MUELLER-WALDE: That's very difficult to give them confidence. Yes.

RASMUSSEN: Yes, I think there are a couple of elements in this. Based on my talks with Chinese leaders, I am a bit optimistic. Firstly because there is a growing awareness in China on environmental problems connected with energy consumption.

Secondly, there is a growing energy shortage. Growing demand for the energy in China, so China has to find a long term solution, solutions to the energy supply and the environmental problems. And the best thing that we can do is to show a good example to take leadership. Then I think, also for political reasons, China would like to be a part of – a part of a global deal.

But we have to take into consideration national diversities.

MUELLER-WALDE: OK, you please.

CARLOS PASCUAL: My name is Carlos Pascual from the Brookings Institution. I think you've put your finger on the central issue here. As one person put it for the developing countries to mimic the growth path of the industrialized ones, it's essentially a new form of mutually assured destruction. And so that becomes in part the incentive that they have to think about.

And I think Jim you effectively began to differentiate two parts of the equation here, which is, there's an issue of emissions abatement and there's an issue of technology development. The two are related obviously and the central point of relationship is price. But if we can focus on the technology side for a second because that is in and of itself a phenomenally complicated problem.

And if I could ask you all to comment a bit about what are effective mechanisms to address this. Because Jim has raised the reality that, for example, creating funds that finance the transfer of technology to China, in the United States at a point in time where there are massive trade deficits is not a very popular thing to do, yet it has to happen.

From the private sector there are issues of how does this happen in a way that leverages private investment rather than substitutes for private investment. And on the public sector side there are real questions about what are the mechanisms that can effectively do this so that we don't end up simply financing investments that might have been done anyway so we really do actually get a sense that there are real transfers of technology.

MUELLER-WALDE: Who wants to step in?

ROGERS: Just two days ago I was in Silicon Valley, which I think will be renamed Solar Valley in the future. When you look at the amount of capital and the amount of smart people, that are spending their time trying to develop clean technologies; it's remarkable in the United States.

The market is moving way ahead of any regulatory regime because they see this as an opportunity to create value, to create wealth and so there is a tremendous effort now going on in the private sector to develop and advance solar technologies and other technologies that will allow us to use energy more efficiently and get productivity gains through the use of electricity.

So I think you – that is going on. At the same time, the United States has underinvested as a country in R&D. If you go back and look over 30 years, we peaked in the early 80's and our government investment has fallen off dramatically.

We need to be investing \$10 billion plus a year in RD&D; that needs to be allocated to universities, to private groups, not just government. That will generate a lot of other ideas going forward. So its both public and private working together I think is the key.

Because I keep coming back to a fundamental theme that I would stress. To build a bridge to a low carbon world, we have to have technology to get it done. And I think that is critical. And I think that at the end of the day that we'll find a way.

And my last point on the U.S. and I see this in what happened in the EU in the last couple of days, I see a growing reluctance. I mean the EU has led, I would be delighted to see the U.S. stand side by side with the EU going forward. That's the right place.

Because I think together we can lead the world on this. But I see a growing sentiment even in the debate of the United States about putting special tariffs on any goods that come from a country that doesn't sign up. I think that kind of blocking of trade in a period when our instinct in the United States is to build a wall around the United States on immigration, on trade and a lot of areas like that.

I see that same sentiment evolving in the EU. And I think that in a world where we all benefit from globalization, both the north and the south, that that would discourage an advancement that would really allow GDP per capita to grow for all and not just for some.

MUELLER-WALDE: Please. Microphone is coming, here to the right.

CATHLEEN KELLY: Kathleen Kelly with the German Marshall Fund. Prime Minister Rasmussen mentioned the need for the United States to step up with a commitment to reduce its emissions before large developing countries like China and India do so.



Mr. Rogers, I wanted to ask your view as a large energy company who is calling for the immediate adoption of a comprehensive cap-and-trade program in the United States to comment in a little bit more detail on what you think the prospects are for the United States to pass a mandatory cap-and-trade program before the end of 2009.

And then Prime Minister Rasmussen I wanted your view on if the United States is not able to do so, what does that mean for the international negotiation session at COP-15? Thank you.

ROGERS: I would first say that Jim had it absolutely right, there is a – there is a – it's not, nothing is for sure in life, but its pretty close that there will be legislation in 2009 or '10. I think the challenging question is whether it gets done in 2009 in time. That's not so clear to me.

Because the – a new administration is going to have to get organized and you know that will take the first quarter of the year. I know a lot of work is going on in Congress today. But as I've walked the halls of Congress and talked to the staffers and different leaders in Congress, the – there's a huge learning curve. Those on the committees are engaged and understand it. But once you get beyond the committees on the hill, most people don't truly understand a very complex, thorny, perplexing set of interrelationships associated with this issue.

So I'm optimistic that we'll do by '09 or '10 but it's a higher probability it gets done in '10 rather than '09, in my judgment.

RASMUSSEN: Well, at this stage, I'm not that pessimistic. A couple of weeks ago, I visited the United States and I had talks with politicians from both camps. I follow the election campaign closely, and it's clear to me that whatever happens, whatever might be the outcome of the American elections, we will see progress concerning climate change.

I visited President Bush at Crawford. We had a wonderful mountain bike ride, and we discussed climate change, and we had a real fruitful discussion so that in the press conference I concluded that the President is a committed environmentalist.

I do realize that some of the American journalists were a bit surprised, and the President felt obliged to say that this was in contradiction with the usual stereotype, but I said this because we had a very fruitful discussion, and I think that the current administration in the United States aims at getting a positive outcome of the major economy's initiative already this year.

And that will be a very important building block in a global climate agreement in 2009, because I have to remind, I fully agree, that December 2009 may seem far away, but, in fact,



we have limited time, and we have to make some important decisions already in 2008 to make sure that we can reach a global agreement in December 2009.

And among these important decisions should be a decision on a long-term target for reduction in greenhouse gas emissions. And I wouldn't exclude the possibility that an outcome of the major economy's initiative, that an outcome of the G8 meeting later this year could be a long-term target for emission reductions.

STEINBERG: Let me just add, because I think it's very important to remember the history here, though. I mean, we all agreed to long-term targets at Rio, and we all know where we've come since Rio. And I think that in terms of working with the U.S. Congress that, obviously, we want to go faster rather than slower.

But, at the end of the day, it's going to be the ability to both ratify a treaty and to enact the domestic legislation that requires it. And there's been a lot of progress and leadership by people like Jim and others, and the coming together of the outside groups has changed the climate.

But even today, just a few months ago, the Senate Energy Committee reported out the Lieberman-Warner bill, which would not meet most of the requirements that the prime minister talked about in terms of comprehensive by only an 11 to 8 vote. Now, the good news is, it's the first time that legislation with support and this, sort of, mandatory cap in trade with reductions has come out of a Senate Committee, but it's still 11 to 8. That's not enough to get it enacted by the Senate to get passed the 60 percent.

The climate will change, if I can use the word, once there's a new President, but getting that consensus and building it in the Congress to not only have a long-term goal, which is important, but to actually think about the mechanisms that would have teeth in the United States have to go together.

And I would hope that we would find a strategy that both recognizes the importance of a long-term goal but actually provides the bridge that gets us to that with the kinds of actions that we need to take now, that can have the domestic support that they need to have in the United States, because, as everybody has recognized, if the United States doesn't actually do this, the rest of it isn't going to matter very much.

MUELLER-WALDE: Next question.

GRAY: I'm sorry, I can't, I have to say something.

(LAUGHTER)



GRAY: We have spent already about \$40 billion on research. We have now committed another \$40 billion in loan guarantees for research and development and deployment. We have just adopted the most sweeping energy legislation ever adopted by anybody, much more aggressive than what Europe is even now contemplating taking to its own on transportation, taking to its own Council and Parliament.

This gets no press. We are now being criticized in the United States by the Democrats, Bush is, our President, for not going unilaterally by himself, further than Congress let him go with the energy bill, because Congress didn't give him what he wants, and he's now being criticized for this.

We have done a great deal, the stereotype is very, very hard to correct, but I do think we are on a track. We have mandatory limits in eight sectors, including transportation, which are going to be very hard for us to meet, and they are certainly, I think, the equivalent of anything Europe can do over the course of the next two years.

And I'm sorry to be a little impassioned about this, but we have sung for our supper.

MUELLER-WALDE: Thank you very much.

You wanted to ask something.

JOHN KORNBLUM: My name is John Kornblum. I'm a former American Ambassador, and I now live in Berlin. And I think that this discussion, unfortunately, is turning out the way most of these discussions do, and that is each side proving how better it is or how more direct it is.

And I think that before we make much progress anywhere on this issue, two things have to happen. First, the United States and the European Union have to understand that at least 50 percent of this discussion is about who is more right than the other, and this, unfortunately, became very pointed in the way that the Kyoto agreement was finally negotiated and agreed. Jim has talked about that. I was part of that process too, and it was not anything the United States was happy with when it was signed.

But, secondly, of course, President Bush did put the icing on the cake, if you will, by unilaterally just dumping it after he got into office. He wanted to prove that he was more right than the Europeans, and the Europeans have now taken this up almost as a rallying cry to show that they're stronger than the United States. I'm not going to put any blame anywhere, but that's the fact.

There are lots of economic costs. The European industry is not as in favor of this agreement or this process, as many would like you to believe. I live in Germany. The predictions are that Germany's going to run out of electric-producing capacity in about 10



years because of a number of things, including the unwillingness to consider nuclear power. So there is, in addition to the strong commitment by the Danish prime minister, there's a person in Copenhagen, a professor, who gives a very good case for different approaches to these issues.

And I think until the United States and Europe somehow decide that it's not about who's the tallest and who's the strongest but about doing something about emissions, we're just going to have this discussion for the next 10 years. Thank you.

MUELLER-WALDE: Is any German expert here who wants to answer? Nobody? OK.

Next question, please.

ARVE THORVIK: My name is Arve Thorvik. I represent StatoilHydro, a fairly major oil and gas company. I have to join the polluters. I don't have the exact figures for our company, Jim, but I'm sure we're right up there with you.

(LAUGHTER)

THORVIK: If we had this discussion a couple of years ago, we would still be discussing this as an issue and how we cost it and so on, and I think it's heartening to hear that we're now actually starting to talk about solutions, even though there's a little bit of blame thrown back and forth across the Atlantic.

But I would like to touch on two questions, primarily to Jim Rogers. It's about the cap and trade that you mentioned. We are strong believers in that system. We believe that can be a mechanism to do it. Is it at all thinkable that we could build on what is already now tried out in the first phase in Europe in a cap and trade system and what has been tried before in the U.S. and the SO₂ trading system and with some regional initiatives, and simply make a transatlantic cap and trade system? Is that thinkable?

Or is it possible even to make that really happen to put what some people in Europe will talk about, a mandatory limit on saying zero emissions from power production by year X to bring the price of carbon up so we can invest?

Because the other part of it is, is that we cannot switch to solar and wind to meet our energy needs in the next foreseeable future, so we need to do fossil fuels and therefore carbon capture and storage is necessary. We are building what will probably be the first full-scale CCS plant in Europe. We have done carbon storage for 11 years in the North Sea.

My other question is, this is not rocket science, it's not new technology. It's about scaling up the technology and bringing down the cost. Can we work across the Atlantic in a

joint program to get that done? We've got a program in Europe, the Zero Emission Power Program, about to be started. There's a FutureGen, which is not fairing so well in the U.S. Is it possible to see if we can do something jointly, because this is about scaling up and bringing down the cost.

Thank you.

MUELLER-WALDE: I assume you know the European Emission Trading Scheme, right?

THORVIK: Yes.

ROGERS: First, I would say that the cap and trade is preferable. It puts a cap in emissions and a decline over time. The government sets the cap, it turns industry loose to find the low-cost solution. And I think, at the end of the day, that forces working together produce the best result for consumers. So I strongly believe that.

I think to try to create a cap and trade system with both Europe and the U.S. I think over time -- I don't think you can do that from the get-go, but the two markets -- I mean, the traders will arbitrage the markets, and over time these regional markets will become one. And I think what our experience in commodity markets, regional markets over time arbitrage, become one. I think that's a real possibility.

On carbon capture sequestration, we follow closely what you're company's done. We're building the largest coal gasification plant in the U.S. and maybe in the world in the Midwest, and we're going to use that as a site for sequestration. The failure of FutureGen that you mentioned, sure, that's kind of fallen to the side, but, quite frankly, I believe it leaves money available to invest primarily in the sequestration, because, you're right, the technology is there, it needs to be scaled up, we need to reduce the cost.

And with respect to the earlier comment, which I thought was directed somewhat at me and my comment on U.S. investment, I think an important point I would make is, is that, yes, there's been sweeping legislation with the Energy Policy Act of 2005. Much money was authorized in that legislation, but Congress failed to appropriate, and there's a fundamental difference between authorizing, which is good intentions, and appropriating, which is results. And we haven't gotten the actual money that's been moved from the budget into these areas.

And that's not saying that this administration hasn't done a great job. They've done a great job on technology, they've led on technology, and the only criticism I think anybody has in the U.S. that's a strong supporter of action is that there's been no regulatory action coupled with the push on technology. And some of us believe you need both. But this



administration has done a very good job focused on technology, but this Congress has not appropriated the money.

MUELLER-WALDE: I would like to come to an end slowly. And the last question should come from this corner, please.

ANDREAS KRAMER: Andreas Kramer from Ecologic, Institute for International and European Environmental Policy, and there's actually two questions, thank you, but they relate to how we can work across the Atlantic.

And the first one goes to Jim Rogers.

When you look at the images here, it is all about renewable energies, and if you think about that and if you see how the smart money in Silicon Valley is going into intelligent utility networks, into smart grids, into the marriage between information technology and the electricity grid, where do you see the role of a utility like Duke Energy in the future? How are you going to reinvent the utilities so that they have a place in the future?

And behind that, what do we need as a dialogue between the U.S. and the E.U. on this? Do we need a transatlantic dialogue on smart grids in order to make sure that the standards the products will have to fulfill agree and that we don't create throw-up barriers?

And to the prime minister, Your Excellency, one of the areas that changes quickest at the moment is the Arctic environment. The ice melt is very fast, the shipping lanes are opening, there is a competition for the resources for sovereignty issues. There will be changing borders, international borders between countries as the sea level rises and the outposts are submerged. We will have to redraw lines.

Isn't this an area where the Europeans and the Americans and the other partners around the Arctic circle should begin dialogue now in order to manage the conflicts there? Do we need a moratorium on exploration, as we have in the Antarctica; some people ask for that? What sort of model do we need? And how you, as Denmark, is responsible for Greenland, so you have a border conflict with Canada as well as with Russia over that. How do you see that going forward?

Thank you.

RASMUSSEN I can respond to Mr. Kornblum's question, but I can't speak on behalf of Germany, I can only comment, if you like, but will do that later.

MUELLER-WALDE: Later, please.

Who wants to answer?



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ROGERS: I would start by simply saying that, yes, there's significant money going into renewables. The fastest wind generation market, Mr. Prime Minister, to the benefit of Denmark, is in the U.S., because we are really building wind faster probably than any other country in the world. We might be slow coming off the mark, but when we get going, we go pretty fast. So we're making progress on that.

But the important point I want to make is, I know the emphasis is so strong on renewables in Europe, and I think there's been a lot of conversation about taking nuclear off the table. I think it would be a huge mistake to take any of the fuels out of the equation, because we're going to need nuclear and coal with carbon sequestration, we'll need natural gas, we'll need renewables, but we'll also need what I call the fifth fuel, energy efficiency, to get it done, which gets to your second question to me.

And I believe that we're going to, as a utility company, totally reinvent our business model. Historically, we made money on a commodity model: The more kilowatt hours we sold, the more money we made. I believe in the future we will make money investing in our infrastructure, taking this 100-year-old grid that's analog and making it digital with two-way communication. I believe that we'll actually redefine the boundaries of our business.

So we will make money optimizing the grid and all the networks embedded in the customers we serve and their applications. And with sensing devices and with computing capability we have today, we will make money by optimizing use.

We have not even begun to see in this world the possibilities and the productivity gains in the use of electricity. We have only just begun. And while electrification of the world was a 20th century achievement, the greatest achievement in the 21st century is going to be our model change, our focus different and this notion of huge gains and productivity gains in the use of electricity.

MUELLER-WALDE: A short answer.

RASMUSSEN: About the Arctic, you are quite right. A lot of things are happening in the Arctic right now. A month ago, I visited, once again, the small city of Ilulissat in Greenland, and we have seen how the icecap has redrawn by 15 kilometers during the last six years. It's very high speed, and it's a significant indication of the consequences of climate change.

And you're also right that we will be faced with new challenges in the Arctic region because of climate change. Some countries now claim parts of the region around the North Pole. It is regulated by an International Convention. According to this international convention, those countries who think they can justify such claims have to present these

claims to an international body before 2014, and we are currently making scientific investigations to justify our possible claim.

But in the meantime, we need a peaceful dialogue, you're quite right. And this is the reason why the Danish government has organized a meeting in Ilulissat on the 27th of May this year, and all the stakeholders will participate in that conference, including the United States and Russia and Norway and others.

MUELLER-WALDE: Thank you.

Last question goes to all three panelists. Twenty months to go till the next climate conference. Which are the sticking points for you, and what do you want to do first, maybe tomorrow, to support such a possible treaty?

RASMUSSEN: Well, we are working every day, I would say, and...

MUELLER-WALDE: I believe that.

RASMUSSEN: ... we have to make important decisions already in 2008. There are many stakeholders, there are many forces who work together, and we need joint efforts. And to ensure that we can coordinate all these endeavors, the U.N. Secretary General Ban Ki-Moon has decided to establish a coordination group consisting of the past, the present and the coming presidents of the U.N. Climate Conferences, that is the Indonesian President, the Polish Prime Minister and myself, and we will try to coordinate all these tracks.

So it's an ongoing work, but I think, first and foremost, it's important to show a good example to make sure that we can get all major emitters on board. The European Union has made important decisions and we stick to these decisions.

And let me once again mention my own country as an example. Denmark is a very small country, but I know that there are a lot of skeptics, not least in the United States. But please look at my country. We have combined economic growth and a committed environmental policy. We have combined our endeavors to improve the environment and a strong competitiveness and job creation. Denmark is really among the most competitive countries in the world, and, at this stage, our currency is also stronger than the U.S. currency. So I think it's an example that you can turn environmental policies into profitable business.

Let me conclude by saying that at the early '60s, President Kennedy set the goal that mankind should reach the moon. I think the time has come to set the goal for the next generation that mankind should reach a low carbon economy.



MUELLER-WALDE: Thank you.

ROGERS: Your comment is almost a perfect segue into the point that Neil Armstrong served on my board of directors for over a decade, and I used to start every presentation where I needed his vote with, "One small step." I always got the vote.

(LAUGHTER)

Let me say that I think the Prime Minister has set the stage right by talking about we need to have a clear vision, it has to be inspiring to bring people together to make this a reality. My hope is, is that from a private company's perspective, that we go to work while the world leaders are debating how best to do this, that we go to work and invest in energy efficiency, we encourage our governments to invest in Research and Development, recognizing that those are two things that we can do today to reduce our carbon footprint and be able to cross this bridge to a low-carbon world. So I think there's a role for us to play.

I also think there's a role for us to educate our government leaders as to the best way forward. And I think that talking about -- there's going to have to be a transition period. We just can't jump into this and getting the transition is right and important.

And even in the United States, while we don't have the great record of Denmark, if you look back over 30 years, the carbon intensity of our country has been reducing at 4 percent a year over the last 30 years. Our energy use per GDP has gone down 3 percent, and we haven't really been focused in the same way of bringing it down. Imagine what we could do if we had put all our energy into reducing the carbon intensity. And I think we will.

And my aspiration for the U.S. is, is that we take action, regulatory action, so that we can participate as a full partner in these discussions going forward.

MUELLER-WALDE: Jim Steinberg, you will have the last word. Thank you very much for coming to our panel. So what are you going to do tomorrow?

STEINBERG: Well, I think that the most important thing now is in the upcoming presidential campaign for both candidates to talk to the American people about this issue, because I think there is broad support for it, and I think that the next president needs a mandate to take significant action. And if they don't talk about it in the campaign, even though they may have the best of intentions, I think it will be much harder to get the American people and the Congress together to take the kind of difficult decisions that are necessary.

But I think if we do have that dialogue, and I think we have a good chance to because of the positions of the candidates, that we'll be ready come January 2009 for a new president to



identify that as a top priority for his or her administration, to convene the leadership of Congress to move this forward, to work with enlightened leaders like Jim Rogers and the environmental and NGO sectors, to have a national coming together around this issue and provide the leadership that the United States has provided in so many other areas.

MUELLER-WALDE: OK. Gentlemen, thank you very much for your statements.

(APPLAUSE)

Ladies and gentlemen, thank you very much for your interest and your attention, and enjoy the rest of the conference. Thank you.

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