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Session 10: "Greenhouse Gas Emissions: What's Next?"

Howard: [*TESTING MICROPHONE*[Good morning. I'm Howard Gruenspecht. I'm the acting administrator – Oops! Sit down, I don't have to wear this – of the Energy Information Administration and the moderator of this breakout session, one of the two final breakout sessions which is entitled, "Greenhouse Gas Emissions: What's Next?" Those of you who were with us at the opening of the conference know that the remarks of all three of our "Plenary" speakers touched on the threat of climate change caused by anthropogenic emissions of greenhouse gases, the vast majority of which are energy-related. This is an issue that's been with us for a long time, but I think of it as being in the Washington frame for about two decades. Many in this room have memories that date back to the United Nations Conference on Environment and Development which culminated in the Earth Summit Meeting at Rio de Janeiro in 1992 when the United Nations Framework Convention on Climate Change was agreed to. This convention, which entered into force shortly after the Rio summit, did not include binding emission reduction requirements. Subsequently a Kyoto Protocol was negotiated that included binding emissions targets for the 2008 through 2012 period, but only for developed countries. And of course, only for developed countries that signed and ratified that protocol, which does not include the United States. Domestically, while action has yet to be taken at the Federal level, a number of states have been very active in announcing programs to reduce greenhouse gas emissions.

EIA has several roles in collecting data on greenhouse gas emissions, on

emissions reductions and in preparing forward-looking analyses. We prepare an annual inventory of U.S. greenhouse gas emissions encompassing both energy-related emissions and other emissions sources. We collect reports of voluntary actions to reduce emissions under a program set up by the Energy Policy Act of 1992, legislation that was enacted a few months after the Rio Earth Summit.

We develop energy projections for the United States in our Annual Energy Outlook and globally in our International Energy Outlook. These energy projections are widely used to project greenhouse gas emission trends under current laws and policies.

Last, but not least, we develop analyses of energy-related policy proposals including but not limited to greenhouse gas emissions reduction policies for the Administration and the Congress. In fact, analyses of greenhouse gas reduction policies has been one of the main areas for our analysis reports over the past decade. In the last Congress, most of the activity was on the Senate side. In addition to several generic analyses, we looked at the Lieberman-Warner Climate Security Act of 2007. We looked at the Bingaman and Specter proposal as well. This Congress, the House appears to be in the lead on advancing legislation, most notably with the recent issuance of a discussion draft by the House Energy and Commerce Chairman.

As I mentioned at the Plenary session, EIA is preparing for future analyses of this and other proposals we might be asked to look at. And one of the ways we're preparing is by developing a baseline that includes the American Recovery and Reinvestment Act which is not now included in the Annual Energy Outlook 2009 baseline.

The fact that I told you about these activities suggests that we're quite proud of them. They serve our mission at EIA to inform policymakers and

promote public understanding. But in the interest of honesty, which is a good thing, there are some very important things that EIA does not do. First of all, we don't engage in international negotiations to develop agreements to limit or reduce greenhouse gas emissions. In fact, a round of preparatory negotiations in Bonn, that are helping to pave the way for the meeting in Copenhagen later this year, is actually scheduled to conclude today. So EIA doesn't have much to say about that. Second, as summarized in a phrase that appears in all EIA testimony before Congress, we do not promote, formulate or take positions on policy issues. Furthermore we're very clear that our views should not be construed as representing those of the Department of Energy or the Administration.

The areas that fall outside of EIA's mandate are of course critical to consideration of the topic of this session. I guess that means it's time for me to stop talking and to introduce our panelists who can provide the insights related to greenhouse gas policies both domestically and internationally.

But because I talk too much, I will say a little more. I was thinking of as I was driving in today that tonight is the first night of Passover. And Sunday, of course, is Easter. Related holidays. As I was thinking about our topic this morning, there's a Passover, or Seder, that people have that did come to mind. It's a lot of fun and starts out with the youngest child asking four questions. And then the person leading the ceremony has to explain the symbols of Passover and you get to drink four cups of wine. And then you eat a meal and then you sing some silly songs. But just before you get to the part where you sing the silly songs, there's a part where you recite or chant the following sentence. "L'shanah haba'ah biyerushalayim" – "Next year in Jerusalem." I'm really not enough of a scholar to know exactly when the service was put together, but I think it's safe to assume that it was put together at a time when the celebrants

really did want to return to the Promised Land of Israel, but couldn't. So they were saying, "Next year in Jerusalem. We're going to be able to celebrate next year in Jerusalem." Of course, tonight people will be holding these Passover Seders all across America and we'll go through all the fun things and then we'll get to this part where we say or chant the phrase, "Next year in Jerusalem." The difference of course is that if people wanted to return to the land of Israel next year or even next week, you know, you get on an airplane. It doesn't take very long to get there. The flight takes about nine hours. The truth of the matter is that probably for most of the people who are celebrating this ceremony and will say this phrase, "Next year in Jerusalem," they're perfectly free to go, but for one reason or another, they're not going to get there.

And so I guess with climate, I think we're coming to a very exciting time both domestically and internationally. I think we've been saying "We're going to do something about this issue" for quite some time. I think now the stars may be aligning in such a way that if we really wanted to do something about this issue, we perhaps could, but in economics, one draws a distinction between "stated" preference and "revealed" preference and the "revealed" preference – at least of the people who celebrate Passover - is that they're not all getting on a plane and flying off to the Promised Land. And I guess on climate change really we don't know yet. It's an open question whether we're going to do that or not. So with that little bonus though…

[LAUGHTER]

Howard (Continues): This kind of bonus thought that gets you fired, but uh…(LAUGHS)

[LAUGHTER]

Howard (Continues): …again, mixing up energy policy and religion is always very dangerous, but…

[LAUGHTER]

Howard (Continues): …I think we have the best possible panel to address this. I've started with a very strong "Plenary" in this conference and I think we're coming to the end with a very strong panel. I can't think of a better panel to address the issues that everyone is interested in that frankly fall outside of EIA's mandate. Joe Aldy is Special Assistant to the President for Energy and Environment at the National Economic Council and the Office of Energy and Climate Change in the White House. This means that his direct bosses, are Larry Summers on the one hand and Carol Browner on the other. I can't think of a more interesting job that I wouldn't want to have…

[LAUGHTER]

Howard (Continues): …and I can't think of a better person to speak on behalf of the Administration. And he's a good friend of mine. Until I invited him to do this.

[LAUGHTER]

Howard (Continues): Greg Dotson is the Chief Environment and Energy Counsel of the House Energy and Commerce Committee, the House Committee with legislative jurisdiction over non-tax National Energy Policy. He plays a key role in developing legislation. He played a key role in the energy-related provisions of the ARRA. He's playing a key role in the development of the discussion draft of the legislation that was recently released and has received so much attention, didn't even know that it was going to be exactly a week before this conference. So we really lucked out. But, you know, and there are full bios of these people in your booklet so I'm not going to go through all their degrees and all that. We have Andrea Spring here as well. She's a professional staff member from the minority side of the House Energy and Commerce Committee. She comes to us today in place of David Cavicke who

was waylaid by an uncooperative wisdom tooth that required attention before action resumes in Congress after the Easter recess. You know, he has to be fully suited up and ready to go, so this is a week for him to take care of that. We wish him a speedy recovery and welcome, Andrea, who can provide the minority perspective on what's next.

And last but not least, we have Joseph Goffman, the majority Senior Counsel to the Senate Committee on Environment and Public Works focusing on climate change, clean air and energy issues. Mr. Goffman was most recently the Legislative Director for Senator Joseph Lieberman and obviously was deeply, deeply involved in the Lieberman-Warner legislation of last year. Normally in the spirit of EIA partiality, we go in alphabetical order or we use a random number generator to develop who speaks when…

[LAUGHTER]

Howard (Continues): …but by prior agreement with the speakers, we've decided to actually present the talk in a logical rather than random progression. So we'll have the Executive Branch speak first. Then, since the House is where the current activity is, we'll have Greg speak and then Andrea speak. Certainly last but not least, we'll hear from Joe Goffman for some further observations. And we want to have you all really involved in this. I've asked panelists to speak for about 10 minutes each and then we would go into a more interactive discussion. So if they speak for longer than 10 minutes, I'm not going to hook them, but I want you to know that they're disobeying the rules.

[LAUGHTER]

Howard (Continues): With that, let me introduce Joe Aldy.

Mr. Aldy: Thank you, Howard. It's a real pleasure to be here and I think it's really a testament to the very positive impact EIA has I think in the policy process – seeing what at least I learned over the weekend that some 1700-plus

folks registered to come to this conference and looking at the program over the day-and-a-half, you realize what value the EIA brings. And it reflects all the very, I think, important work you are able to do both in compiling statistics and in undertaking analysis that even though EIA may not be taking positions on policy, they are very much informing those of us who have to take positions and formulate policy. So with that, it's – I am grateful to have this opportunity to be here. Howard's sort of "Passover 101" tutorial for us, reminded me,– and I won't be as long as Howard was…

Howard: Uh, oh…

[LAUGHTER]

Mr. Aldy (Continues): …actually reminded me of this old quote I saw attributed to Mark Twain which is that "Everybody talks about the weather, but nobody does anything about it."

[LAUGHTER]

Mr. Aldy (Continues): I think what we're actually talking about now is what actions we could really take. We're really trying to get serious now here in Washington and in some sense following the lead of those in capitals in the states around the country on trying to address and tackle the issue of climate change. And certainly this is an issue of significant importance to the President who has an ambitious clean energy agenda. The President views the economy, energy and climate as all part of the same challenge we need to address and thinks that there's an incredible value in trying to tackle the current economic recession we're facing by trying to invest in the new technologies that will help serve as the foundation for a clean energy manufacturing sector and serve as a foundation for what we're trying to do in reducing our greenhouse gas emissions moving forward. And also, quite importantly, to try to improve our resilience to energy price shocks and improve our energy security. So to sort of

describe what we, the Administration, are trying to do to advance the President's agenda, I'd like to spend a few minutes discussing what we are trying to achieve and hope to implement through the Recovery and Reinvestment Act, discuss a little bit about the President's agenda on cap-and-trade to address greenhouse gas emissions and then close with a few comments on what we're trying to do in engaging the international community to address climate change.

So as you know, in February Congress signed into law the American Recovery and Reinvestment Act. All told, it depends on how we count different kinds of investments in the act, but something on the order of probably $80 to $100 billion either directly or indirectly delivers on clean energy. Whether it's in building new transmission lines that may be able to help move renewable power from remote areas to urban centers. Whether it's to facilitate the investment in an advanced battery industry here in America to help power hybrid vehicles or electric vehicles of the future. Whether it's to try to promote the deployment of wind power and solar and biofuels in the power sector. There are also pretty substantial investments in energy efficiency both in trying to make the Federal government more energy efficient and retrofitting all our government buildings to providing assistance to help low-income households weatherize their homes and reduce their energy bills, as well as providing funds to state and local governments for them to identify what may make the most sense for them to invest in energy efficiency and energy-related projects in their communities. So we believe that this is actually going to provide an important foundation both in promoting energy security and reducing our greenhouse gas emissions and we think it's fantastic that EIA is doing the analysis to get a better sense of what the payoff will be from these projects. This was, of course, a very fast moving effort through the transition and through the first month or so we were working after

the President took office, and important that it moved fast because we needed to create the economic stimulus. But the President believes that this, as in other issues whether it's on health care or education, that there are ways in which you can actually create the near-term economic stimulus necessary to try to shorten and move forward through the economic recession and into recovery but do so in a way that can really create the foundation moving forward for the energy and climate agenda. So as I'm sure most of you know, in the President's joint address to Congress in late February he called on Congress to produce a bill to reduce greenhouse gas emissions and called for a cap-and-trade program reflecting what he had campaigned on.

The President's budget proposal for FYI 2010 and beyond elaborated on this call to Congress to produce legislation that the President believes should reduce our emissions on the order of 14% below 2005 levels by 2020 and 83% below 2005 levels by 2050. For those of you who are accustomed to 1990-based years, that's basically 1990 and 80% below 1990 in those two time periods. I also believe that there's value in actually implementing this as a sort of cornerstone of the policy to reduce greenhouse gas emissions through an economy-wide cap-and-trade program that would start in 2012 providing time both for the economy to recover, for people to start getting back to work for those who have lost their jobs to the recession, and also to provide this opportunity for this sort of foundation from the Recovery and Reinvestment Act to start paying off. To really start pushing out more of the renewables in the power sector to lower emissions. To make it easier for households, whether it's the low income households that benefit from weatherization. Whether it's people of greater means who can take advantage of tax credits to invest in energy efficiency products in their home. That's also provided in the Recovery Act. That once we are sort of able to take advantage of these near-term efforts, it will

make it easier as we transition into a formal cap-and-trade program.

So the idea is that we would implement this program starting at 2012. The President has also proposed – reflecting one of his proposals in the campaign – the allowances under a cap-and-trade program should be auctioned. This is an issue that has drawn I think a lot of attention in the policy debate and will continue to draw a lot of attention. I think the important view here that's reflected by the President and how we're trying to engage with Congress and with stakeholders is to recognize that the transition to a clean air economy and doing so through a cap-and-trade program is not easy. That there will be those who are going to be vulnerable as we make this initial transition. And that we need to actually target the allowance value and the revenues to those vulnerable households and communities and businesses. So we're going to be working a lot with Congress and the stakeholders to try to do that in the most effective way possible. We found that even though there are those in the business community who we've already talked to who may disagree with 100% auction, there seems to be this sort of general agreement that we don't want to design a program that creates windfall profits in the corporate sector, but that we're actually thoughtful in how we design the program to really make sure that we're able to target in an effective way the value embodied in those allowances.

I think it's also important as we move forward to think about this will interact with the international efforts going – trying to implement a successor to the Kyoto Protocol. As I'm sure you know, come December there will be an important meeting hosted by Denmark in Copenhagen to try to work out a framework to succeed the Kyoto Protocol. So there's a lot of work there we are now doing trying to engage our partners around the world on how to reach a good agreement in Copenhagen. This was started by the President, deciding that given the importance of this issue, we needed to name a special envoy

whose sole job would be to represent the United States and engaging our partners around the world and Todd Stern was named this envoy several months ago. He's been quite busy already traveling to China how to have conversations with the Chinese about how we can cooperate on energy and climate issues. He was at the Bonn negotiations to give a speech to help lay out some of the initial thoughts we have in moving forward, and as you may know, that we will be holding a major economies forum on energy and climate change meeting at the end of this month here in Washington as a so-called "leaders representative level" – the ministerial level - that will lead to a head-of-state meeting on the margins of the G8 in Italy in July.

This is one thing where we actually looked back at some of the efforts that were started in 2007 by the previous administration and found that especially in engaging our partners around the world, that there's a lot of value in bringing together the largest greenhouse gas emitters and largest energy consumers into one forum to discuss our common interests and see how that could more effectively inform and influence the UN process in developing the successor to Kyoto. And so we will be holding that first meeting at the end of this month.

There will be a series of other leaders' representatives meetings moving forward that we hope will address some of the important issues on how we think about the kinds of commitments and actions that countries can take both in the developed world and especially among the larger emerging economies. How we can work together to address issues such as the investment in new research and development and subsequent deployment of technologies. How we can work to try to address adaptation among the vulnerable around the world and try to create the foundation through this process for a successful outcome in Copenhagen and in subsequent talks.

So that lays out a little bit of sort of our agenda moving forward and look forward to the conversation with the rest of the panel and I look forward as well to hear about what all the actions Congress has already started taken in trying to address climate change.

Howard: Great. Thank you, Joe. Greg?

Mr. Dotson: Thank you for the invitation to be here today. It's an honor to be here and what I'd like to do is talk briefly about the discussion draft that was released a week ago and then the schedule moving forward and then hopefully we'll have a time for discussion about any of the details that you're interested in. Last Tuesday, Chairman Waxman and Chairman Markey released a discussion draft. This is legislation that would essentially institute a number of energy reforms in a way that would create jobs and also address climate change in a meaningful way in the years and decades ahead.

Chairman Waxman has a lot of legislative experience working on various energy and environmental issues. He looks back on the Clean Air Act and sees the ten years that he took wrestling with Members of the Committee or to move legislation that significantly addressed air pollution issues in the United States. He sees climate change as no less of a daunting task and in some ways more challenging, but he realizes that he really doesn't have ten years to deal with this – not from an international perspective and simply not from a scientific perspective. So what he has done in working with Chairman Markey is to draw heavily on the work of USCAP. USCAP is the U.S. Climate Action Partnership. It's a coalition of industry leaders and NGOs includes all the domestic automakers, manufacturers, several coal-burning utilities, oil companies, as well as the Natural Resources Defense Council and the Environmental Defense Fund and others. And his discussion draft is based very much on their recommendations. He sees it as a way forward that is somewhat consensus

based among those who wish to be constructively engaged. And really does see it as a way – as an economic driver both in the near term and in the mid term.

We recently had a speaker at the Democratic Caucus who was a CEO of a large coal-burning utility and the case that he made to our Members was his industry is poised basically to spend $1 trillion in infrastructure investments and that's going to happen in coming years, but they don't know how to spend that money because they don't know what the rules of the road are. They don't know how serious people are going to be about climate change and they need to understand that in order to unlock that investment. And that's the Chairman's goal in going forward with this. Just to briefly give you the structure of the bill for those of you who haven't had the time to read it, it's a 648-page draft [PAPERS RUSTLING] [PAUSE] so you may not have had time yet…

Howard: Have you had time read it all, Greg?

[LAUGHTER]

Mr. Dotson (Continues): [LAUGHS] I have…this past weekend…

[LAUGHTER]

Mr. Dotson (Continues): I would say it was an effort, obviously, of a number of staff, who were tasked with various elements of it. We wanted to put it out in a discussion draft, have enough time for Members to receive comments about it, to talk with their constituents, for us to get feedback from industry and all the affected stakeholders so that it can be a more refined product going forward.

The discussion draft has four titles. The first one is a "Clean Energy" title. And this really says what are the energy policies that we need to plan for the future and the centerpiece for this is a renewable portfolio standard which would have a 25% requirement for renewable generation of electricity by 2025. It's

based largely on legislation introduced by Chairman Markey although there is one major modification in that it says that if a state is in compliance with the energy efficiency requirements in the bill and upon petition from the governor they can satisfy one-fifth of their compliance obligation through energy efficiency measures.

There's a very robust package on carbon capture and sequestration in order to help get that deployed in the early term and as well on an ongoing basis. And that's really in response to I think both the renewable electricity standard and in response to the concern that this program really could be cheaper to implement in the near term and you wouldn't have the technology deployments being triggered just on an economic basis. What we understand is that you don't really see CCS deployed until you're hitting $50-$60/ton of carbon dioxide. We wouldn't expect that to be reached for some time. So the idea would be to have mechanisms that would deploy renewables to bring those costs down and deploy CCS to bring those costs down so that as the stringency of our carbon goals increases over time, that technology would be available on a widespread basis. And it would also be available for exports, which is I think is another important element of this legislation that our Members are concerned about making sure that the United States stays in a very leading role as far as technology development.

Along those lines are provisions to promote clean fuels in vehicles including vehicle electrification. Those provisions are designed to be, you know, whether you have a plug-in hybrid strategy that we've seen articulated by General Motors or by Toyota or whether you have a pure electric approach that you've seen Nissan or Ford talk about. The idea would be to provide a mechanism to help address the chicken-and-egg issues that come with infrastructure. There are a number of provisions that would do that as well as to

help retool factories and take advantage of the battery provisions that Joe mentioned in the Recovery Act. There are modest sections on “Smart Grid” and “Transmissions.” The Smart Grid provision is largely focused on how you bring that Smart Grid capability to consumer appliances so that you can really unlock the potential of Smart Grid. And then the Transmission provisions are largely focused on improving the existing planning process -- it doesn’t wrestle with the issues of siting at this time.

Title 2 is an “Energy Efficiency” title. This has provisions that address efficiency issues across the economy from the housing sector to appliance energy efficiencies where we revamp the standard-setting process at the Department of Energy and try to increase the focus there on energy efficiency. There are a number of transportation efficiency provisions including emissions standards from mobile sources, but also a provision that has states set goals for greenhouse gas reductions from their transportation sector.

This is an area where we seek to project out into the future. Emissions from transportation sector are roughly 28% of greenhouse gas emissions in the United States. You can do everything you want on vehicle technology and fuel technology, but ultimately the way our communities grow has a very important role in the emissions through vehicle miles traveled. And so this is an approach that would try to integrate those concerns into the existing state transportation programs. Finally, there is a an energy efficiency resource standard in Title 2 of the bill which would essentially call upon local distribution companies for electricity and gas to improve their efficiency over time – to save energy over time.

Title 3 is the “Reducing Global Warming Pollution” title and essentially what this does is – it sets an absolute tonnage limitation on emissions of carbon dioxide and other greenhouse gases from the beginning of 2012 and going

through 2050. We looked very heavily toward USCAP for many elements of this title. The goals are reflective of that. We call for a 3% reduction in greenhouse gas emissions by 2012. These are all from a 2005 baseline. A 20% reduction by 2020. A 42% reduction by 2030 and an 83% reduction by 2050.

We understand that in the international community, people are looking for the United States to make serious commitments about the reductions it's willing to make. A 20% reduction in 2020 is a serious reduction. We think that one way of showing an even greater commitment from the U.S. is by using a small portion of the allowance value in order to purchase the equivalent of an additional 20% reduction through international deforestation and that's in the legislation. That's actually in the discussion draft. That's the one use of the allowance value in the draft. So that would get us to 30% below 2005 levels by 2020 – we'd be responsible for that. And then we have a very generous offset program in order to reduce the cost of the program, also reflective of what USCAP suggested. We would allow two billion tons of offsets. One design factor that we put into that program is to require a 5-to-4 turn-in ratio so it ends up being a win-win for industry and for the environment where you have a more affordable program basically. And by being able to use those generous offsets, by having a 5-to-4 turn-in ratio, you pick up some additional reductions which the science suggests we needed. We think that would probably take us – that would give us even a little bit more benefit there.

We have a number of cost-containment mechanisms to ensure that the program is implemented in a way that doesn't shock the system. We allow unlimited banking of allowances. The offset provision obviously is the key cost-containment element. Just the fact that it's a cap-and-trade program I should mention is a significant way of containing the costs. And then we have a strategic reserve which essentially skims a very small percentage of allowances

in years going into the future then, if the program ends up being more expensive than expected, those are auctioned off to ensure that the allowances are available as necessary. We have the “Carbon Market Assurance and Oversight” program. Then probably one of the things I think is of very great interest to the energy sector is that since we’re giving EPA this great new tool and authority to address greenhouse gases, we also clarify some of the existing authorities in the Clean Air Act to ensure that the program is workable. We say that you can’t designate a greenhouse gas on the basis of its climate affects as a criteria air pollutant. So this addresses the issue of having a state implementation plan issue with carbon dioxide. We take it out of the New Source Review Program. We take it out of the Air Toxics Program. So the goal is to have a streamlined process that works effectively and at the lowest cost possible to achieve the reductions that we need to achieve.

I’ll spend the least amount of time on the fourth title which is the “Transitioning” title. This is the one that Members are very interested in because I think we have – at least on our side of the aisle and we’re hoping to work with Andrea and her Members – very strong interest in moving towards a clean energy economy. There’s concern about how can you do that affordably and how do you mitigate impacts on industry and how do you mitigate impact on consumers? And that’s really what the “Transitioning” title is about. It addresses issues like worker transition and adaptation issues and we think that’s going to be a big focus in the coming weeks. Finally, just to give you a sense of the schedule going forward, our Chairman has announced that we’re going to return – we’re in recess this week. We’re in recess next week. The following week of April 20 we’ll return for legislative hearings. We’ll begin subcommittee mark-up the following week and then two weeks after that we will move into full Committee and we’ll report out of Committee by Memorial Day recess. That’s

the plan. It's an aggressive schedule, but an achievable one. Finally I would just say that this is the first in two big trains moving through our Committee. Immediately after the Memorial Day recess, we're going to move over to health care with a goal of resolving that by the August recess. So this is our window and…

[LAUGHTER]

Mr. Dotson (Continues): …and we look forward to working with those of you want to be constructively engaged and we're also happy to answer any questions.

Howard: Thank you so much, Greg. And now, Andrea Spring.

Ms. Spring: Well, I think we'd all like to be in the Promised Land next year. We just have different ideas about what the Promised Land is. In our case what we're really concerned about the Republican Members of the Committee and of the House are really concerned about energy security. They're concerned about energy independence. They really are interested in this all-of-the above energy plan they're talking about. Their concern is that focus on climate change is the wrong way to focus. Obviously, Ranking Member Barton, my boss, does not believe that global warming is a man-made phenomenon. He is not convinced of that and so therefore he, of course, opposes implementing a massive cap-and-trade plan. But even Members of our Committee who are convinced that global warming is anthropogenic and that something needs to be done believe that the cap-and-trade plan is not the way to go about doing that. The costs to consumers are simply too great and this is not the time to do some sort of a plan that would increase energy costs. The economy just can't take it.

The goal set by the Waxman-Markey "Climate Draft" are of course, 83% below 2005 levels by 2050.These are much more stringent than the Boxer-Lieberman-Warner goals from last Congress. That bill got 48 votes in the

Senate. Now admittedly, gas prices were much higher then, but the economy was also in much better shape. I don't understand – I'm a little dubious that we're going to be able to get more Senate votes for a cap-and-trade plan in the current economic environment than we did last year. On the House side there's no question the numbers are against the Republicans. We understand that a Republican-only effort can't succeed in the House. We're hopeful that some of our Democratic friends who are from areas of the country which are more heavily impacted by this bill – areas that have more coal or more manufacturing interests - might be interested in working on plans that we think might be more workable to help energy technology, develop new sources, to address this in sort of a job-creating rather than a job-destroying way.

On the bill particularly, we have a number of concerns with it. I think it's interesting - the idea that USCAP likes this bill and therefore it must be good for business and good for the economy. I think what might be good for some of the USCAP companies may not necessarily be good for some of their customers or for the economy as a whole. We're really concerned that a cap-and-trade plan has immense transaction costs. Any of y'all who have sat down with this bill and kind of gone through the details about how this is going to work and what's going to be required of people can see that this is going to involve not only a big expansion of government, but a big expansion on the private sector side to be able to work with this program.

The possible gaming of the carbon markets is a major concern to us. I think, particularly now after what we've seen in the market in the past year or so, that people are really reluctant to create a whole new derivatives product and a whole new financial product. Certainly the traders are really interested in seeing more trading activity and there was just a lovely article where traders were talking about "How this is nirvana. This is the next big thing. This is how

they're coming back. They're really going to make money on this." We're not opposed to them making money, but if they're the guys who are making money and everyone else has to pay for this, we're not sure that this makes a lot of sense.

We thought it was interesting that the bill has the FERC have oversight over the physical markets, but then leaves the President to decide who's going to have oversight over the derivatives market. We'd like to have a little more clarity to know – are they – is the CFTC the best agency to do this? Should there be a new agency? FERC and CFTC have obviously been trying to work more closely together recently, but there are some jurisdictional issues there we'd like to see addressed. FERC and CFTC both, I think, if they were to take on either of these roles, would need to expand greatly. They don't currently have the staff or the infrastructure to deal with this sort of a market.

The bill is silent on the allocation issue except for the reforestation provision. That's such a huge portion of this bill. An allocation is where you get the votes. [LAUGH] So without knowing who's going to get what sort of money? It's actually difficult to tell what the costs will be to the different sectors. We think that pushing the allocation fight off makes it more difficult for us to tell where the costs will be and for us to have a better idea about what the impact on the economy will be. And I think it's also more difficult for people across the country to tell what the impact of this is going to be. Until we know what the allocations are, we're not going to know how much worse things are going to be in Michigan than things are going to be in California. We're pretty sure that they will be worse [LAUGHS], but without allocations we don't know that. Allocation is very much a fight over who ends up paying for the reductions initially.

Obviously, even if you did 100% allocation because you've got a declining cap, everyone will bear these costs over the long run. We are really

interested in the energy issues. I mean if you look at three out of four of the titles in this bill, they're all things that we could work together on. They're things that we'd like to work across the aisle on. On the renewable electricity standard, we're concerned too, that that has regional inequities. Some areas of the country are definitely better blessed with inexpensive renewable energy than others. Also there are some concerns about the reliability impacts. That sort of 25% standard would require a lot of transmission work and a lot of development to be done before we could actually reliably impose that on the grid. We're concerned that some of the energy efficiency standards might be too prescriptive. We're supportive of energy efficiency, but the level of detail that Congress would be going into in setting standards with this bill might be of some concern.

On the transmission issues, my Members are kind of disappointed. We think transmission is actually a very big issue, particularly after the Fourth Circuit Decision on the National Interest Electric Transmission Corridors. We actually need stronger Federal siting authority and that's something that is needed particularly if you want to do renewable energy. Or even if you're interested in new energy development in general or in reliability you actually want to take a really hard look at the transmission issue. We'd like to be able to spend some more time and effort working on that, I think.

On the trade side, it's obvious that China and India are not going to address hard caps any time soon. They're interested in incentives. They're interested in us giving the money to do development. They're not interested in limiting their CO2 emissions right now. I think until you get the developing countries interested in doing really hard CO2 caps, you're going to have trade issues. And that border adjustment provisions could face challenges in the WTO. Even if border adjustment provisions survived WTO challenge, you could

run into a trade war outside of the WTO structure. And obviously energy-based exports are really important to our economy. We hate to see that be damaged. We're also concerned, of course, about increased prices for imports that border adjustment provisions could create.

We do think that there are important steps that should be taken to address the CO2-related climate change because we do believe that we need to work on developing energy technology to work on expanding our energy infrastructure. We're really supportive of research, development, demonstration and deployment of low- and no-carbon technology across the board. In particular, we would like to see more nuclear development. We're very supportive of the CCS provision that is in the cap-and-trade bill, taken from former Chairman Boucher's bill. Mr. Barton and Mr. Upton, the Ranking Members of the full Committee and the Energy and Environment Subcommittee, were the co-sponsors of that legislation. We're interested in nuclear fuel reprocessing. That could be an important part of our long-term nuclear energy strategy. And we are interested in perhaps some kind of low-carbon electricity standard – or there are different ways to encourage low carbon electricity including CCS and nuclear and renewables. We think that could be really helpful to our overall energy mix and help us with our energy security needs.

And finally, data has a really important role in this debate. As we saw in the EU, the setting of the baseline – if you set the baseline at the wrong place, you're not going to get the emissions that you want to see. You're not going to get the technology development you want to see. One of the encouraging things in the U.S. is we have very good data, comparatively. And we also have the sort of the ability to do the detailed economic modeling that will be key to understanding the impacts of these plans. What we'd like to see more of is

more region-specific and industry-specific information. We have a lot of national information on kind of rough targets. We'd like something – we'd like to see more people drilling down into the data because one of our concerns that we have is that whatever you end up doing because of the different impacts it has, we'd like to have a better idea about what those impacts will be. We've got some rough approximations, but nothing as detailed as we'd like.

We're also worried about electric reliability issues. We're worried that the electrical reliability issues and some of the NIMBY problems that we've had may not be fully accounted for in the models. For instance, if when you run the numbers and it says that you – at a certain carbon price you're going to build 100 new nuclear plants. We would like to see 100 new nuclear plants build. We're not sure that's realistic in the current environment. We may need to do a lot of things to help encourage that. So I think reliability issues are something we need to look at. I know we've been paying attention to what's been going on in Europe and Britain. For instance, the folks in Britain have some reliability concerns that if they're trying to meet their renewable portfolio standards there, and they're trying to meet their emissions reductions and they may actually end up with a block of time where they're not going to have enough electricity because they're not building conventional power plants. We don't want to end up in that situation. So that's of concern to us. [PAUSE]

Howard: Now we travel across the Capitol dome and visit with Mr. Goffman. Joe?

Mr. Goffman: So, any questions?

[LAUGHTER]

Howard: Joe, if you talk for 40 minutes, there won't be any time for the audience to ask the tough questions.

Mr. Goffman: …That's…well…

Howard: Maybe your panelists would like to make some side-payments…

Mr. Goffman: …the temptation is great to do that, Howard, but I'll…

[LAUGHTER]

Mr. Goffman: …try to resist. First of all, thank you all for the opportunity to speak today and I would ask that my remarks be treated as off the record in case any of you are here from the press or speak to anybody from the press. In that way it'll be a little bit easier to give what insights I have and/or share things that Senator Boxer has already said publicly.

In contrast to what you've just heard, Senator Boxer has put out a single document so far with respect to the issue of climate and that is a one-page set of "climate principles" that describe in very general terms what she would like to see in a climate bill or more specifically, principles she'll follow in formulating a bill. Those include a commitment to setting the emission reduction target in a way that is informed by science as close to real-time as possible. An emission reduction program that follows a cap-and-trade model. And a program that uses the allowance value created and distributed under such a model to address a number of closely allied policy objectives. That is, policy objectives that are closely allied to the overall objective of reducing greenhouse gas emissions on an economy-wide basis. Those objectives are not that different from those that appear to be served by the Waxman-Markey Draft. They include various ways of assisting the economy and key affected sectors or stakeholders in the transition from the status quo to a greenhouse-constrained economy.

In the Senate, to paraphrase an often repeated statement around here, sometimes process is policy. As I'm sure many of you know, the rules by which the Senate takes up major pieces of legislation and disposes of it are quite different from those in the House and to put it in very simplistic terms, empower

individual Members equally. Therefore, in order to move a major piece of legislation, like climate legislation, we can expect that we will need to put together a coalition of at least 60 Senators to support an overall package – or an overall deal. Therefore, as Senator Boxer has said, the action on climate policy will not be so much in the Environment and Public Works Committee as it will be on the Senate floor. And in that respect, the interesting legislative formulation will occur not at the moment that Chairman Boxer releases her first draft or EPW reports its bill, but really in the journey from EPW to that point when 60 Members of the Senate will find themselves comfortable voting for a climate bill.

I think the assumption is that in order to get to that comfort level, the bill will have to address the full range of issues that are either captured or already – that is to say - identified or flagged in Senator Boxer's "principles." Or encompassed, indicated or flagged in the Waxman-Markey Draft.

Our anticipation is that the next hurdle for us in the Senate will be for us to engage those Members of the Senate who are not on the Environment and Public Works Committee in the kinds of discussions that need to take place that would lead to their getting to their bottom line – to their point of comfort. Senator Boxer has said that before that moment of engagement can be reached, there's a very good chance that the Senators with whom we have to engage will need to see progress over on the House side, will need to see their House counterparts who have the same concerns that they do reach their conclusions vis-à-vis the House bill. As a matter of both basic politics and technical resources, there's a good chance that we will need to see the Administration engaged. Not just in propounding the ultimate outcomes that it desires, but in informing us – that is the Senate – as to its insights, its analysis and in many cases, its preferences as to how some of these key issues are resolved.

[PAUSE]

Howard: Well, thank you. That was great. And obviously the side payments from the other panelists were not large enough…

[LAUGHTER]

Howard (Continues): …please join me in thanking the panelists for a wonderful job.

[APPLAUSE]

Howard (Continues): Okay. In case there aren't questions from the audience, I have some of my own, but I imagine there might be some questions from the audience. So let's start. The microphones are on the two side aisles. Please keep the questions very civil.

[PANELISTS LAUGH]

Howard (Continues): …I'd like to keep it very balanced. You can say who maybe you want to direct your question to, but I'll reserve the right to direct them wider and get the group – give everybody a chance. So with that, let's start on the left microphone…

Mr. Johnson: Hi. My name is Brad Johnson. I'm with the Center for American Progress. I guess I'm – this is a question partially directed toward Andrea but it's open for the panel. Under the, you know, the last eight years we've seen what Republican energy policy gives us and we've, you know, at least we've seen wages go down, energy costs go up, global warming pollution go up, foreign oil dependence go up, the economy collapsed – industry has left this country…

Howard: Can we get to a question?

Mr. Johnson (Continues): What? Okay, these are, because Andrea brought up the point about the importance of data…

HOWARD: I'm not trying to argue with you.

Mr. Johnson (Continues): So, no, no. I just wanted to lay out some of the data points in terms of what we're talking about. Because as she said, these seem to be all the concerns that she was raising about doing a different plan. So I guess my question is why should we continue a failed energy policy? [PAUSE]

Ms. Spring: Well, I think I would disagree with the "failed energy policy." I do think that we need to make some changes. I think that we need to focus more on our energy policy. I think that one of the problems that we've had in recent years is we haven't been able to do the sort of production we'd like to do because of some of the lawsuits and some of the things that companies have been tangled up in trying to get all their permits and production things moved through.

I think one of the things that we tried to start on and have not been able to get as much done as we'd like is reviving our nuclear industry. In the Energy Act of 2005 we put in the Title 17 loan program that has been very slowly moving forward. We'd like to see more action on that front in terms of actually getting more nuclear plants developed. We were moving forward on the Yucca Mountain Project and the Department of Energy finally delivered their license application to the NRC. Unfortunately it looks like this Administration is not going to move forward with that. I think that there was some progress made on important issues. I know there's a lot more to be done.

Howard: Anybody else?

Mr. Dotson: I'd like to jump in on that and just note that Secretary Bodman in the last Administration – publicly said they got 95% of their energy policy implemented during the course of their eight years. And from 2001 until 2008, household energy costs basically doubled for consumers in this country. They went from around $3400 to over $6000 – that's direct costs. And then

indirect costs were higher as well. So I do think that there is – the idea that somehow we're on the right course that we need to continue – I think there's a lot of data that disproves that.

Howard: Either of the "Joes?" All right. Pass? Sir?

Mr. Pressman: Hi, there. My name is Dave Pressman from Energy Ventures Analysis. This question is for Joe Aldy and Greg and it concerns cap-and-trade versus carbon tax. Most economists would suggest that carbon tax is easier to implement, not as easy to "game" as Andrea was talking about, and is generally just easier overall to implement and to get revenues from. We've seen the European cap-and-trade model and the program in the Northeast – the RGGI Program – have a number of problems relating to a higher emissions cap resulting in lower emissions credit prices and just diminished effectiveness overall in limiting emissions. And my question is why has the Administration and Congressman Markey, Chairman Waxman – why have they decided on cap-and-trade versus carbon tax? Is it simply because they think they're not going to be able to pass the "T-word" through Congress? What is it exactly?

[SOME LAUGHTER]

Howard: Joe, you want to go first?

Mr. Aldy: I'll go first. I think there are a number of reasons why the President and the Administration are working on cap-and-trade. I think first it's important to recognize that we hear - and as an economist I talk to my economist friends who talk about a carbon tax - that sometimes the vision of a carbon tax that is crafted in the ivory tower is a little different than what happens when we start working inside the Beltway on how one would design it. And so occasionally people will bring up from experience – it's not that I was involved in it fortunately – but the debate over the BTU tax in the early '90s.

The question there is that you had a tax that was originally trying to be a

fair tax across all forms of energy and in the end there were all these exceptions negotiated for different rates on different fuels and you find out than in the nature of the political process, that something that was initially trying to be simple, transparent, etcetera ends up being very much modified through the political negotiations. So the idea that designing carbon taxes is all the more simpler than the cap-and-trade route is because we're in a world in which we've seen cap-and-trade debates on the Hill dating back to 2003 with McCain and Lieberman's first bill.

What you start seeing is that the process of making climate legislation is not simple. We don't have the analog in terms of the political process on how to design a carbon tax. I think there are a couple other reasons why we are thinking about cap-and-trade. The President has given this a lot of thought. He actually co-sponsored a cap-and-trade bill in the last session of Congress, as a Senator.

I think one thing is when one thinks about a vision of moving forward and thinking about a world in which we have a cap-and-trade program, most of the rest of the developed world is either implementing or strongly considering cap-and-trade. You now have 27 nations in Europe under cap-and-trade under the EU. You have about another three or four European nations that are not EU Members that are designing cap-and-trade and working with Brussels to integrate their systems. You have the Australians who have proposed their cap-and-trade. You have Japan and Canada that have both talked about cap-and-trade but are not as far along. Australia and New Zealand have also done work about cap-and-trade. There's a lot of discussion about how, as we move forward, we can think about how to integrate among the developed countries our cap-and-trade – our climate policy regimes. And it seems much simpler to do that if we had a cap-and-trade program that could link in with theirs as

opposed to a carbon tax.

I think the last thing that's important is when you actually talk to economists on why they say they prefer a carbon tax, some of the concerns they have with cap-and-trade you can address with how you design the cap-and-trade program. So for example, Greg discussed some of the efforts in their design of the draft bill on how to deal with the issue of cost containment. This has to do with the concern that some economists have about the volatility in an allowance market. There's way in which you can actually design cap-and-trade to make the allowance prices less volatile. They can then inform the investment decisions that then mimic some of the properties of a carbon tax. So I think there's a way.

And also how one thinks about how you use the allowance revenues from a cap-and-trade auction. You can help offset the energy price impact on the affected population. And then you're able to really see that there's actually not a stark "this or that" but really sort of a gray area in how you try to draw the best public policy attributes to design your domestic climate program.

Howard: Greg?

Mr. Dotson: From Chairman Waxman's perspective, I think he looks back on the experience with the Clean Air Act where cap-and-trade was adopted and it's been a very durable structure. Never amended by Congress…

QUESTIONER (PRESSMAN ?): Are you referring to NOx and SO2?

Mr. Dotson (Continues): I'm talking about the Acid Rain Program

QUESTIONER (PRESSMAN ?): Right.

Mr. Dotson (Continues): in the Clean Air Act. And it was enacted in 1990 so – 19 years ago. It's never been amended. Through the regulatory process, it has been strengthened over time. But that kind of durability I think is very important because the cap provides an environmental certainty and we've

demonstrated that, with that certainty, you can also have a durable policy structure. From a tax perspective, tax bills pass every year. Taxes get adjusted every year and I think there is the question about whether that would be durable over time and whether we would be able to provide the certainty that we needed in the international context to show that we're serious about climate change.

I think there is another issue. Looking back to 1998 – and I'll stop in a second – Chairman Waxman tells the story about basically he took EPA's estimates about what it would cost to get those reductions of sulfur dioxide at that time and he said, "Well, let's just set a tax on it, instead, and not do a cap-and-trade." You would have set that tax 10 times higher than it needed to be based upon just looking at allowance prices versus tax prices. So it's also not a very nimble instrument for getting accurate results. And so you'll end up with a cap-and-trade program being more effective at a lower cost.

Howard: Andrea? Would you like to…

Ms. Spring: Well I don't think that the Acid Rain Program and this cap-and-trade program are really a good analogy, or really close programs. The Acid Rain Program was much smaller. You're talking about a very small number of sources, a much smaller trading program in general. Obviously, when we brought the Acid Rain Program in, we were all ready to start easing opportunities for switching coal sources. So you need to put in a few new rail lines to be able to transport more of your Powder River Basin coal. You switch your coal source over and you admittedly throw some high sulfur coal mines out of business but it was actually a much more easily implemented program. And I'm not sure how much of the low cost of the long-term implementation of that had to do with the cap-and-trade program and how much of that had to do with the ability of the other coal sources.

On the cap-and-trade versus carbon tax, I think a carbon tax would actually be a more honest and transparent way of going about this. Obviously you could make a tax program very complicated and as we have seen, you can make a cap-and-trade program very complicated. I think that Congress can go back and change a tax or a cap-and-trade or anything else you do from year to year. I mean we've seen the EU cap-and-trade programs change over the years. I don't think there's more certainty or less certainty with either of them. At least with a carbon tax, you're kind of admitting what you're doing. You're raising energy prices and putting the money into the government. With the cap-and-trade program, you are doing the same thing.

Mr. Goffman: Just one additional point on this sort of scope of the effort. We estimate that the number of entities subject to our "Global Warming Pollution Reduction" title and subject to the cap in this is roughly double the size of the Acid Rain Program. So it's perfectly manageable.

Ms. Spring: And the size of the markets? The financial size of the Acid Rain vs. the cap-and-trade?

Mr. Goffman: Far below. The size of the market's larger, but smaller than a lot of markets that are out there – other energy markets that are out there.

Howard: I should say that I first meet Joe Goffman in 1989. The Acid Rain Program has come up. I think Joe can claim he was working for Environmental Defense at the time and I think he was a leading progenitor of that program, although Joe would be more modest, of course. But since his progeny have come up in our session, I want to know if he wants to defend his children? Or…

[LAUGHTER]

Howard (Continues): …let it go by or whatever? I mean again, it's a

little bit of a sidebar.

Mr. Goffman (Continues): Well, actually I think the defense that's been made of a quantity rather than price-based approach has been more than ably made by Joe and Greg. I'm curious as to whether the economists who the questioner is citing for the proposition that a carbon tax would be simpler and less easy to "game" are familiar with the Internal Revenue Code…

[LAUGHTER]

Howard: I hope they are. If they're American…

Mr. Goffman (Continues): In that case the statement that "a carbon tax would be simpler and less easy to game" is an awfully curious one.

Howard: Got it.

Mr. Midnik: For Greg or anyone – in Waxman-Markey there's so much attention on…

Howard: Could you identify yourself, please?

Mr. Midnik: Oh, Steve [Midnik]. There's so much attention on Title 3 and cap-and-trade as we just saw, but my question is more narrowly about Title 1 and Title 2 – the "Renewable Standard" in 1 and the "Efficiency Standard" in 2 - and just starting out. For example, the 2012 goal for renewables is a 6% goal. In Title 2 the 1% goal for electricity efficiency, and then there's also natural gas. Is there concern that even those 2012 goals just 2-and-one-half years off are pretty tough challenges given where the utilities and where we are presently? And then my second related question is what is the possibility that those standards may survive and see passage this year without the Title 3 cap-and-trade?

Mr. Dotson: Well, with regard to the renewable electricity standard, I don't think there's much concern because that's basically what's projected to be online as far as renewables right now anyway for the early years. So, meaning

that's readily achievable and we think there's so much efficiency opportunities that we think that 1% energy savings by the LDCs would also be quite do-able. With regard to moving separately, our Chairman has said very clearly he thinks these issues are clearly linked and he wants to move them as a single package.

Howard: Anyone else on the panel?

Ms. Spring: Well, I think we are less than 2% today if you count the sources that are – as part of their RES. So you are talking about a big increase. I'm not sure it's an unachievable increase. I think as it goes higher up is when you run into more problems just from a liability perspective.

Howard: Okay. Anyone else? Nope. Let's move on. Sir?

Mr. Walawalkar: I'm Rajud Walawalkar with Customized Energy Solutions. My question is [unintelligible] because I spent in my not too distant past almost four years working at part of Carnegie Mellon Electricity Industry [unintelligible] at Carnegie Mellon University discussing most of the issues with [unintelligible]. And before I get to the question, I just want to quickly comment on one of the remarks which you have made…

[TWO VOICES TALKING OVER EACH OTHER]

Mr. Walawalkar: (Continues): …linking climate policy of U.S. to emissions in India. Right now India total has electricity generation gap capacity of 150,000 megawatts whereas in [unintelligible] serving 51 million people – we have our own 160,000 megawatts. We're trying to link what action U.S. is going to take…

Howard: Okay. Can we have the question please?

Mr. Walawalkar: Greg, you correctly pointed out that we need a carbon tax of almost more than $50 or $60 per ton before we see serious action in terms of investment into CCS or other technologies. And I think the efforts which you are pointing out in terms of getting demonstration is really good in the

right direction. But one other issue is that there are lots of public perception issues in terms of acceptance of carbon sequestration and Dr. [unintelligible] and David Victor have done studies, working on some of the issues. So are you worried about not just technical and economic viability [unintelligible] of carbon sequestration, but also public perception and long-term impact rather than just looking at short-term viability [unintelligible] carbon sequestration?

Howard: Thank you. So public acceptance and public perception as it applies to CCS? It may apply to nuclear as well so you can broaden the question out.

Mr. Dotson: I think from our perspective – I mean those are issues that have to be dealt with. We have to see that people are comfortable with it and obviously you're not going to see – what you will see is a development or a deployment that will happen over time. We'll learn from that. And we'll find out how it works and what people's reaction to it is. I would say – I think that's really my answer on that.

Howard: Any other…Joe?

Mr. Aldy: I would say that this is a priority for the Administration. That we know it's going to be important to try to help push on this technology, and working with Congress we're able to secure about $3.4 billion for CCS technology in the Recovery Act to try to both test out some of the different technologies and try to accelerate that process. A small fraction of the funds I think as well will go to help in actually mapping the geologies so we understand where are the best places actually to try to store captured CO2 underground.

But it's also something where it's an important way we're engaging other countries. The President's first foreign trip was to Ottawa back in February and the President and the Prime Minister signed a Clean Energy Dialogue. Signed it to start a Clean Energy Dialogue between our Ministers, and one of the key

areas of cooperation is on carbon capture and storage technology. The Canadians in their Economic Recovery Package are also putting some funds in for this. And when the Prime Minister of Australia was in town just about two weeks ago now, we agreed to sign on as a founding member of the Global Carbon Capture and Storage Institute that the Prime Minister has launched. So we're also reaching out to partner countries around the world and have already had conversations with the Chinese as well on how one can try to move this technology. So we recognize that it's important. There's a variety of ways which different people come up with on how one can try to capture CO2 and so we're trying to find a way in which we can test out a variety of these to figure out what is actually the best and most effective technology going down the road. But it's going to be, we believe a key part of the energy portfolio as we move forward.

Ms. Spring: And I think public acceptance will be helped by this sort of long-term experience people have with injecting CO2 as part of enhanced oil recovery. There is actually a lot of history there, a lot of people who have experience in that and I think that might help give people - particularly as we develop liability and regulatory regimes around CCS – that'll help give people some comfort.

Howard: Joe? Any thoughts? [PAUSE]

Mr. Goffman: One of the things that certainly we're beginning to hear over on the Senate side is that oil recovery and what's called "enhanced oil recover" is a potentially significant contributor to physical sequestration. And as Andrea said, since that's something with which, you know, stakeholders, specific stakeholders and society in general have experience, it might be a pathway toward public acceptance. This is a problem – that is, climate change and climate policies is a problem in which the post-enactment politics could well be as sensitive as the pre-enactment politics. And I think an awful lot of

Members who number among the serious proponents of comprehensive climate policy are already giving a lot of thought to that. And that's one of the reasons that the question of the redistribution of allowance value and the distribution of the allowance value is getting the intensity of attention that it's getting.

Howard: I'll take the moderator's privilege, such as it is, and delve into this question a little further and ask the whole panel. To what extent does the design of policy that might be enacted affect the post-enactment situation. There was some discussion earlier about a tax versus a cap-and-trade, pretty standard discussion, but a lot of it assumes that everybody shares this common goal that once whatever is enacted is enacted, although they don't agree what should be enacted, that cost-minimizing behavior would be a good thing, but I wonder if that may not necessarily be the case. We know this is not the only problem facing the world and people have views independent of this problem on the suitability of a particular technology, or not, and how would actually the provisions of the policy directed toward this problem affect peoples' willingness to either set aside their other concerns in the pursuit of this problem? Or would people say, "No we're not going to set aside our other concerns in the pursuit of this problem?"

Mr. Dotson: One thing I would contribute to that conversation is just that I think that's exactly what our Members are most focused on – that there are transition issues. They want to make sure that this is something that's going to be workable for people. And as we just look at proposals out there on – one idea out there has been to do a cap-and-dividend approach because there are different mixes of carbon-intense generation in different parts of the country. You actually do end up with a – you would end up with implementation issues I think that would – if you were able to even get that enacted – you would have implementation issues that would just be extremely difficult for people to

tolerate. So I think Members are trying to focus on that and ask all those questions. How does this deal with workers and businesses and consumers?

Howard: Anyone else?

Speaker (Mr. Goffman?): Just to emphasize Greg's point, perhaps through an anecdote. First of all, let's be clear. I think on the Senate side at least from the point of view of vote counts, it's not a given that there are already 60 votes there to do this. That's why I made my comment before about, you know, process being policy. But it's very interesting if you just pay attention to what various offices and staff are themselves attending to. One of the big questions that's getting a lot of attention has to do with the question of distributing allowance value. And very often what staff focus on is, "Okay, if my boss is going to vote for this, what's the story that he or she will be able to persuasively tell in the town hall meeting back home to explain the issue and to explain the vote?

And for those Members who are going to be inclined to vote for this approach – vote for this and any basic approach - the story's not that difficult to tell to the extent that allowance value is going to be distributed to key interests, key stakeholders and perhaps, as the Administration suggests and as others have suggested to consumers and/or taxpayers. But Members are really focusing on which of these distribution vehicles are the ones that are going to be the most easy to identify, or identify with, by their constituents. I think that's because they understand that this is not just a matter of being able to explain the vote in the first few weeks or months after the Congressional debate. But if this is going to work as a long-term program, how are taxpayers and consumers going to find it? How are they going to experience it? Is it something in their day-to-day lives they will experience as sustainable? And ultimately I think the emphasis will be on making the transition as seamless as possible. I think the

assumption is that most consumers and taxpayers would like to see their lives changed as little as possible. This is still the same pluralistic society and individuals are staying the same pluralistic beings that they always were and will continue to be, even if we adopt comprehensive climate policy.

Howard: Great. Sir?

Mr. James: Hi. Bill James with JPods. A specific example of a cap-and-trade benefit is that we came to agreement in intent last week with Lee Scott, the CEO of Walmart, to build 20 miles of our solar-powered transportation networks around the Walmart stores. We can give them the two-and-a-half billion watt hours of energy they need to run that store and run our zero-emission transportation networks and make it so their customers can get to and from shopping without having to own a car.

Howard: All right. Thank you. Sir?

Mr. Ackwirth: Will Ackwirth [sp?]. I'm the editor of a magazine that covers the futures industry. The question about regulation which I think is a very critical part of that post-enactment politics and public perception. You all are probably much more familiar than I with what happened with Enron and Amaranth and the problem with "gaming" which I think Andrea cited. So can you give us or give me some idea of how you're going to make sure that the public doesn't see that kind of problem once a cap-and-trade scheme is established? Because I think it would really damage the perception of what is in fact a [unintelligible] market which is already I think something that people have a lot of skepticism towards.

Howard: I think there's something that Andrea touched on in her remark, but let her go first, but let others also speak?

Ms. Spring: Well, we're actually concerned about that. I mean it's obvious if you're going to do carbon credits that you're going to do a variety of

products around those. Presumably people will sell a variety of hedges and derivative credits off that. People will sell hedged electricity, or hedged fuel, including building in the carbon credit price for that. I think particularly some of the entities that have never been as comfortable trading on the derivative side, you'll see some of the small power entities who have never really played as strongly in that market are really uncomfortable with the idea of being deeply involved in that market. They don't necessarily have the kind of personnel in-house to deal with that. And there are some concerns there. Obviously we strongly support regulation and oversight of these markets and actually enhanced regulation oversight I think to some level of what we currently are looking at. But I'm not sure that creating this huge new energy product is going to go very smoothly or easily from a lot of peoples' perspective.

Mr. Dotson: I would just say that in the last Congress, Chairman Waxman took the lead in looking into the Wall Street problems. He had a number of very high-profile hearings and really did a lot of investigative work into what had happened – what was happening on Wall Street and with the various hedge funds. And he saw a lot of that when he confronted Alan Greenspan and the laissez faire approach that he'd been taking with markets. He is pro-markets. He thinks markets can work in a way that reduces our costs and provides services that our economy needs. But it has to be properly regulated and he's been very strong on that historically and has included provisions in the discussion draft to ensure that it's properly regulated as well.

Howard: Do you want…or…Question over here.

Mr. Shahile: Yeah. [Faji Shahile] with S&L Energy. A general question on how decided are the minds of policymakers now and how decided are the signs that the climate is changing, that greenhouses are a problem. I mean what is it based on? Are there – in the analogy that was used earlier –and

there's a lot of Palestinians that say they want to return to the Promised Land as well…

[LAUGHTER]

Mr. Shahile: …so…

Howard: Boy, I'm really getting in hot water now.

[LAUGHTER]

Mr. Shahile: …how decided is the science? Are there voices in the Administration or in Congress now – are they saying, "Wait a minute. Let's continue the scientific debate first."

Mr. Aldy: I'll start by noting that in November after the election, Governor Schwarzenegger hosted a conference in California on climate change and brought in officials from a variety of states as well as foreign representatives. At the time the President-Elect gave a video-taped speech in which is said that from his view, the science had been settled. I think the important thing to recognize is that when we say – when the President says, "The science has been settled" that doesn't mean that we understand climate science with certainty. But we understand the risks well enough to know that we need to actually start taking some actions now that one can think about as simply taking out insurance and that is, no one knows with certainty whether their house is going to burn down in the future, but you take out insurance on your house.

What we need to do now is actually start taking some efforts to make sure that we are protecting ourselves against the worst case scenarios - where there is actually a fair amount of science pointing out that if we take no action, we're going to significantly increase the probability that we will realize them at some point in the future. So, it's not to say that we know everything with certainty. We can't estimate with perfection what we think temperatures will be in 2100 or what sea level rise will be or how many hurricanes will hit the Gulf

Coast in the year 2100. But we have enough information to know that it is prudent to take action now and to start going down that direction of reducing our emissions, keeping options open as we learn more about the science. There are some people that feel like we're taking – that what's being proposed are ambitious actions. There are also those in the scientific community who feel that actually what the President has proposed is not strong enough, that what the Chairman has proposed is not strong enough. Who feel like we actually need to take even more ambitious action. So you hear voices on both sides of this debate.

I think the important thing is that we actually start taking action now in keeping the doors open and addressing climate change. I think it's also very important to recognize, "How do we do this in a way that actually can promote new manufacturing industries in America." There is this frustration that we hear in the political debate that if we're going to push for electric vehicles, do they have to be powered with other country's batteries? Why is it we can't make the batteries here? And so that's why there's some effort to try to promote an advanced battery industry domestically. Then there's efforts to try to push us in other dimensions of – sort of the next generation of energy technology. So there's ways in which you can take action that's prudent in light of how we understand the science now that also helps deliver on your economic objectives.

Howard: Okay. Well, thank you. Anyone else? I mean – Andrea, you already spoke to Chairman Barton's view…

Ms. Spring: Yes, we obviously don't believe the science is settled. The models haven't been proven. And I think when there's this kind of band of uncertainty over what the outcomes might be, it's actually prudent to think about what you're doing in terms of transforming an entire economy away from

carbon. Is that what we want to do right now? Or do we want to look at developing new technologies so that if the science turns out to be settled in the future, then we're prepared.

Howard: Okay. Well, thank you. I know I'm leaving a couple of people at the microphone which will not make those people happy, but the session is supposed to end at 12:30 and it's a couple minutes after 12:30 and the panelists are extremely busy people. In fact I kind of had fears that they weren't going to show up. They did show up. I thought they did a great job. Please join me in thanking them…

[APPLAUSE]

Howard: And thank you all for attending this year's EIA Conference. I thought the audience was great also. So…

(END OF SESSION)