

RETHINKING THE KYOTO PROTOCOL: ARE THERE LEGAL SOLUTIONS TO GLOBAL WARMING AND CLIMATE CHANGE?

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For those of you who do not know me, my name is Ryan Cantrell. I am the Editor-in-Chief of the *Washington University Global Studies Law Review*, and, together with the Whitney R. Harris Institute (Harris Institute), *Global Studies Law Review* put together this panel discussion on the Kyoto Protocol. I realize there are probably various levels of knowledge about the Kyoto Protocol here, but it is basically the international treaty designed to govern climate change and global warming. So, today we assembled this panel of experts from a variety of different fields to discuss the Kyoto Protocol, global warming, and climate change. I am now going to turn it over to Professor John Owen Haley, the director of the Harris Institute and a professor of International Law here at the Washington University School of Law. Professor Haley is going to introduce our panelists today.

PROFESSOR HALEY

Thank you, Ryan. It is a real pleasure for me to introduce the speakers and say a few words of welcome. This is a program that I have long wanted to happen. When I first became director, we had a debate on the International Criminal Court that I thought was one of the best programs that the Institute had sponsored. We have wanted, for some time, to duplicate that with a discussion on the Kyoto Protocol, and problems and legal solutions to global warming. So this discussion today culminates an effort that I was particularly interested in seeing happen for a long time. But, secondly, I also particularly appreciated that this program was put together by the editors of the *Global Studies Law Review*. It is, I think, very important for the health of the institution, and particularly the health of the Harris Institute, for the institute itself to work very closely with student organizations to let the students take the initiative and come to us to try to facilitate the realization of those ideas that they have begun to

formulate. And of this program—I should tell you from the outset, I and those of us in the Institute staff, have had very little to do with putting it together. This was the responsibility of the editors of the *Global Studies Law Review* and you can judge for yourself how successful they have been.

Our participants today include Professor Douglas Williams. Professor Williams is a full-time professor of environmental and international environmental law at St. Louis University School of Law. We welcome him back. He has taught and worked with us here at Washington University on a number of occasions. He is a former rock musician, carpenter, and a graduate of Duke Law School. Professor Williams clerked for the Honorable Douglas H. Ginsberg on the United States Court of Appeals for the District of Columbia. He became an associate at Covington and Burling, LLP, in Washington D.C. in 1988, a time when the federal government began asserting claims for damages to natural resources. He was among the first attorneys to develop an expertise in this area, and has written extensively about the relationship between state and federal regulators and voluntary versus regulatory approaches to environmental protection.

Joining Professor Williams today will be Dr. Anita Halvorssen. Dr. Halvorssen is the director of Global Legal Solutions, an international think tank and consulting firm. She teaches international law in the political science department at the University of Colorado, and is also an adjunct professor at the University of Denver College of Law, where she teaches Sustainable Development and Trade. Dr. Halvorssen was formerly a senior executive officer at the Royal Ministry of Environment in Norway and has worked with the law firm of Home Roberts & Owen in Denver, Colorado. She has also taught European Union Law and International Environmental Law at the School of Law at the University of Colorado, and was a fellow at the Natural Resources Law Center. Dr. Halvorssen is the author of a number of works, including *Equality Among Unequals in International and Environmental Law: Differential Treatment for Developing Countries*. She has also written several articles on climate change, particularly the noncompliance mechanism and the clean development mechanism.

Joining her will be Mr. J. Kevin Healy. Mr. Healy is a partner at Bryan Cave's New York office, specializing in Environmental Law. He has practiced environmental law and land use law for more than thirty years. He represents parties in regulatory and permitting matters under the Clean Air Act, the National Environmental Policy Act, and the New York State Environmental Quality Review Act. He served on Governor George Pataki's Climate Change Task Force and chaired the Emissions Trading

subcommittee of that group. He also co-chairs the Global Climate Change subcommittee of the Environmental Law section of the New York State Bar Association. He has lectured and written extensively on the subject of climate change for the last several years.

Dr. William Pizer has been a fellow at the Resources for the Future since August 1992. He has worked part-time as a senior economist at the National Commission on Energy Policy. From 2001–2002, he served as a senior economist at the President’s Council of Economic Advisors, where he worked on environmental issues including global climate change. He was a visiting scholar at the Stanford University Center for Environmental Science and Policy from 2000–2001, and taught at Johns Hopkins University from 1997–1999. Dr. Pizer has contributed to several books and published numerous journal articles and reports on climate change.

Our final participant is Mr. Jacob Werksman. Mr. Werksman is the senior advisor to the Global Inclusion Program at the Rockefeller Foundation where he funds work on intellectual property rights and trade policy. Prior to joining the Rockefeller Foundation, he served as an Environmental Governor Advisor to the United Nations Development Program. Most of his work on climate change was carried out from 1990–2000 at the Foundation for International Environmental Law and Development. There, he and his colleagues provided legal advice and assistance to the Alliance for Small Island States during the negotiations for the 1992 United Nations Framework Convention on Climate Change and its Kyoto Protocol. Dr. Werksman teaches international environmental trade and investment law at New York University School of Law. I would like for you to join me in welcoming all of our participants to Washington University and this program. Thank you very much.

I will now turn it over to Professor Williams.

DOUGLAS WILLIAMS

Thank you, Professor Haley. To start things off, one of my colleagues, Professor Halvorssen, has a set of slides that introduces us to the Kyoto Protocol.

ANITA HALVORSEN

This presentation is just to give you a background so you can get an idea of what climate change is all about—for those of you who have not followed these issues very closely. This slide is from the Environmental Protection Agency (EPA) and it talks about climate change and how it works. It is called the greenhouse effect. There are already natural variations as far as climate goes, which is why it is warm enough to live

on planet Earth, but climate change is a phenomenon where human activities have been compounding this greenhouse effect. And it has made it a lot stronger. It is going a lot faster. So the Scripps Institute came out with a report in February 2005 saying that there was very compelling evidence that human activities are responsible for global warming, despite the Bush Administration's explanation of natural climatic fluctuations. The Scripps Institute used oceans rather than the atmosphere for their evidence. The likely impacts you have probably heard of are more frequent severe storms, droughts, and ice cap and glacier melts. There was a report in the fall that the Arctic ice would be gone in the summer sixty years from now, so 2065. It is already being reduced 8% per year, so two times the size of Texas has been depleted in the last few years. And what you have to keep in mind is that you cannot pinpoint one particular event. You cannot say Katrina is a direct effect of climate change, but we know that this is the way it is going, that those more severe storms will come and droughts and so forth.

Responding to climate change, the international community adopted the U.N. Framework Convention on Climate Change (Framework Convention), which came into force in 1992. The object of the Framework Convention is to achieve stabilization of atmospheric concentrations of greenhouse gases (GHGs) to prevent dangerous anthropogenic interference with the climate system.¹

Three principles that are outlined in this Framework Convention are sustainable development, the precautionary principle, and common, but differentiated responsibilities. Sustainable development is development where you take into account the generation we have now fulfilling their needs without compromising the needs of future generations. The precautionary measures oblige states to take action even, if there is uncertainty on the science, if irreversible damage can be the outcome. And common, but differential responsibilities, stipulated in article 3(1) of the Framework Convention are really important. Historically, China had very few cars or manufacturing industries to speak of that would be generating carbon dioxide, so you cannot blame them for our present predicament. Now China is catching up, and it will surpass the industrialized countries in their emissions of carbon dioxide in the near future.

Next, we will talk about what commitments are in the Framework Convention. There are no binding commitments, as such, as far as cutting

1. Anthropogenic interference is an interference caused by human activities. An example of a GHG is CO₂ (carbon dioxide), which is produced when humans use the fossil fuels.

down on the greenhouse gases. However, all parties are supposed to create national inventories specifying what their emissions are. The Framework Convention stipulates that the industrialized countries are to take the lead in reducing the greenhouse gas emissions. This is spelled out in article 4(2) of the Framework Convention, and you have to combine article 4(2), paragraphs (a) and (b) to get the whole picture. This results in an “aim” to return greenhouse gas emissions to 1990 levels by 2002, which amounts to a non-binding commitment.

The Framework Convention does have reporting requirements that are considered binding, with different time tables for different types of countries: Annex 1 parties being the industrialized ones and the non-Annex 1 parties being developing countries. These are considered binding commitments.

Then you have the financial mechanism, article 21, for technology transfer and financial assistance. Article 21 established the global environment facility (GEF) as the institution that would manage the financial mechanism. So that is where all the money would go, and from there, it would go to the developing countries needing help. Article 4(3) of the Framework Convention stipulates that the Annex I countries, the rich, developed countries, not including the economies in transition, are to provide new and additional financial resources enabling developing countries to fulfill their commitments under the Framework Convention.

Then we have the institutions set up by the Framework Convention. These include the Conference of the Parties (COP), the secretariat, the subsidiary bodies, one for implementation and one for scientific and technological advice.

Article 4(2)(d) of the Framework Convention specifies that the Conference of the Parties (COP) was to review the adequacy during its first session, and that was a COP-1, in 1995. They adopted the Berlin Mandate, which stated that more action needed to be taken to address climate change, strengthening the commitments of the parties, and the developed states, or Annex I states, were to “take the lead.” That resulted in the Kyoto Protocol. That is the focus of today’s panel, but you always have to go back to the Framework Convention, because it is a convention that works with the Protocol, so a lot of the things apply from the Framework Convention.

The Kyoto Protocol has 156 parties.² They include the Annex I parties (developed countries) and the non-Annex I parties (developing countries).

2. The Kyoto Protocol has 170 parties as of February 14, 2007. See Secretariat of the

The Protocol was adopted in 1997 at COP-3, and former President Clinton signed it in 1998. The Bush administration, however, withdrew its signature in 2001.

The core commitment of article 3 is to reduce overall greenhouse emissions by 5% below the 1990 level in the first commitment period. We are talking about the five-year period spanning 2008–2012. These emissions are carbon dioxide, methane, and so forth, listed in Annex A of the Kyoto Protocol. How much each individual Annex I party is required to reduce their emissions by is stipulated in Annex B of the Kyoto Protocol. In the Kyoto Protocol the parties are also required to review the Protocol according to article 9. Article 10 of the Protocol reaffirms the Framework Convention's commitments to producing the national inventories, and article 11 reiterates the commitments of financial assistance for developing countries. The Framework Convention and Kyoto Protocol really work in tandem.

Several entities are created under the Framework convention and are referenced in the Protocol. The Conference of Parties (COP), the supreme body of the Convention, has been meeting every year since the treaty entered into force. Once the Kyoto Protocol entered into force in spring of 2005, the COP, serving as a meeting of the parties to the Kyoto Protocol (COP/MOP), could finally meet for the first time, which they will do in a week's time in Montreal. The Secretariat and the two the subsidiary bodies I just talked about in the context of the Framework Convention also perform functions under the Kyoto Protocol.

Now, the big innovation introduced with the Kyoto Protocol, and what the United States had been pressuring for, was to have flexible market-based mechanisms. There are three of them: the Joint Implementation stipulated in article 6 of the Kyoto Protocol, the Clean Development mechanism in article 12 of the Protocol, and Emissions trading in article 17. Article 18 talks about the noncompliance mechanism, which is also an innovation because it is not only facilitative, as which is available in several other international treaties, but it also has an enforcement procedure. The Marrakech Accords, which operationalized the Kyoto Protocol, came up with a lot of the rules on how these mechanisms would work in 2001.

Article 25 has the entry-into-force requirements. It is a two-tiered process. First, you had to have fifty-five states, incorporating parties

included in Annex I (industrialized countries), ratify the Kyoto Protocol. That was the easy part. They reached that threshold very quickly, but then it had to be 55% of the greenhouse gas emissions of the Annex I parties, and that could only be reached by having Russia join. On February 16, 2005, thanks to Russia's ratification of the Kyoto Protocol, these requirements were fulfilled, and the Protocol finally entered into force. This was a deal cut with the EU. In return for its ratification, the EU would help Russia obtain membership in the World Trade Organization (WTO). This is what they are hoping for since the United States did not ratify and instead withdrew from the Protocol.

I have a slide on emissions trading, which is a market-based mechanism where you cap the amount of GHG emissions you can emit, and then you can trade the surplus if you manage to further cut down your emissions. The emissions trading mechanism takes place only between Annex I parties (developed countries). It is similar to the sulfur trading that has been going on in the United States for several years. The commitments under Annex B of the Protocol stipulate the emission reductions targets the states have to reach by the end of the first commitment period. In a manner of speaking, it is as if the states are allowed to sell the space in which they can emit GHGs. When you can cut down more than what your commitments require, then you can sell that space to another state. The other state can then apply the credits toward its commitments.

This is allowed, of course, if you look at the globe as one because, obviously, all of these gases do not look at where the borderlines of any country or nation are. The cuts can be made irrespective of where the gases are created. It still makes it cheaper if you have done everything you can domestically. Then you can trade with other states to get credits or allowances to apply to your commitments. You can also sell the credits when you do not require them for compliance because you have already reached the targets. There are, however, many drawbacks.

The Kyoto Protocol system also talks about "hot air." All the former Soviet republics had very "dirty," highly polluting industries, but a lot of them just closed down after the Soviet Union fell apart. They are getting new industries with environmentally "clean" technologies. This easily reduced their amount of emissions, so they have a surplus of space in which to emit GHGs. They can sell this "hot air" to other states. So you say, "Well wait a minute, where is the benefit to the whole system?" But despite this argument, trading "hot air" is a way of starting up the system. You can argue about it, but it is still a possibility. It makes for more incentives. Annex I parties are required to hold a minimum level of

credits, so they cannot sell off all of it, otherwise they will not have any space to emit GHGs, since they will produce more GHGs as they develop. Furthermore, emissions trading shall be supplemental to the domestic actions. So you have to do something domestically in addition to using emissions trading.

Now, for emissions trading to work, there have to be strict rules on how it is going to be done because, otherwise, you can have fraudulent transactions, and the system will lose credibility. You have to enforce caps to make this system work. When there are scarcer credits they become more valuable and there is more incentive to control the emissions, because you want to cut down your emissions so you can sell them and you can make more money. In January 2005, Europe had already started their Emissions Trading Scheme. At that point, it was nine dollars per ton of carbon, that is, the price of the allowance to emit one metric ton of carbon dioxide. Joint implementation, the second flexible mechanism, entails that you can have projects arranged between industrialized countries cutting down on emissions. For example, the U.K. can set up a project in Romania or Poland, and then get credit towards its own emission reduction goals in the U.K. Mostly these projects take place in economies in transition, such as the Czech Republic. There is also a supervisory committee established to monitor the mechanism which is stipulated under article 6 of the Protocol.

The third flexible mechanism, the clean development mechanism (CDM), is something totally different. We are still talking about projects, but we are not talking about projects between industrialized states. We are talking projects between industrialized states (Annex I parties) and developing countries (non-Annex I parties). This is the only flexible mechanism where developing countries can participate in mitigating the effects of climate change. They cannot trade emissions like the industrialized states can, but they can have projects in their countries carried out by Annex I parties. These projects then give credits toward the Annex I countries' emission reduction commitments. These projects are meant to promote sustainable development in developing countries. They also represent another way of bringing money and technology to developing countries.

Private entities are also involved in this system, which is, as mentioned, a market-based mechanism. It has an "additionality" requirement, which means that whatever your project might be in the developing country, it has to result in additional emissions reductions than would have occurred if the project had not taken place. If the developing country were going to build a coal fired power plant, and you, as an Annex I country, brought in

technology for a gas fired power plant, then additional GHGs would be removed, qualifying the Annex I state to get credits that it can use toward its Annex B commitments. CDMs projects also have to be in addition to domestic efforts to cut down GHG emissions in the industrialized states. CDMs projects got underway in the year 2000. Two percent of the proceeds from CDMs go towards helping developing countries most vulnerable to climate change to meet their adaptation costs.

This is complicated material, but if you go on the internet, there is the web site for the Secretariat of the Framework Convention, which has a wealth of information on these issues. Thank you very much.

DOUGLAS WILLIAMS

Thank you, Professor Halvorssen. What I would like to do now is to begin a discussion on a number of topics. Probably the most prominent issue here with the Kyoto Protocol has to do with the United States' decision not to ratify this protocol to the climate treaty. And there are, of course, large concerns about what that non-involvement might mean. To get things started, I would first like to ask the panelists about the prospects of the United States actually getting re-involved in the international process. And I can start with you, Professor Halvorssen. What do you think about the prospects of the United States coming back to the table? If not now, perhaps during a second commitment period after 2012?

ANITA HALVORSSSEN

I would hope so. It is looking pretty unlikely right now, but this administration might not be there in another three years and a new administration might have a different outlook. The other part is, I think, awareness-building is happening to a larger extent in the United States now than in the past. Of course, if you are not a scientist, it is difficult to know what is what, but it is clear there is a consensus on the science that this is a problem, it has to be dealt with, and it is human activity that is creating this problem. So where does this take us?

The media does not portray it as a consensus. What the media does say is, "Well we have to take both sides of the story and give them equal time." But that is not correct. So there is a problem there, but I think more and more people are coming around because the effects are already happening in the Arctic, which have had an impact on the Inuits' lives. It is clear that the glaciers are melting, and if you have been to the Glacier National Park, it is not the same as it used to be. There are real changes out there. I think there is a chance that the United States will come back to the table, because public opinion is going to change, and the businesses

are going to get involved. Because they want to make money, businesses in the United States can say, “Well, we could be the ones to do emissions trading who make a quick trade and make a profit and that sounds like something along the lines of the stock market,” which is true enough. But you also have oil companies. The European oil companies have a different outlook than the American oil companies, which is strange. British Petroleum (BP), for instance, is involved in emissions reduction programs, and they are saying climate change is a problem that needs to be addressed. They are improving energy efficiency, whereas Exxon Mobil is not interested. They are still wondering about the science.

DOUGLAS WILLIAMS

Mr. Healy, I wonder if you might address this too, because there has been a ground swell of activity domestically coming from the states, from religious leaders, and a variety of sources. What do you make of all this and where is it taking us?

J. KEVIN HEALY

Well, I think the first thing to mention is that the Bush administration has decided not to get into the Kyoto Protocol regime primarily because of its concerns with respect to the economic consequences of imposing mandatory controls on CO₂ emissions in this country. And I believe that bad news has been rolling in as a result of research that has been done by the United States and other countries. The United States is one of the leaders in research in this area, and the research is confirming that the models that were originally predicting climate change are turning out to be substantially correct. The symptoms of climate change are beginning to show, as just mentioned. So the bad news is rolling in, and the result of that is that pressures are building from all different directions for mandatory controls in this country.

Clearly, the environmental groups are at war with the Bush administration. Robert Kennedy, Jr. has written that President Bush is the worst environmental president ever. Those are harsh words, but that is what he—representing a major environmental group—is saying. So it is no surprise that the environmental groups are frustrated and pushing for some meaningful action on climate change. But, because of the really catastrophic consequences being predicted and the fact that symptoms are beginning to present themselves, pressure is coming from other directions as well. For example, the religious groups, the Catholic Conference of Bishops, the National Association of Evangelicals, and the Council of

Churches, have all gotten together and called for mandatory controls on the emission of greenhouse gases.

Politically, the pressures are building, even within the Republican Party. Senator McCain is pushing very hard for mandatory controls in this country, because he does not believe that voluntary controls and voluntary initiatives are working. He believes that mandatory controls are the only way to effectively reduce greenhouse gas emissions. The Senate, in June of 2005, passed a resolution that said, first of all, that it looks like greenhouse gases are causing or are at least partially to blame for causing the change in the climate that we have been experiencing, and said that mandatory controls are going to be required. The Senate passed that resolution just this year.

As we mentioned a few minutes ago, many states are pushing very hard for action on climate change by the federal government. Twelve states have sued the federal government to have CO₂ recognized as an air pollutant under the Clean Air Act. In this lawsuit, the states contend that the EPA has an obligation to regulate carbon emissions from motor vehicles under section 202 of the Clean Air Act. That lawsuit thus far has not been successful, but the fact that it has been initiated by twelve states is a really amazing thing. There have been many other legal initiatives and litigations commenced to get something done at the federal level to address climate change. But there is pressure—political pressure and legal pressure—being brought to bear on this issue as well.

Internationally, the United States is being styled as an outcast with respect to climate change. Our close ally, the U.K., is pushing very hard for us to get into the mandatory controls game. Prince Charles has recently referred to climate change as “terrifying.” The English are very committed to addressing the issue, and they are trying to get us committed as well.

And as mentioned a second ago, even corporations are starting to push. BP is one, and Duke Energy another. The CEO of Duke Energy is beginning to make comments seeking mandatory federal greenhouse gas controls. Cynergy, General Electric, and several other major corporations are doing the same, and I think that the primary reason for that is the fact that there is an atmosphere of uncertainty and confusion that has developed around this issue, and business does not like uncertainty. They need to plan, and they need a road map to plan by.

All these things are coming together to make me believe that mandatory controls are inevitable in this country, whether sooner or later. The only questions are (1) how we are going to do it, and (2) when we are going to do it. And, if there are going to be mandatory controls in this country, then it is clear to me that it would make sense to coordinate it

with an international regime in one way or another. Whether that is going to be the Kyoto Protocol as we know it or not, we will have to see, but I think that there will be some serious discussion about this in Congress, and there is going to be some progress along those lines in the very near future.

DOUGLAS WILLIAMS

What about the shape of any domestic policy? Mr. Werksman, maybe you can help here. Talk about how the United States was instrumental in fashioning what we now know as the Kyoto Protocol, particularly the flexible mechanisms. Does that suggest that anything we are going to do domestically will take the form of a cap and trade program, similar to the sulfur dioxide program in the Clean Air Act?

JACOB WERKSMAN

Well, I think it is an important point to keep in mind that, even with the growing acceptance that climate change is a problem and this country has an obligation to do something about it, there is a gap between that and actually joining the second commitment period and signing some aspect of the Kyoto Protocol. In saying that, I think it is important that we acknowledge that when you are dealing with an international legal regime—an international treaty—there is no law without consent, and there is no consent without consensus about the approach amongst all the countries that are going to be involved.

We had that consent. In 1997, the Kyoto Protocol text was adopted with all those elements that were outlined on the power point projector and the United States was absolutely instrumental in that design. The vice president of the United States at that point, Al Gore, who some of you may remember and who has written on this topic and feels very personally committed to it, turned up in Kyoto and signed the United States up to a seven percent reduction from its 1990 levels of greenhouse gases. One of the reasons that the United States felt so comfortable in signing up to it was because it was so instrumental in the design. Essentially, the major inspirations for design of the Kyoto Protocol were the Montreal Protocol, which has successfully been cutting down the production of ozone depleting substances and has made great progress in patching the hole in the ozone layer over the poles, and secondly, the U.S.'s design of its own domestic emissions regime, the Clean Air Act, and its efforts towards a cap and trade program, with a most efficient way of setting legally binding caps on emissions of sulfur dioxide and then allowing companies within the United States' jurisdiction to seek the cheapest way of reducing those gases by setting up a market in tradable emissions permits. So the United

States was very much on board at that stage for a whole variety of reasons that we might get into later. It certainly signaled, at that stage, that international law, by adopting what we had learned from solving other global environmental problems and the best practice of what we were doing domestically, could actually offer a kind of global solution.

If the United States is going to be reengaged, it may be in the sort of bottom-up way that people are beginning to discuss now. As pressure builds for us to do something, we will begin at the local level—at the state level—to put in place local cap and trade mechanisms. If that gets federalized, again, there will be pressure to seek out the cheapest opportunities for emissions reduction, which will not be in this country but will be in other countries, like developing countries, where the energy production is much less efficient than it is in this country. That may then reengage the international community to figure out, if we are individually designing cap and trade programs within each jurisdiction, how to then begin to join them together again in some sort of internationally linked process. It will be, I think, through a gradual consensus building from the bottom up that will then drive us towards an international treaty, unlike the original design of the Kyoto Protocol, which was very much, I think, a top-down approach where we had these great ideas from past experience about solving a much more tractable problem: the ozone problem. And, when we tried to apply it to the ultimate challenge of regulating every aspect of human activity that emits greenhouse gases, which is just about everything that we do that takes energy, the ambition did not quite match the tools and political will that was necessary to actually get everyone signed up at that moment in time.

DOUGLAS WILLIAMS

Is there any indication now that a cap and trade program might actually work? I know the EU's program is starting up. Is it going to work? I wonder, Mr. Pizer, if you can talk a little bit about what would really make for an effective emissions trading program and whether there is any real possibility of it happening?

WILLIAM PIZER

I think the question of whether or not a cap and trade works depends on how you look at it. The EU emissions trading program is working in the sense that, right now, there is an incentive in Europe to reduce CO₂ emissions in the power sector and four other sectors that are involved in the European Union Emissions Trading Scheme (EU-ETS), and that price

right now is actually not the nine dollars mentioned earlier. It is up, I think, around twenty dollars. It peaked earlier in the year at around thirty.

The thing to think about with carbon dioxide that I want to emphasize here is that, unlike SO_2 and the acid rain program, or ozone depleting substances that were regulated under the Montreal Protocol, for CO_2 —which is the principal greenhouse gas caused by burning fossil fuels—there are no ways to reduce emissions once you burn the fossil fuel. So the only things we are talking about doing when we are talking about reducing CO_2 emissions is either switching among fossil fuels, burning less coal and more gas, or simply using less of them overall. There are some technologies down the road that might capture and sequester the emitted CO_2 , but those are particularly expensive.

This brings me to the point I wanted to make to answer your question. A cap and trade system by itself, which is something that puts a price on carbon dioxide emissions and creates an incentive for people like you and everybody else to go out and reduce their emissions, is likely only to be part of the solution. That is because climate change and solving its problems are fundamentally about developing new technologies. Unlike the acid rain program and the Montreal Protocol that were about trying to get people to adopt existing technologies to solve a problem, this is really about getting people to do things and invent new technologies. If we think about that, the kinds of incentives that you would create by just using caps—which is the Kyoto Protocol approach, and the approach in the EU-ETS, and the acid rain program—is going to be really tough.

I recently saw an estimate that in order to encourage the private sector to capture and sequester carbon—the way we keep using fossil fuel without emitting CO_2 —would require an incentive on the order of thirty dollars per ton of CO_2 . If we were going to try to put that sort of a price on emissions in the United States, it would create a \$200 billion dollar market for CO_2 . Now, if you think about it for a second, \$200 billion is about the amount of the revenue of the electric generating sector as a whole. It is about ten times the size of the revenue in the coal sector. So we would be talking about an incredibly invasive program in terms of changing the prices of energy products in the United States. So I think what is much more likely is a cap system, like we have in the Kyoto Protocol or the EU-ETS, coupled with technology programs, and perhaps coupled in a way whereby the cap and trade program is actually financing the technology programs. And I think it is through that sort of a program, the marrying of an incentive on reducing emissions and some other incentives to adopt new technologies, that we are eventually going to be able to make headway. Once the United States begins to adopt that sort of a program—

and I agree with the previous speakers who said that is likely to happen at some point—I think we can then return to the international stage and begin to think about the kind of international treaty that would embrace that sort of action.

DOUGLAS WILLIAMS

What about time lines here? If we are talking about technological fixes, we have to have a fairly long lead time. Does that suggest, perhaps, that the kinds of targets that are specified in the Kyoto Protocol are unrealistic? I have heard reports from Europe that suggest that the European community is really not on track in terms of reducing its emissions. How do we get from here to there? Is Kyoto fundamentally flawed in the sense that it sets these targets with a fairly short lead? Would anyone like to comment?

ANITA HALVORSEN

I was recently on the website of the Secretariat of the Framework Convention, and noticed that they have just come out with a report called Greenhouse Gas Inventory Data, and they talked about the EU reducing their GHGs by 6%, which is achievable, and they are on that target. Of course, that is due, in no small measure, to the industries from former Eastern European states that can now easily replace their existing technology with cleaner technology, thus reducing their emissions. As a result, they have a lot of “hot air” that they can trade. So, it is not looking so bad, but going ahead is another issue because it is easy to take simple measures—using existing cleaner technology and energy efficiency. But then you have all the headaches of figuring out the next step.

WILLIAM PIZER

I was just going to add that one of the things that they are facing in Europe is that there were a number of things that happened since 1990 which made their compliance with their target a little bit easier. One thing was East Germany reunified with West Germany and got the benefit from the reduced emissions after 1990 in Eastern Germany. There was also a switch to natural gas in England that reduced their emissions when they stopped using as much coal.

But, if you look at the trends in all these countries, emissions are actually going up. They are below their targets, but they are rising in some sense. So I think they are still going to be confronting problems, as you noted, moving forward.

If I could make just one quick point, what people do not realize is that the U.S. target in the Kyoto Protocol was actually much harder to achieve than most other countries' targets and that is driven in large part by the fact that the United States, unlike most countries, has been experiencing a lot of population growth. And population growth drives emissions growth. So while a lot of countries were looking at being a few percentage points—maybe five or ten percentage points—above what their target was, the United States was looking at being about thirty percent above its target. The only other country that really had that sort of a problem was Canada, which has similar population growth. So for the United States, that was a really tough goal. For countries without population growth, it was a little bit more reasonable.

ANITA HALVORSSSEN

You are talking about domestic efforts?

WILLIAM PIZER

Domestic, yes.

ANITA HALVORSSSEN

That is the whole point with the flexible mechanisms. They can facilitate trade with other states, right?

WILLIAM PIZER

Right. If you could trade and get all the hot air out of Russia and Eastern Europe that was forecast to be there, potentially that would have solved a lot of the problems.

ANITA HALVORSSSEN

And the projects under the clean development mechanism carried out in developing countries could bring a lot of credits to the Annex I parties (industrialized countries) to use toward their emission reduction commitments.

WILLIAM PIZER

Which is stuck right now. The clean development mechanism is not working. I mean, if they are not approving projects at a rate they will actually—

ANITA HALVORSSSEN

They have approved thirty-five projects and they have got 400 projects coming down the pipeline.

WILLIAM PIZER

Yeah, but the rate at which they are approving them, I think somebody could—

ANITA HALVORSSSEN

But it is still worth the effort. I have not heard that it has gotten stuck.

J. KEVIN HEALY

I think the problem is that there is a bottleneck.

WILLIAM PIZER

Maybe that is a better way of expressing it.

J. KEVIN HEALY

My understanding is that there are going to be somewhere around 100 coal-fired power plants coming online in the United States over the next couple of decades, or at least they are in the pipeline, and hundreds, literally hundreds, in China. The question is about the technological fix and the pace at which progress can be made. The Department of Energy, as I understand it, is putting a great deal of time and effort into development of technologies for stripping out CO₂ from emission streams from power plants and somehow using pipelines to convey that CO₂ for geological sequestration. And I guess the question I have for you is whether that is a workable way to make progress in the short term or medium term?

WILLIAM PIZER

I think your lead into that question answers it. The way I always looked at it is that we have got to figure out a way that we can continue to use coal and solve the problem of climate change. If not for ourselves, for China. Unless we want the rest of the world to be using nuclear power, there really are not a lot of other viable sources of electricity that are not fossil-related. That said, it is a tough problem.

I have started by saying that the estimated costs right now for capture and sequestration is about thirty dollars per ton of CO₂. There are lots of unanswered questions in that number, however, especially about how well the CO₂ will actually stay in the ground once you inject it. I was recently

talking to someone (since we are at a law school I guess it is relevant) about the liability issues. Once you inject it into the ground, who is actually liable if it leaks? So trying to deal with all these physical as well as regulatory issues I think it is going to be one of the real problems.

ANITA HALVORSSSEN

What if you look at alternative energy? You focus and put in a ton of resources and a ton of scientists and you make that the first priority. Would that make a difference on the economics because they say the alternatives are too expensive, it is not worth it, and we cannot go that way? We've got to carry on with what we have.

WILLIAM PIZER

Well, I think, you are talking about renewable energy. I think there are some very promising renewable energy sources. Wind is clearly competitive with conventional power right now. So that is a huge success. But there is a question about how much wind power, as well as renewed environmental objections to wind power, that may create some limits for that. Solar has been something that people have always been very excited about. The Japanese have been pouring money into solar for the past twenty years, and now it is at about twenty cents a kilowatt hour, which makes it useful for certain applications, but does not bring it nearly into competition with coal, which is like three cents a kilowatt hour. So if you are talking about creating a technology that developing countries would want to embrace, or that we would be able to embrace in a large sense, I am not sure. There are also bio-fuels that might be interesting alternatives, but I have not seen as much work on that.

ANITA HALVORSSSEN

But when you mentioned Japan pouring research into it and money into it, has the United States done that for any of the alternative energy forms? Pouring it in? Has that ever happened? I got the impression that the renewable energy research was getting its budgets cut.

WILLIAM PIZER

I have not—one could look at the Department of Energy (DOE) budgets. I do not know off the top of my head.

DOUGLAS WILLIAMS

I think Jacob wanted to jump in here.

JACOB WERKSMAN

Well maybe not with the answer to that question, but I think that the general issues that we are looking at are what kind of changes in behavior are we trying to achieve. And I think there were two visions that we looked toward in creating the Kyoto Protocol. One was a change of behavior in terms of simply being less profligate in our use of energy. Is there a way in which you could create international law that would make people more conscious, countries more conscious, and economies more conscious about the amount of energy that they are producing? The other vision was the drive towards new kinds of technologies. You know, are we focused more on trying to find the technological fix that essentially allows us to do whatever it is that we want to continue to do in terms of energy use and not suffer the consequences, the climate change consequences? Some of the visions that are emerging for sort of a post-Kyoto world or a Kyoto-plus, or a second version of Kyoto, I think are focused much more on the technology side of things than on the legally binding sort of hair-shirt of everyone agreeing to cut back on their emissions. One of the ways in which you can sort of predict where the world might be going is by looking at the European experience. They are the ones that are under the Kyoto Protocol. They are the ones that, at least now, are holding firm and steady, and they think this is a regime they are going to continue to support and participate in.

DOUGLAS WILLIAMS

If I may interject here, how firm do you think they are? Isn't Tony Blair sending sort of mixed signals these days, talking about the next commitment period being something that is shaped radically different than the Kyoto Protocols?

JACOB WERKSMAN

He certainly is. And if you want to see the mediating force between what the United States wants and what the Europeans might aspire to, usually you look to the U.K. and what they are doing. On the positive side, the U.K. had the leadership on the G8 this year. And they had a big summit in Glen Eagles, Scotland, and Blair identified two main priorities in his platform. One was Africa and the other was climate change. So the U.K. continues to say that this is a critically important global issue for them, but then [Blair] has gone on to ask, "Where does the solution to climate change lie?"

He recently wrote an editorial in *The Observer*, a left-of-center newspaper in the U.K., in which he sent some mixed signals. He clearly

came out that he thought that the next phase has to involve legally-binding commitments. This is still the forefront, but the shape of those commitments, and what we are going to form the consensus around in order for the consent which is essential for commitments to actually take shape, was much more technologically cooperation-oriented than caps-oriented. All of the language was about cooperating on developing new technologies, and then sharing them—to your point about the importance of China reforming as well as the United States reforming its energy use—and sharing them in those countries whose energy use is beginning to grow.

Now I do not know what that looks like in terms of the commitment. Is the commitment to pour in more money? Is it sort of an obligation that each country will put a certain percentage of their annual budgets into renewable energies or alternative approaches? Is it an obligation to provide additional funding, to developing systems, in countries like China or India, to uptake that new technology? It is not at all clear. But if that is the logic of where he is going, it is definitely a very different shape of international treaty than what we saw in the Kyoto Protocol.

DOUGLAS WILLIAMS

Let us talk for a minute about the issue of the cost of hitting our targets. And that was one of the United States' principal objections, or at least an objection articulated by President Bush. The other one was the lack of commitments on the part of some fairly large emitters of greenhouse gases and the fastest growing nations in terms of greenhouse gas emissions, particularly India and China. These countries have come up a couple of times. And can we bring these people to the point where they are willing to accept a binding commitment? Are the developed countries in a position where, perhaps, they can begin to think about developing low emissions projects or other technology transfers instead of sitting on the sidelines and hoping for clean development mechanisms? Can we expect them to come to the table with something to offer?

ANITA HALVORSEN

As I mentioned earlier, differential treatment for developing countries comes into play when you look at the issue historically. Who has been emitting most of the GHGs in the process of industrialization up until recently? There has been a paradigm shift in international environmental law. Developing countries are not industrialized, so why should they be punished while they are trying to develop and get their economies going, trying to catch up with the industrialized nations? Why should they be

punished for something they did not do? It is an equity issue. And then with the Kyoto Protocol, the whole system, from the adoption of the Framework Convention to the entry into force of Kyoto, is very specific. The idea was for the industrialized countries to take the lead in taking on binding commitments. So with the United States emitting one quarter of all greenhouse gases on earth having pulled out of the Kyoto Protocol, then what is the motivation or the feeling of obligation by developing countries that were waiting for the industrialized countries to take the lead to reduce their GHG emissions? So I think I can see their point. Why should we do anything if the United States has pulled out? But if you look at China, they are moving right along on technologies. They have even planned to use hydrogen buses for the Olympics in 2008. So they are really trying to push their own system. They are getting a lot of advice from industrialized countries. They are a little ahead on this, and their own people, their own scientists, are getting on with it. They are seeing the effects. They are part of the Kyoto Protocol, but they do not have commitments because that was the deal under the Kyoto Protocol: industrialized countries were to take the first steps. So you say, "Well, that was fine for the first commitment period, but they should get reduction commitments for the next commitment period because when Kyoto was set up, they were not as big emitters as they are now, soon surpassing everybody else on greenhouse gas emissions."

DOUGLAS WILLIAMS

Certainly, if our objective is to reduce greenhouse gas emissions in such a way as to mitigate the potential ill effects of climate change, we have to bring those countries in at some point. There certainly is the argument from equity, but there is also just the practical argument that without these countries' participation and meaningful commitments, at least to slow the rate of growth, what the rest of the world is doing may be inconsequential.

WILLIAM PIZER

You are exactly right. And I am less optimistic, even if the United States were in some sort of a global capping program, that we would be able to convince developing countries to join. My experience talking to people, or talking to people who talked to people in these countries, is that their priority is development. Their priority is industrialization. Their priority is making sure their people can eat, be sheltered, heated, and warmed, and transported. Those things all require energy. If your cheapest source of energy is coal, and the alternative is importing some sort of fuel,

you are really going to turn to your coal first. And that is why, when I think about the technology solutions, or I think about the picture of a solution in the future, it is some sort of agreement where we are sharing technologies with them, which we have developed, that are not too much more expensive than what they would otherwise use.

DOUGLAS WILLIAMS

Can we picture a time when, instead of making the mistakes we have made to get here, production of power and energy will be possible in a more sustainable and clean way? Mr. Healy?

J. KEVIN HEALY

If you think of the numbers, it really is astounding. My understanding is that in China, there is one car for every couple of hundred people. In the United States it is one car for every 0.77 people.

DOUGLAS WILLIAMS

I guess it is a bit sanctimonious for the United States to stand by, and say, "Well, we want you guys to get involved, but—"

J. KEVIN HEALY

That is one take on it. The other take on it is that the ratio will shift as the economy of China builds and gets more robust. It will shift, and when you think of it, the solution will not be that you cannot have a car. The solution is going to have to be some sort of technological solution.

ANITA HALVORSEN

And the Kyoto Protocol is set up to do that also. In other words, the richer industrial countries, Annex II parties, under the Framework Convention, are supposed to contribute the funding so that these technology transfer programs can move ahead. And they have set up special funds for the least developed countries to help them with technology assistance. And the clean development mechanism will move projects to those countries too, thereby also introducing new technologies. So I think there is progress. There is no doubt about it.

DOUGLAS WILLIAMS

You mentioned that the MOP is having its first meeting in Montreal literally as we speak, or in the next week or so. What is on the agenda there? I know one of the items to be discussed is what happens after the

first commitment period? Any ideas? Anybody have any insights on what the discussion is likely to look like?

JACOB WERKSMAN

My impression is that it is going to be largely a procedural meeting and that there is not going to be any negotiations of great substance there. But my guess is there will also be a lot of positioning, especially given what has been in the press from Blair, and from Bush, and from all that has been happening with the developing countries. There will be a lot of signaling of where people want to go next.

The Secretariat has indicated that they do not expect any formal submissions, from parties to the negotiations, for the second commitment period until the beginning of next year. That is when they would expect them to come in. So I think that maybe there will be a lot of posturing, and probably a lot of support from the Europeans about the continuing maintenance of the regime. There is importance in there still being a forum in which there is negotiation of rules and common policies on climate change even before a lot of negotiation of substance. It is the first meeting of the Kyoto Protocol parties.

ANITA HALVORSSSEN

I picked up on the Secretariat's web cast. They are also talking about how technology really is part of the problem, as in cars making the pollution. But then technology is being used to come up with the solution. So they are also scheduled to discuss the capture and sequestration possibility of CO₂.

JACOB WERKSMAN

I wanted to come back to this issue of where is the hope that we are going to get developing countries, especially the larger developing countries, on board? And I think that one of the many things that is changed since 1990 when those rules were set, when we set up the dynamic of the Kyoto Protocol based on the North taking the lead and the South following us as we lead, is obviously all the economic and political developments that have taken place. What has also become true is that they have become more like us in all the good ways and all the bad ways.

So when we look for hope, for what would move them to take steps, it will be very similar to what is going to move us to take steps. It is going to be continuing local air pollution from the burning of coal; cities choking slowly on the emissions from power plants and also cars. It is going to be a growing awareness of the high costs of certain fossil fuels, and the

pressure, as the cost of using petroleum and natural gas rises, to look for alternatives. It is really going to be those factors that will begin to drive the political will from the grassroots to begin to look for alternatives; to begin to figure out what it is in their national immediate interests; to begin to look for alternatives and solutions. It is the same dynamic that is happening here.

DOUGLAS WILLIAMS

There has been one development that was touted a bit recently. Is it the United States' intention to participate in the Asia-Pacific Partnership on Clean Development and Climate? Notably, India and China are somewhat involved in the process. Does anybody know very much about what is going on here? There have been some suggestions that these sorts of regional agreements are putting the whole climate issue on a different track which might undermine the Kyoto Protocol. Anybody?

WILLIAM PIZER

My impression is that since 2000, when the Bush administration came in, and even before that, the United States has always been pursuing these sorts of bilateral or mini-lateral exercises. And I think that, until there is real money so the people in these countries actually see some tangible benefits, I am personally a little skeptical. I think it is kind of the repackaging of existing commitments, but I am not knowledgeable about it. That is just speculation.

J. KEVIN HEALY

The only thing I can say about it is when the announcement was made, it was made clear that it was intended to be supplemental to Kyoto.

JACOB WERKSMAN

It is interesting to speculate why. The press releases that came out of the State Department and Australia all made the point that this was not an attempt to undermine Kyoto and it would operate in parallel with Kyoto. And to speculate whether that was the United States taking into account the sensitivities of the Europeans because it did not want to be seen as undermining the regime that Europe has continued to support, or it was the developing countries trying to make the point that this space that we have reserved for us under Kyoto, which says no new commitments for us for the time being, is not to be undermined by these agreements; that they do not want to see our beginning of a partnership with the United States and

Australia over greenhouse gas emissions as suggesting that we are ready to undertake any kind of commitments yet.

[The Asia-Pacific Partnership] has a lot of parallels with what Blair has been saying in terms of the focus on technology, and the need to engage not just the existing parties to the Protocol and not just those that have commitments, but also the United States, Russia, China, and India. All of that language is very similar to what the Blair administration has been saying recently. The only main difference is that Blair used the term “legally binding commitments,” whatever shape they may be, and the State Department certainly did not include those in the Asia-Pacific Partnership.

ANITA HALVORSSSEN

Just to add on to that, there is the Pew Center on Global Climate Change that came out with a report. It is an international group that addresses some of these very same issues that is looking at doing parallel tracks where it might not be Kyoto 2, but it would be something connecting it with the Framework Convention on Climate Change. That just came out last week.

DOUGLAS WILLIAMS

Let us talk a little bit more about this equity issue. Professor Halvorsen, I know this has been a topic of concern for you. Tell us about how the Clean Development mechanism might be an avenue for equitable arrangements, and whether there are any serious problems?

ANITA HALVORSSSEN

There are. The whole bureaucracy, and how it is supposed to function, is a problem right now. Like you said, there is a bottleneck. That is one of the issues they are going to talk about at this meeting a week from now in Montreal, the first meeting of the parties to the Kyoto Protocol.

On the equity side, I would say the clean development mechanism will help and will bring some technology to developing countries. For instance, if France is interested in getting credits towards its commitments, it can utilize the clean development mechanism and set up a cleaner burning power plant in China, thus bringing that technology to China. It is a win-win situation, which will help in bringing technology to these countries.

But if you look at the history, you mentioned the Montreal Protocol was the model for the Framework Convention. In the Montreal Protocol, we were looking at the depletion of the stratospheric ozone layer. The Protocol demonstrated that in order to get China and India on board, they

had to set up a fund to help replace the ozone-depleting technology. Because it could not use the CFC, the manufacturers came up with a substitute. The whole thing was that you could move this into developing countries by paying for it. And they had a particular fund, the Multilateral Fund to use, which still works, and the approach has proven successful. So one could think of a similar fund, maybe specific to China and India which are the big emitters that really need help, get them on board somehow, and they might have more incentives. This is not going to happen very easily, but if they became Annex I parties, they could participate in emissions trading also, if they needed another incentive. But to do this, they would have to come on board as an Annex I party—as part of the industrialized group. And some are already saying, “Well, wait a minute. China, with its rapid growth, should already be an industrialized country in that sense.” It is all relative.

WILLIAM PIZER

I am just going to make the observation—one thing that is problematic about the Clean Development mechanism, for those of you that do not eat and sleep it, is that it is fundamentally based on the idea that you want to make sure that every ton of credit you are getting is actually a ton being reduced somewhere in the world. This is where the bottleneck has arisen. They want to make sure that for each of these projects, whatever the credits are, these are real gold plated credits.

The other approach to this is to really think about something like the Clean Development mechanism as a vehicle to channel funds to developing countries for things we want to see developing countries do. The fact that people in this trading program are getting credits for it, that is just kind of the gravy to get the funds to go to the developing countries.

You can imagine a system where you are standardizing the credits—the different activities receive in a much more easily measurable way, which would solve a lot of the bottleneck problems. It would, on the flip side, erase this idea that all the extra tons getting reduced in the industrialized countries are being exactly offset by reductions in developing countries. But maybe that is not so important. You are going to have your price incentive in the industrialized country. You’re going to create this flow of funds for desirable projects in developing countries, and that may free up some of the bottlenecks that we have been talking about.

As I understand it, this is the kind of approach that the northeastern states have taken. They are setting up a small regional trading program in the United States, or they are trying to, for their offset programs. They are

standardizing the offset crediting mechanism so that it does not get hung up on project-by-project accounting.

The one thing I would just throw a word of caution about is the idea of funding the transition through a government-to-government transfer. I am not sure how the funding mechanism works in the Montreal Protocol, but my guess is that it is so much larger for climate change that it may be hard to use the Protocol. The Montreal Protocol's mechanisms may be a good model for what the Kyoto Protocol ought to look like.

JACOB WERKSMAN

Well, we already have a financial mechanism similar to the Montreal Protocol for Climate Change and that is the Global Environment Facility (GEF), which essentially funds through grants rather than by awarding emissions credits.

ANITA HALVORSEN

I was thinking more specifically, similar to the Multilateral Fund. The Fund seemed to be a whole machine on how to get this technology to developing countries. There seem to be several avenues to use to get the technology out to the developing countries, including grants from the GEF. The Multilateral Fund of the Montreal Protocol is very specific: funds are used specifically to replace ozone depleting technology. If that can be arranged with GEF, that would be useful. Then there would be more streamlining, and it may be more effective.

JACOB WERKSMAN

For those of you that are interested in this aspect of international environmental issues—the funding aspect of it—the GEF is going through some really interesting transitions lately in response to what the United States is insisting on in all aspects of this development assistance: for every grant that [the U.S.] gives to a particular country, it wants to ensure that that country has a governance structure in place to use those funds effectively. If you have been following the Millennium Challenge Accounts, which are something that USAID has been setting up to provide funds to developing countries, those developing countries, before they are eligible, really have to show that they have good governance in place—not a lot of corruption. That the actual ministries that are going to carry out that project are operating efficiently.

[The U.S.] has been able now to introduce that into the GEF as well. The tradeoff for doing that—the way which they got the developing countries to accept these new governance criteria for projects on climate

change, biodiversity, ozone depletion, and international waters—was to give these developing countries greater control over how the funding was spent, in exchange for which they agreed that these new governance criteria would be applied. In the past the GEF has relied, as did the Montreal Protocol, on international agencies to pick the best technologies and the best techniques. The World Bank, United Nations Environment Program, and United Nations Industrial Development Organization would design the programs and then the countries would basically have to accept the money with the project attached to it, and implement it.

Now [the developing countries receiving assistance] are going to be given a freer reign. They are the ones who are going to nominate the projects and as long as they meet the governance criteria, they get the money. So it is actually moved a bit in the opposite direction from the Montreal Protocol. It is less technology-specific. It gives the country more flexibility in terms of how they spend the money. Through that process, international law or international institutions have less control over those same priorities.

ANITA HALVORSSEN

I assume there is some accountability as to the kind of projects, and that they are actually using the money and not just handing it over to somebody to pocket in their Geneva account?

JACOB WERKSMAN

If they have good governance, then they feel satisfied that the country is in a position to spend the money wisely.

DOUGLAS WILLIAMS

It seems from the talk I have heard that the clean development mechanism looks to be a win-win sort of arrangement. But it has been controversial. Why is it not universally viewed as a win-win kind of arrangement? I have heard charges of eco-imperialism being leveled in association with this mechanism. What are the developing countries afraid of with this kind of deal?

WILLIAM PIZER

I am not sure. I know one complaint I heard a while ago was that the industrialized countries would come in and do all these projects, come in and do all these cheap emission reductions, and then leave the developing country with a future prospect of not being able to do anything if it were based on some sort of commitment. I have never really bought into that

argument. I am not sure. Maybe some other people have heard some other—

JACOB WERKSMAN

That is the “low-hanging fruit” argument, that the Clean Development mechanism will basically provide cheap offsets for industrialized countries in the first phase of its operation, and then in the second commitment period, if India or China signs up and commits itself to capping its greenhouse gases, it will already have sold off essentially all of the easy emissions reductions, the “big bang for the buck” projects, maybe the forestry projects that are relatively low cost. That is one of the charges that was of concern. Of course, that assumes a lot in order to come true.

In the area of land-use and land-use change projects, you are essentially saying that the way in which the Clean Development mechanism works is that the European Union, or the U.K., or me or one of my companies, invests in a forestry project, for example, in Costa Rica, right? And if I demonstrate year-to-year that the trees are growing more rapidly than they would have done—that additional trees have been planted for each ton of carbon that is fixed by those trees—the U.K. or my company gets to emit more greenhouse gases. That is the kind of deal, right? In order for that to work from an environmental point of view, however, those trees are going to have to be in place for quite some time, right? We are talking about emissions actually released by a U.K. company. They are emitting that CO₂. So those trees have to be there, at least theoretically, indefinitely.

DOUGLAS WILLIAMS

Presumably locking the host state into a pattern of land use, which ultimately may not work.

JACOB WERKSMAN

Right. It commits them to change their behavior. They have to lock in that land-use while the U.K. can continue to emit.

DOUGLAS WILLIAMS

Is there any convergence between the Clean Development mechanism, which I understand can be the result of privately funded projects, and the efforts of some multi-national corporations to push us toward the Kyoto sort of solution? Has there been some support among multi-nationals for moving the United States toward participation in Kyoto? Mr. Healy?

J. KEVIN HEALY

The multi-national companies are really caught between two worlds. To the extent that they have facilities in the United States and facilities in Kyoto countries, they are faced with two different sets of considerations in running their businesses. Because of the limitations that have been imposed on the flexible mechanisms under the Kyoto Protocol to the Marrakech Accords, those companies cannot use reductions in the United States to achieve their targets in the Kyoto countries. So they are betwixt and between, and what they would like is to have some rationalization of the situation where they could run their businesses on a more integrated fashion. So that is the problem. Some facilities are subject to the Kyoto requirements, some are not. Those that are not could achieve reductions and trade them with facilities subject to Kyoto, and those reductions could be used towards the commitments. But as of today, they cannot be traded under the Marrakech Accords.

DOUGLAS WILLIAMS

Let me push this a little bit. I am puzzled that multi-nationals and some other economic enterprises are interested in getting the United States involved and perhaps pushing for some kind of emissions-trading regime. It reminds me a bit about the old saw that they have to have a good economic reason for doing this and part of it might be this problem they are facing, as you suggested. But is it perhaps that we might be experiencing the same kind of bloated estimates of costs that we experienced for the SO₂ program, which in its initial sort of stages was projected to just cost too much. And it has turned out to be a bargain. Do multi-nationals know something that the rest of us do not know? Perhaps about how compliance might be achieved? I know you can not answer these questions. But do they feel like they can profit from an emissions trading regime?

WILLIAM PIZER

I wanted to go over the last question a little bit, and then I will move on to the first one. I think that the hiccup in that argument—and I have heard it made a lot—is that it assumes that the compliance obligations of the company, which in theory gets credits for the United States and then uses them to comply in Europe, in the United States are sufficiently weak that it can actually generate credits. If you can imagine the United States going into a Kyoto obligation situation and ramping down 30% on emissions in the United States which is what would have been required before trading. All the models—well actually—I think most of the models probably

would have had the United States still selling, but you can imagine a situation where that same company is actually creating credits and has to comply in the United States. So I think it really depends on what sort of regime they are envisioning taking place in the United States.

One of the arguments, which I think is very strong for why U.S. companies have been eager to see the United States engage, has been that when the United States was engaged in the Kyoto Protocol, as you pointed out, it was really the voice for a lot of the impressive flexibility mechanisms that were put into the Protocol. Typically, it was arguing against other people who wanted to restrict them in different ways. So there is generally a lot of concern that, when the United States left the Protocol, it was going to leave a lot of important decisions to people who were not as well equipped to answer them. The reality is that the rest of the world caught up to speed pretty quickly and has actually done a decent job of figuring out how to do these things.

The other argument that I have heard, which makes a little bit more sense to me—and again I am just wearing my little “funky economist” hat, which is fairly small—is that the United States, if facing the prospect of a lot of different state-level regulations companies, would rather have a federal policy. And that is a little more sensible. But then, again, it goes to what the federal policy looks like. If the federal policy is much more aggressive, then they are obviously not going to like that. But I think there is some desire for simplicity.

J. KEVIN HEALY

The issue is that, in the absence of some central organizing force like the federal government, there is a hodgepodge of regulation that is starting to develop. You have got Kyoto applicable to the U.S. businesses with facilities in the countries that have ratified the treaty. You have the northeastern and mid-Atlantic states developing their own cap and trade programs for certain power plants, at least in the first instance. You have got certain states, like Massachusetts and New Hampshire, capping carbon emissions from power plants. You have mandatory reporting in New Jersey. You have California imposing CO₂ emissions controls on motor vehicles with New York piggybacking off of that. You have got more than thirty, maybe more than forty states developing climate change action plans. On top of that, you have the conference of mayors who came out saying that their membership is going to achieve the targets of the Kyoto Protocol. So nature abhors a vacuum.

All these entities are moving in to do something about a problem they view as requiring immediate action, and companies are faced with the

prospect of different requirements being imposed by different jurisdictions.

I have been practicing environmental law for more than thirty years, and I have seen this kind of situation before, for example, in connection with the transportation of hazardous materials. In the '70s and '80s, there was a great deal of concern over trucks carrying hazardous materials, and so several localities and states began to regulate that activity. A patchwork quilt of regulations began to develop, and concerned industry leaders went to Congress and said, "We have got to rationalize this. We have to put together a federal program that will preempt localities from imposing regulations and allow them to engage in only certain types of regulatory activities." That was, in fact, what was put into place.

Other examples are the Clean Water Act and the Clean Air Act. The Clean Air Act is really an ingenious partnership between the federal government and the states, under which national air quality standards are set and the states go about the business of achieving those standards. The states put together their own "implementation plans." However, they have to be approved by the EPA, and they are all required to achieve those federal standards. The point is that, throughout the history of environmental regulation in this country, when there was a problem, the localities and the states got together and found their own way to try to address the problem, and at some point it got cacophonous, and the Feds stepped in. And now, the companies that are seeking federal involvement, having that history in mind, would like to somehow get some coordination going.

JACOB WERKSMAN

I definitely agree with that coherence point—that companies want coherence across jurisdictions. Whether they think that Kyoto is going to be the right mechanism to bring the pressure on the federal government to create that coherence is still an open question. You often also hear about a similar point. People say, "Well, companies also want predictability." There is a lot of talk about regulating greenhouse gases, and that creates risk within the system. They really want to be able to predict their costs in the future, so they want predictability.

I think that is right, but I think they would prefer to settle for predictability of no Kyoto rather than predictability of Kyoto. That is better for them, presumably, in the long-term. The only thing, when you are dealing with multi-nationals, that might make things a bit unpredictable is if Europe really begins to cut down on its greenhouse gas emissions, then it begins to put their companies at a competitive

disadvantage. If the European steel industry is going to a higher cost production because they have to shift away from carbon-intensive energy, that is putting European steel at a disadvantage to U.S. steel, which is not under a similar cap. Could trade measures begin to be introduced? Could the Europeans seek to sort of slap an extra tariff on U.S. steel or any sort of non-Kyoto steel? Would they be able to put on a tariff and raise the price? That kind of unpredictability, if we move in that direction, could get multi-nationals concerned about everyone being within the same regime. There are lots of potential world trade implications there, but I think that is important to keep in mind.

The last point I wanted to make was about multi-nationals, or companies anyway, and the extent to which they embrace Kyoto. There are a lot of companies out there who are trying to figure out ways of making money off of Kyoto, those that are involved particularly in the transactions—the ones that want to sell their services to the Clean Development mechanism, and the ones that want to be brokers for the exchange and the trading of carbon offsets—have been at the front line of the companies that have been supporting Kyoto.

J. KEVIN HEALY

That is exactly right. It is General Electric (GE). GE has this incredibly big program called “eco-imagination” where it is pouring a great deal of money into the technology. They see a tremendous area for the expansion of business.

[INTERMISSION]

J. KEVIN HEALY

It is going to be a tremendous challenge to figure out how to have economic growth and prosperity while dealing with this issue. It is also going to be tremendously complicated, and important legally, because where there are difficult substantive problems, we know there are going to be lawyers. I think it is terrific that [law students] are here, and I think it is terrific that you students in the audience are thinking about this issue, because it is going to be of immense importance to your lives and the lives of your families. But it will also be, perhaps, a very interesting aspect of your legal careers. So I think it is terrific to have you here.

DOUGLAS WILLIAMS

Are there any questions that anybody in the audience would like to put on the table? Or any issues that concern you, or responses to what you have heard?

FEMALE SPEAKER (FROM AUDIENCE)

There has been a lot of talk about the new technologies that are out there. Can any of you tell us what there is, and which ones are the most promising?

WILLIAM PIZER

In the power generation sector, the technologies that people are looking at are next-generation nuclear technologies, which are safer and hopefully have fewer of the issues that have plagued facilities in the past. However, you still have a proliferation issue if you are talking about trying to disseminate that technology internationally.

DOUGLAS WILLIAMS

I was watching Late Night with David Letterman. Senator McCain was on the show pushing his bill, and he made a big pitch for nuclear. He seems to think that expanded nuclear energy production lies in America's future.

WILLIAM PIZER

Yeah, he actually lost votes on his McCain-Lieberman bill the second time it came up over the summer because he attached some nuclear provisions to it, and that scared off the California senators. I think nuclear is hugely important. I think one thing you have got to realize is that, for all the wrangling over the nuclear waste site of Yucca Mountain, that site will basically accommodate the waste from the plants we currently have running through their natural lives. So continuing to use nuclear power in the United States is going to require us to build another Yucca Mountain. That is the scale of the waste that we are talking about and obviously people are aware of how contentious that has been. So while nuclear power is important, and there are a lot of technological developments on a modularization of it, the process is certainly one piece of it.

The big piece for the power generation sector is capture and sequestration, mainly because there are so many countries—key countries like India and China—that have such vast coal reserves. And even if we can convince ourselves not to burn our own coal, we are going to have a hard time convincing those countries not to burn theirs. So I think

developing ways that we can burn coal in a way that does not emit greenhouse gases is going to be important.

In the transportation sector, the problem is a lot harder. You have to get rid of all oil as the primary energy mechanism in the transportation sector. You are talking either about fuel cells or electricity, using either hydrogen or electricity as the carrier, and trying to generate those cleanly. In the long run, those are really the options.

In the shorter run and medium run, there are a lot of interesting things like hybrids and diesels. People get very excited about diesel hybrids; they can get several hundred miles to the gallon. We had an earlier conversation about bio-fuels, which are very promising as well. Cellulosic ethanol, for example, makes ethanol from woody material instead of corn. All those things are particularly promising. Those are the game-changing sorts of technologies that would be part of a long-term solution. But, as was mentioned earlier, there is a lot of stuff in the short-term—whether energy efficiency, more efficient buildings, more co-fired generation, better clean vehicle design—that can create important short to medium-term improvements. But they are not going to be the kind of long-term solutions we need. The ones that we need are going to be those I just mentioned.

J. KEVIN HEALY

I just want to second the thought about carbon sequestration, the geological sequestration of carbon. I think that that is something that is being looked to in the short to medium-term as an important component of the solution. Keep in mind, there is a regulatory program in place now for the deep-well injection of waste. The EPA, under the Safe Drinking Water Act, has been regulating the disposal of waste in deep injection wells for many years. That program is not perfect. It does not address certain issues that are important for carbon because carbon is buoyant, whereas these other wastes were not. But there is a regulatory program in place.

There is also technology in place to strip CO₂ out of emission streams. There are extensive pipeline infrastructures in the Texas and Gulf Coast areas that are very possibly going to be used for this. There is serious thinking being given to using CO₂ to eek out the last bit of petroleum in the reservoirs that exist in that area, and in other areas around the world. That is a very tangible and real thing that, as I mentioned earlier, the Department of Energy is looking into in a very serious way. They have set up thirteen or so regional partnerships around the country where they are going to have pilot projects and programs put into place that actually do it. That is one thing, I think, that is going to provide some hope.

DOUGLAS WILLIAMS

Any other questions? Yes? Ryan?

RYAN CANTRELL

This is a question for Mr. Healy. Most of us are looking to maybe go into some area of environmental law. As an environmental lawyer, how do you anticipate the landscape will look in the future? You mentioned that it might shift more towards a federal trademark that governs everything. But in the meantime, how do you, as an environmental attorney, navigate the different regulations that municipalities, states, and potentially federal government will place on environmental carbon change and carbon emissions?

J. KEVIN HEALY

Well what is interesting about it is that you are in on the ground floor. Right now, there really is very little climate change law, certainly in this country. And the prospects are very broad in terms of the reach of that law when you think about it. It flows from basic issues of land-use, to the extent that there is going to have to be smart growth. Even at the planning board level of government, there are climate-change implications, and I think that climate change will inform legal issues from that level all the way up to the level of international government relations. But if I were to guess where the activity would be in the near term for people just getting out of law school, it would seem to be in the project finance area. This is because, with the CDM and joint implementation mechanisms, there will be an additional reason to do energy-efficient projects in other areas of the world because there is now an additional asset—tradable credits—that is generated as a result of those projects. That is why I think that there may be some immediate activity in the project finance area. But you students will also be involved in creating climate-change law.

DOUGLAS WILLIAMS

If I might interject, the environmental community has always been very creative about using existing legal instruments to achieve objectives that, perhaps, were not associated with those instruments at the time of their formulation. In one interesting case, it was alleged that an environmental impact assessment prepared by a federal agency under NEPA was inadequate because it did not deal with the question of impacts in terms of climate change or contribution to climate change. That is sort of a simple example of where this kind of concern might begin to be felt. Are you familiar with that?

J. KEVIN HEALY

Yes I am. Actually, there have been a couple of them. There were a few cases in the early '90s, which were thrown out on the basis of standing, where the plaintiffs or petitioners were trying to get a court to compel the federal agencies to address climate change under NEPA, and to do an environmental impact statement that looked at the climate-change implications of their actions. More recently, there was a case being litigated in California, *Friends of the Earth v. Watson*. That might be the case that you are thinking of, where, to the surprise of many, the court did not throw it out. It was a case that was brought against the Overseas Private Investment Corporation and Import Export Bank, and the defendants moved to have the case dismissed based primarily on standing, claiming there was no injury in fact and no causation between the failure on the part of the government to look at climate change and the injury that the plaintiffs were suffering. That is what the contention was. To the surprise of many, the court felt that, in fact, the substantial affidavits that were submitted by Friends of the Earth, either establishing or documenting the effects of climate change relating to projects across the world, were enough of a showing of injury in fact to sustain standing. That case is actually still going on in California, and is a very important case.

DOUGLAS WILLIAMS

I sense a constitutional law exam question in there somewhere. Anybody? Yes?

FEMALE SPEAKER (FROM AUDIENCE)

What kinds of structures would you like to put in place in terms of enforcement for Kyoto Protocol guidelines, especially if there is no system in place creating penalties for noncompliance?

DOUGLAS WILLIAMS

As I understand it, there is, in fact, a penalty of sorts for noncompliance that was adopted as part of the Marrakech Accords. Something to the effect of a thirty percent greater penalty . . .

WILLIAM PIZER

You have to repay your overage plus 30%.

ANITA HALVORSEN

It is set up to function with this compliance committee, which has two branches: the facilitative branch and the enforcement branch. The problem

is that when they set this in place in Kyoto article 18, they said that if there were going to be any repercussions—if it was going to be binding—they would have to amend the Protocol.

Amending the Protocol would be like starting up a new treaty. You have to go through the ratification process and all that; it would be very time-consuming.

And then you have the scenario where some parties ratified and some did not. They are supposed to get sanctioned, but they are not parties to the amendment, and this creates a problem. But what is happening now is that Saudi Arabia is proposing the adoption of an amendment to the Kyoto Protocol to take on these commitments regarding noncompliance and the sanction methods. If the parties to the Kyoto Protocol go along with it, then it might just come into place through the Conference of the Parties serving as the Meeting of the Parties (COP/MOP). Then you would have to see about the ratifications and whether they are going to do that as part of the amendment process. That will be interesting to see, but they have already taken the step of proposing the amendment.

JACOB WERKSMAN

One of the ways in which the Kyoto Protocol is a really revolutionary international instrument is that it has the capacity, in essence, to enforce. It is one thing for an international treaty to have a binding consequence, or to have some sort of penalty flow from it, a sanction. But to have the ability to actually enforce that sanction is something that is unique to Kyoto.

What Kyoto can do is, if this system—this committee—decides that the U.K., for example, has emitted more than it was allowed to under its cap, it will assign this penalty to the U.K. Because the Secretariat controls the official carbon budgets of all these countries, you look to the Secretariat to determine what each country's assigned amount is. It can apply that [penalty]. And that is something more than the WTO can do. The WTO can only authorize one party to impose a trade sanction against another. But here, we have an international bureaucracy that can actually determine the penalty and apply it directly.

Some people also think that it is the most naïve dimension of the entire Kyoto Protocol for a number of reasons. One is that the second commitment period is the period from which the tons that you have exceeded are going to be deducted. You know that you have two budgets: the existing budget and the next budget. The way in which the penalty is applied is that you are essentially forced to borrow tons from your second budget and use them in your first budget, and then you also get this 30% penalty. But we have not negotiated the second budget yet. So there is

clearly now an incentive for countries that are currently struggling with their compliance under the first commitment period to demand more of a budget in the second commitment period to cover any potential penalties that they might suffer in the first commitment period.

The other aspect that is a bit naïve is [Kyoto] puts you under this sort of constant borrowing chain: if you fail to remain within your cap in the first commitment period, the penalty is to make things even tougher for you in the second commitment period. Is this a way in which you can really reasonably treat a government? Or is that government simply going to withdraw from the regime if you continue to ratchet down on it? So there are amazingly exciting things for international lawyers in these proposals that have been put forth in Kyoto, but they are also dangerous. They may be pushing the international legal system beyond a state which countries and governments will actually tolerate.

The House of Lords, which is the upper chamber of the U.K. parliament—the guys who wear the wigs and the dresses and do not have much power but do have the ability to convene committees and to commission studies—came out with a recent report which includes amongst its criticisms of the Kyoto Protocol, that they have had a “naïve compliance mechanism which can only deter countries from signing up to subsequent tighter emissions targets.” They now see this as one of the flaws. I think this is in part influencing the Blair administration. I take this personally because my colleagues and I were very much a part of that naïve process of believing that we had these really unique opportunities to make binding law. Something that was enforceable, something that, if you had the political will of countries comply with, would work in the same effective ways that the domestic sulfur trading regime and other regimes have worked. But now, after reflection, it is being characterized, by the very governments that led in its design, as naïve.

ANITA HALVORSSSEN

Is that not a question of political commitment not being as strong as it used to be? Because, if you have the commitment, you go with the program just like with the Montreal Protocol. And that was considered a success.

WILLIAM PIZER

Lurking in the background is always the opportunity to withdraw. That has always kind of struck me as an interesting aspect.

One thing I wanted to clarify is that the 30% repayment rate is the restoration rate. It is not, at least it is not supposed to be, viewed in the

context of the Protocol as a penalty. It is basically the interest you would accrue over five years by not having the right amount of tons in the first commitment period versus the second. In the negotiation, it was very important that it not be seen as punitive because one of the few things the United States continues to be active on is issues of precedent, particularly the idea of punitive sanctions under the Protocol.

JACOB WERKSMAN

To add to that, it was the United States that came up with this penalty proposal. When they first came up with it, it was 60%.

WILLIAM PIZER

Yeah, they changed their minds.

ANITA HALVORSSSEN

So was that supposed to include interest too? If they suggest—

JACOB WERKSMAN

No. They are saying that this was basically the discount rate. If you are gaming the system, and you decide to put off some of your emissions now and just accept the penalty later because you think that, for whatever reason, it will be cheaper, you will invest the money, earn interest on it, and then buy the extra tons. When the penalty comes along—they basically calculated that you would need a 60% multiplier in order to essentially make—

ANITA HALVORSSSEN

Less interesting.

JACOB WERKSMAN

The whole goal of the system is to make compliance cheaper than noncompliance, right? That is why the penalty is there—to make sure that noncompliance is more expensive than compliance—and they came up with a multiplier of 1.6.

DOUGLAS WILLIAMS

Yes?

MALE SPEAKER (FROM AUDIENCE)

Underlying the deep mechanistic provision are participating nations, developed nations, developing nations. And for this third group is the idea

that developing nations, at some point, become developed nations. And then you shift it to the other category. How does that actually happen when there is a developing nation and developed nation?

WILLIAM PIZER

You touched on the issue of graduation which was huge. And I guess it continues to be debated because, obviously, when you are a developing country, you have a slightly better deal and the issue of how you define what constitutes graduating into the world of those accepting responsibilities is not clear. There are countries that are not in Annex I, Israel for example, that would strike you as countries whose level of economic development suggests they should have obligations. So this is still a very contentious issue among developing countries. I do not know if anybody else has any—

DOUGLAS WILLIAMS

I do not believe there are any clear criteria for what constitutes the point at which you graduate. I know there have been a lot of markers suggested.

JACOB WERKSMAN

Sure. The idea is that you graduate as you are convinced to join the next commitment period. In some essence, it has already happened in that, in the movement from the United Nations Framework Convention on Climate Change to the Kyoto Protocol, there were economies in transition. Eastern block countries joined the European Union and, in the process of negotiating their Kyoto Protocol commitment, undertook the same level of cuts that all European Union (EU) member states undertook. Essentially, they moved categories in preparation for joining the EU. So the idea is that when we start negotiating in 2012 to 2020, you bring in the other countries. That is how they graduate.

ANITA HALVORSSSEN

Is not the status of being a developing country based on Gross Domestic Product (GDP) that of the United Nations (UN) sets up in its global reports?

JACOB WERKSMAN

Yes. The UN system has a way of categorizing countries. But each individual treaty can categorize them differently.

ANITA HALVORSSSEN

Right. So this wouldn't specify anything different.

JACOB WERKSMAN

The legacy goes back to the Framework Convention, where it was not so much about defining who was a developing country, but rather, who was an industrialized country. They basically used the Organization for Economic Cooperation and Development (OECD) membership at that time to determine which were the wealthy developing countries. The next category—the industrialized countries—included those, plus the members of the Eastern European group in the UN system.

ANITA HALVORSSSEN

Because of that, the OECD now has Mexico and South Korea as members, but they are not part of Annex I.

JACOB WERKSMAN

That is right. Mexico joined in '94 and South Korea in 1996.

ANITA HALVORSSSEN

And Turkey used to be Annex I, but in 1997 they asked to be removed from Annex I.

JACOB WERKSMAN

They were originally OECD members. They have been, pretty much from the beginning, so they were classified as rich industrialized.

DOUGLAS WILLIAMS

Ryan?

RYAN CANTRELL

I know when the United Nations held a convention over the laws they conceived they created an international tribunal to address questions. Is there a similar international tribunal that can have jurisdiction over Kyoto Protocol disputes between countries, or is it just the United Nations? And if there is a jurisdiction, does it have enforcement abilities other than applying those interest rates?

JACOB WERKSMAN

The answer is kind of yes and no. The International Court of Justice (ICJ) does have jurisdiction over the Kyoto Protocol if the particular

parties to the dispute agree to allow it to have jurisdiction. And there is a provision of the Framework Convention that allows you to opt in and say, “If a dispute arises under this convention, we agree to go the ICJ for it.” As far as I know, no country has actually signed up for that option.

That leads me to the specialized dispute settlement—or rather—enforcement regime within the Kyoto Protocol, which is the one we were just discussing. This committee has been set up to look at how much a country has emitted at the end of the commitment period, compare it to their obligation, and impose a penalty if it exceeded its cap. It is not a court in the sense that it is not intended to deal with disputes between parties over differences in interpretation of the law. Rather, it is an enforcement mechanism that is essentially designed as an administrative function to determine whether or not any individual party has exceeded its cap and then to possibly impose a penalty.

DOUGLAS WILLIAMS

Yes, in the back?

MALE SPEAKER (FROM AUDIENCE)

Seeing that our private businesses are second in technology and are being good citizens of the world, are there any changes in the government structure that you could possibly see affecting the power of good will, or see how it changes?

DOUGLAS WILLIAMS

That is a tough question.

WILLIAM PIZER

I think we just have to be a little bit careful. Regarding your example of Japan, it has not created any mechanisms that are going to guarantee its compliance with the Kyoto Protocol. It has a number of programs in place, but it rejected the idea of any sort of a cap or emissions tax on greenhouse gases. They clearly have some very different sorts of programs for fuel economy and things like that, which have been very successful.

One of the things that—again, I have to wear my little pointy economist hat—sometimes does a slight disservice to the environment is trying to argue too much that there is a free lunch out there, that we can do this really cheaply. I think there are some free lunches out there actually, some things that companies can do to reduce their emissions and make money, but fundamentally, the problem of climate change is going to cost resources. But I think it is worth it because the environment is worth

spending money on. As you suggested, it is good will. But I think it is also a recognition that the environment is worthwhile and worth spending resources. It is going to fundamentally alter the political dynamics in the United States, and, as we were discussing earlier, there are some signs that is changing, especially in the U.S. Senate.

J. KEVIN HEALY

I would like to add that there is some aspect of seeing trouble down the road. It is not necessarily out of the goodness of their hearts that corporations are doing something. In some circumstances, they are actually being induced by their shareholders—compelled is too strong of a word—to worry about climate change and do something about it. There is a very strong movement afoot amongst shareholders.

For example, there is a group under an umbrella that the Coalition for Environmentally Responsible Economies (CERES) has put together. I suggest that you type the word “CERES” into your computer and see what is up with them. It is astounding. This group has put together a coalition of shareholders that controls about \$1 trillion in investment money. It is going after one major corporation after another in an organized fashion, and is getting them to put together climate change plans through proxy initiatives. And, because of the power represented by these groups, what is essentially happening is that one company after another is saying, “We do not want to get into a fight with you. We are just going to do it. We think it makes sense to do it.” American Electric Power (A.E.P.), one of the major power companies in the country, has done that. Ford has done it. Southern Company has done it. So shareholders are essentially inducing corporations to get into the game.

DOUGLAS WILLIAMS

What do these plans look like, Kevin? Do you know?

J. KEVIN HEALY

You can go onto the internet and see A.E.P.’s plan in cyberspace. It is a very comprehensive look at climate change, how it is going to affect the company in the future, and what ought to be done in order to deal with the prospect of climate change.

DOUGLAS WILLIAMS

One thing we were talking about in the hall that might be interesting to address, somewhat theoretically interesting, is the prospect of international litigation on climate. Jacob, I think you were bringing up some stuff that

you thought might be in the works or possible. Do you want to talk a little bit about that?

JACOB WERKSMAN

Well, I actually think that more of the action is in domestic litigation at the moment than in international litigation, but it goes back to Ryan's question about whether there are courts out there that could actually adjudicate a dispute about climate change. Say you were a lawyer who is representing a small island country suffering the impacts of global warming and is concerned about the potential effects of global warming. You essentially want to sue the U.S. government for its failure to adequately limit its emissions. Now take that scenario ten or fifteen years from now, or even twenty years from now. Is there a court through which you could do that? Is there a legal theory under which you could establish the responsibility of the United States for the damage that it was causing to your environment, to the global environment?

There are a lot of principles out there that seem to guide you towards the conclusion that yes, under international law, the United States is generally responsible as a state to ensure that its activities do not cause trans-boundary environmental damage to other states or to the global environment. There are a number of principles of this nature for which the United States has signed up, and you can find similar principles in the general statement of international law issued by the State Department.

But it becomes much more complicated when you try to apply that principle to any particular kind of activity. Every state on the planet is clearly emitting greenhouse gases and is therefore, in theory, responsible as a state for its contribution to that damage.

So the real challenge is trying to figure out, from a legal point of view, how much is too much. When do your emissions of greenhouse gases rise to a level where you have actually breached your duty? And the question then becomes whether the United States, through its current activities, is breaching that duty. Has it gone beyond the emission level that is generally considered to be responsible for a state? And if so, how could you construct that legal theory, and what court would actually hear that case? I think that if you have proved all of the causation issues—that U.S. emissions were contributing to climate change, that global warming was causing the sea level to rise, that sea level rise was damaging this particular state—then you ask whether it can possibly be true, knowing what we know today, that international law will not hold you liable or accountable for doing nothing? Does international law actually not have an answer to that question? I think that the answer to that is not clear—that

international law does not actually provide any answer to that question. But if that is so, then what is left of international law?

ANITA HALVORSSSEN

When you are talking about state responsibility, the United States is not specifically breaching any treaty by carrying on the way it is. If you are talking of Rio Declaration principle 2 or Stockholm Declaration principle 21 (they are considered customary international law), then yes, you are injuring the other states. And if the Marshall Islands just disappears from the face of the earth because of climate change, they have received permission from New Zealand to relocate there. But still, somebody might have liked it back home. So I think that is true. You have an issue there, I think. But it is a question of the same International Law Commission (ILC) that set up the draft articles on state responsibility. It has been working on the liability aspect where you could be liable even if there is no breach of international law. I think that would lend some more weight to the argument, and perhaps make it easier to succeed if a case were to be brought by, for instance, the Marshall Islands against the United States.

DOUGLAS WILLIAMS

To be the devil's advocate here, let us assume we have a robust legal theory which would impose some form of responsibility on the United States, and there is a forum in which that claim could be advanced and ultimately adjudicated. What's the remedy?

JACOB WERKSMAN

The remedy, technically, is reparations. They would have to cease their activity and recompense. The next question is whether it is enforceable. Even if the International Court of Justice sitting in The Hague decides in favor of the Marshall Islands, or the government of Tuvalu, and finds the United States is responsible for the damage that occurred, how would it possibly enforce that? The United States has walked away from unfavorable International Court of Justice decisions in the past, and I would think that even if you got them into court, which is pretty unlikely because you would need their consent to participate in the case, if you went the wrong way for the premiers perspective, it wouldn't really be an enforceable judgment.

ANITA HALVORSSSEN

But that does not look good.

JACOB WERKSMAN

It does not. I suppose it would be very embarrassing—though we don't embarrass easily.

DOUGLAS WILLIAMS

Kevin?

J. KEVIN HEALY

There is an interesting case going on domestically, which is sort of parallel to the discussion we are having about the international scene. There is a lawsuit that has been brought by eight states, and the City of New York, against the five major power producers in the country, under the federal common law of public nuisance, the theory being that under the federal common law, where the activity in State A is causing harm in State B, it is a public nuisance actionable by the affected state.

What is going on here, based upon that theory, is that the states and the City of New York are saying that the activity of emitting CO₂ in the various states where it is being emitted is leading to the emission of greenhouse gases, which are crossing state lines, trapping heat, and causing damage to our states. They are relying on a case, *Illinois v. City of Milwaukee*, 406 U.S. 91 (1972), which is an old case that you will probably know if you are taking environmental law, where the State of Illinois sued the City of Milwaukee for the discharge of sewage into Lake Michigan that floated down the lake and impacted Illinois.

The recent climate change case was brought in the Southern District of New York in front of Judge Preska, who granted a motion to dismiss based not on standing, interestingly enough, but on a separation of powers theory. Her concern was that climate change is such a big issue that, even if it were a public nuisance, it is the mother of all public nuisances and has sweeping implications—economic, political, social—that are too big for a federal district court judge to handle. She determined that the exercise of her equitable powers in such a case would require policy decisions that are not appropriate for her to make, that are better left to the President and the Congress. She was not going to get into the business of regulating CO₂. So at least in that case, the judge pushed the issue to where she felt it should be: a responsible President and Congress.

The question I have is how that case would have turned out, even in the lower court, if it were for damages? The plaintiffs were only seeking a mandatory injunction. They were not seeking damages, and the worries that Judge Preska had would not have been applicable to an action for damages.

And by the way, an action for damages has been brought in the Southern District of Mississippi (*Comber v. Murphy Oil*, 2006 WL 1474089). A class action has been filed in that court in the wake of Hurricane Katrina. That action was commenced against the petroleum industry essentially on the basis of alleged negligence, and what the plaintiffs are saying is that the petroleum companies knew or should have known that climate change was occurring, and they knew or should have known that there was a link between climate change and greenhouse gases. As a result, the plaintiffs assert that the companies knew or should have known that as a result, the water was warming. Not much has happened in that case other than the filing of a complaint. But it is interesting to see that it was filed.

ANITA HALVORSEN

That was fast.

J. KEVIN HEALY

Of course, there is a long way between filing a complaint, or even establishing injury in fact for purposes of standing, and actually proving a case in court—that a particular injury has been caused by a particular company’s emission of greenhouse gases. There is an interesting article that was written in the *Columbia Journal of Environmental Law* by David Grossman, which looks at each of the obstacles a plaintiff would face in climate-change-related litigation. He believes that these obstacles can be overcome if the plaintiff is a state entity where you can aggregate the damages. I would recommend that you take a look at that law review article.