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P R O C E E D I N G S

MR. SAMUELSOHN: Good morning. Thank you for coming on a Monday morning to the Brookings Institution, and nice to see so many people coming out on a Monday. New faces and some old faces that I remember, as well. My name is Darren Samuelsohn. I am a senior energy environment reporter from *POLITICO* and *POLITICO Pro* and I'll be leading this discussion here for the next 90 minutes talking about climate change, energy, the Presidential election, what's to come in 2013. Lots of questions. Very few concrete answers at this point in time, but certainly room for us to talk and start to wonder where things are going. I remember actually sitting in this room four years ago. Brookings was doing a panel. I was a reporter, and if I'm not mistaken, the advisors to the McCain, Obama, and Clinton campaigns were here talking about climate change and energy, and where they thought things were going. And my, things have gone in a different direction, perhaps, than those three individuals that were here representing those campaigns we're talking about.

We're going to talk a bit about Ted Gayer's paper here in a second, but I just want to talk, just for a moment, about the Campaign 2012 Project. This is the 7th of 12 events that The Brookings Institution is holding on these issues as we go forward. There are still several more to come. The Arab Awakening, the global economy in China, terrorism, are all three topics that will be discussed here in the future with dates to be determined.

So, let's talk about Ted Gayer's paper, and I'll introduce the other panelists as we come to them in a moment, but Ted Gayer is a senior fellow and co-director for Economic Studies here at The Brookings Institution. And Ted recently penned a paper talking about climate policy and linking it to fiscal and environmental reform, talking about the connection, perhaps, to a carbon tax. Perhaps to trade-offs between climate policy and some other environmental policies. Ted, why don't you start off first just telling us a little bit about where you think things could possibly go here in 2013?

MR. GAYER: Sure, I can give that a shot. That's probably the hardest part about writing this paper was, you know, the direction of the whole series was giving advice to the next administration, no matter which party wins. But always, especially on climate policy, with any policy, you always have it in the back of your head what is actually the feasibility set, politically what is going to happen. And as kind of a card-carrying economist, I'm always facing that trouble. And one of the things I like about being at Brookings is it puts you to the real world, and you actually have to consider the likelihood and the politics of the situation.

Having said that, I did try and go a little pie-in-the-sky and did talk about what I would like, what I think is the most optimal response and the best response on climate policy for the next administration. And that is not giving up on this hope, which, as you alluded to four years ago, you had at least in the presidential campaign level, bipartisan support for putting a price on greenhouse gases. And I think the economics is quite clear and convincing, at least to me, that if you want to do something meaningful for climate change, and you want to get meaningful reductions, you really need a price on carbon.

Now, we went the cap and trade route. I've always preferred carbon tax to cap and trade for various reasons that I could get into, but I think that cap and trade is also, for all practical purposes, is close enough to a carbon tax and something that's worthwhile. The interesting thing is that I've been -- previous to being at Brookings, I was at Georgetown for many years teaching this stuff. And the kind of -- the economists -- you can give a nice lecture on kind of comparing and contrasting cap and trade and carbon tax and kind of the -- since politics comes up, it's always, well, cap and trade is much more politically feasible. And we did have some experience with that, especially with the sulfur dioxide market, which I think was widely seen as a success.

Now, we live in a world where cap and trade is not considered politically feasible, and maybe this is just stubbornness, but that puts me back to carbon taxes. If I'm going to lose the politics of it, I might as well go with my preferred policy. Having said that, and the kind of movement forward, and I tried to frame this in the article, I do think it's a long shot, at least in the short term, especially given the state of the economy right now, that we're going to get meaningful climate policy in the form of something like the carbon tax. My hope, and on my optimistic days the things that I try and cling to, is the flipside of my despair about our fiscal situation.

And so, I do think the next administration will have to act in short order on fiscal reform, and I do think particularly on tax reform. I think tax reform -- the good thing about having such an inefficient, complex, unfair tax system is it does you give you a lot of scope for negotiation, and one would hope that that would -- somewhere in there, you can get a compromise. And the way I frame it in my piece was that a carbon tax could be part of tax reform policy. And, in fact, I increasingly think it has to be part of a tax reform policy if you are going to do it. Kind of putting it in isolation, I think, doesn't work very well and has too many political hurdles. Part of a semi-grand package of a tax reform where you need revenue and this is one source of revenue that can be used to offset deficits or offset other marginal tax rates, I think could be part of a grand compromise there.

MR. SAMUELSOHN: Let's think about how this could possibly work and understand that when the carbon tax gets mentioned up on Capitol Hill, my editors laugh, to put it politely. I think we laugh and kind of wonder about the political reality of this. But who would have to propose this to even make this a reality? Would this have to come from the White House? Does this have to come from the chairman of the House Ways and Means Committee? From the Speaker of the House? From Senator Baucus? Who's going to be the first person to put their neck out?

MR. GAYER: Yes, I think it would have to come from the White House, and I don't know that I would laugh at the mention of a carbon tax, but I think I would show the sentiment that it's a difficult haul. We did see a little bit of this discussion. We had two fiscal commissions. We had the President's Fiscal Commission, and then we had the Bipartisan Policy Center's Fiscal Commission. And so, as evidence of why this would be difficult, I thought both of those commissions did a good job, and they both, you know, took the lessons of tax reform seriously and came up with a compromise deal, especially if you focus on the tax reform part. But neither of them actually came up with the carbon tax, and I think the calculus on the -- at least on the Rivlin-Domenici one was, okay, we need new revenue. It would be good to get a new revenue source. And I think they essentially came down to you can shift toward a consumption tax, or you can look at a carbon tax. And I think within that commission there were a lot of advocates for the carbon tax, but, you know, as far as -- really, I think a revenue estimate, as far as how much revenue you get. You don't -- and I think this -- I think, another important point, a carbon tax is not going to answer our fiscal woes.

MR. SAMUELSOHN: Right.

MR. GAYER: Maybe that works against it. In that case, it works against it if it was a salience argument. If you're going to introduce a new tax, introducing two new taxes is going to scare the heck out of people, so let's stick to one.

MR. SAMUELSOHN: Give me the ballpark. How much do you envision this raising over the short term and the long term?

MR. GAYER: You know, so you get varying estimates, and it depends where you set it. If you actually look at the climate bill that failed in the Senate, the Waxman-Markey Bill, that was a cap and trade bill. If you kind of set a tax that's similar stringencies to that cap and trade, you're looking at roughly, you know, it ramps up to, you know, a hundred -- low $100 billion a year. And then, one thing important to consider, most of these carbon taxes, they kind of ramp up. And they went down in revenue, so you do have to, you know -- we have a long-term fiscal problem, so there is a little bit of a hump there to get through. But $100 billion is meaningful. That is, I think I put in the paper, about equivalent to our excise tax revenue. You know, we have over a trillion-dollar deficit, so it doesn't quite -- it's not the Holy Grail there. So, I think the word I kept using in the paper was "meaningful," but not, you know, it's not going to be a game-changer there. So, it definitely -- and that's another reason it has to be one among many.

MR. SAMUELSOHN: Right.

MR. GAYER: But again, to get to your point, it's hard for me to -- and you know, I'm not an expert on the political scene -- it's hard for me to figure out the optimum political strategy to get it through. I do think it has to start with the President to embrace it. And it's going to depend on the dynamics of the campaign, obviously, in the next administration.

MR. SAMUELSOHN: We haven't heard President Obama say anything about a carbon tax and I don't think he will --

MR. GAYER: No.

MR. SAMUELSOHN: -- between now and then. There's an interesting article that the *New Yorker* published here about, just today, about the second term and possibly talking about a second term. And up high in the story -- this was written by Ryan Lizza -- is climate change, he writes, is one of the things that the President could potentially put as sort of his legacy issue in a second term; he says one of the few issues Obama thinks could fundamentally alter and improve the world decades from now. So, I think a lot of people wonder if Obama would put climate change first or immigration first in, obviously, a short window of time to do anything domestically.

But let me ask you this, just big picture, how much do you think the President is going to focus on climate change if he did win a second term?

MR. GAYER: I would think at least, in the immediate years right after the election, probably not as -- I wouldn't put it as high on the list. And I think that the bigger issue, also long-term issue, is our immediate job crisis and our fiscal situation. So, I think the emphasis is there. We're still at 8.2 percent unemployment and latest GDP was 1.9 percent, so I still think that that immediate concern has got to be top of his agenda, and that, coupled with long-term fiscal reform. And I think as far as his legacy goes, I think he's probably got more invested in the fiscal reform. I'm optimistic that -- I'm happy to hear that it was mentioned in that article. I haven't read the article yet, so -- but I would be a little skeptical that it would be on the top of the agenda, at least in 2013.

MR. SAMUELSOHN: We're talking about Obama. What about if Mitt Romney is elected President? Does a carbon tax get tossed completely out the window?

MR. GAYER: Completely out the window? I don't know if I would put it completely out the window. So, Romney has not mentioned carbon tax either, and he hasn't mentioned cap and trade either. And to the extent he mentions climate, it's more kind of critical of any attempts that Obama's made to address climate change. So, it's certainly not a campaign issue. My glimmer of hope -- they are twofold. One is his economic advisor certainly mentioned a climate policy.

MR. SAMUELSOHN: Greg Mankiw you're referring to.

MR. GAYER: Greg Mankiw and Glenn Hubbard, I think, were mentioned in the past, too. And to the extent that -- and Glenn -- and both of those have written on tax reform, also, and is mentioned as part of a tax reform deal. Now, as an economist, I realize economic advisors don't usually win the day when the politics are running against you, but I to think that does at least give some intellectual credibility to a good idea within a Romney administration. But, yes, I would still put a very low probability.

MR. SAMUELSOHN: We can remember where Romney was as governor. In the first year he did support -- or at least the beginning of the regional greenhouse gas initiative.

MR. GAYER: That's correct.

MR. SAMUELSOHN: Would you imagine, let me just stick with Romney for a second, working with a Democratic Congress it would be more likely versus

Romney and a Republican Congress? And I would say if Romney wins, I think the presumptive conventional wisdom is he's working with a Republican Congress for the first two years.

MR. GAYER: I haven't thought about it. I would think with a Democratic Congress -- again, I'm looking at a situation where we've got tax reform on the agenda. And you know, you look at something like the Simpson-Bowles or the Rivlin-Domenici plans, and I guess the question is whoever wins the election, the composition of Congress is, are you getting that commission moved to the left or to the right a little bit? And so, you know, I think you're going to need a little bit of the Democratic support in the Congress if you're going to have a Republican President to move you a little bit toward something to where carbon is on the agenda. That's much to my chagrin.

I mean, I think, again, the fundamentals of tax reform and some sense what I -- Republicans or conservative environmental policy should favor it. I brought it up earlier. You know, our SR^2, our sulfur dioxide program, was signed by the first President Bush. George W. Bush endorsed some cap and trade programs. McCain endorsed cap and trade for climate. Now, George W. Bush didn't endorse it for climate, but for sulfur dioxide, nitrogen oxides, and mercury. So, you know, it's a little bit discouraging to me that something that -- you know, market-based environmental regulations, which should be, I think, and has been to some extent a fundamental tenet of conservative principles, has been moved away from and demonized. And so, the problem then, of course, is if you do want do something about the environment, you're left with alternatives which, if you tend towards being pro market or free market, those are going to be worse off and more costly, I think.

So, in some sense, I think the Republicans painted themselves in the box there. Maybe a new administration gives you a new day, but I'm skeptical.

MR. SAMUELSOHN: We'll come to questions from the audience in a little bit here, but I want to open up the panel to our other two distinguished panelists. We have Katherine Sierra and Charles Ebinger from The Brookings Institute, too. Katherine, let me start with you. As you hear Ted talk about a carbon tax and the way it could fit into a fiscal debate, which is sitting there ready to go, my newspaper has already published it. People are talking about this now. They have to if they want to be ready. How serious do you think that this idea is of a carbon tax?

MS. SIERRA: Well, when I read Ted's paper -- I follow international politics and try to think about how the United States can regain leadership on climate agenda, climate negotiations, climate action. So, when I read Ted's paper I thought -- I sort of drank the Kool-Aid. I said this is fantastic, you know. This is a great puzzle that can both put us back on the map in terms of doing what everybody says, whether they're an economist, whether they're the city mayors, whether they're people in the industry that are trying to push renewable energy efficiency, which is put a price on carbon. Gets that piece done. Start looking at the fiscal situation. Gets that piece done. And then helps me get what I need to get done, as well, which is kind of help push the funding of international climate finance. The OACD countries have pledged $100 billion per year by 2020 for funding for both mitigation and adaptation to the developing countries. And where that money's coming from is quite unknown. Yes?

And many countries who are also in difficult fiscal situations are looking at the U.S. as both the first mover or, if they don't move, as a way to give themselves an excuse not to move. So, that was the additional piece that I thought was going into this nice puzzle.

Having drunk the Kool-Aid and then sobered up a little bit, I actually don't see that world happening in the next couple of years.

MR. SAMUELSOHN: Yes, it's kind of hard to envision, but let's stay with the Kool-Aid or whatever's in our coffee for a second. Let me ask you -- I mean, let's just pursue this. Say it does happen, and does that really give the U.S. additional standing in an international setting? You think about the Australians have a carbon tax. The European Union has been pushing and saying we'll go further. The Japanese, obviously, did a lot with the Kyoto Protocol. And what did that really get us here? We're in a state of perpetual gridlock at the international level. Yes, things are moving forward, but really, if the United States were to do a carbon tax, what difference would that make on the international stage?

MS. SIERRA: Well, you know, if you look at the players. You've got the two players: the U.S. and China. Okay? And both of those are kind of playing in a stalemate. Sometimes China is moving and some of their strategy. The U.S. says, well, we're doing things. But really in some ways they're kind of comfortable with each other; not taking bold action, pushing forward. And that also gives the reason for other countries to kind of demonize the U.S. If the U.S. stepped forward and said we are going to join the ranks of Australia, of Europe, of Japan, of Korea, and start acting more boldly, that both puts pressure on China to act and to act in a more aggressive fashion, and to put in place the kind of pledges that, I think, people are looking for.

The other piece of that puzzle, which is quite interesting, is, you know, say what we will with the climate negotiations, there has been a change in those negotiations from the top-down Kyoto-type approach to something that is more of a pledge and review, which in the last meetings in Durban included at least a prospect for all countries coming forward with their pledges in a more consistent and legally binding way. So, I think that actually could be an important game-changer. Without the game-changer, it gives lots of other parties the excuse not to take action.

MR. SAMUELSOHN: You talk about the money being made available for international finance, but as we saw with cap and trade, everybody wants an allowance and every industry will raise their hand. Every lawmaker with a constituency raise their hands. How would you possibly wall money off for international climate finance just knowing that on the Hill there would be pushback to helping other countries when the United States is in the situation it's in?

MS. SIERRA: I think there's a couple of dynamics. One is, I think, even if there were these revenues coming from the tax or from a cap and trade situation, it's going to have to be used in a very precise way to leverage private finance. I think in the most optimistic scenario, you're just not going to see a lot of public money coming forward. So, the Holy Grail in the climate finance arena is to see to what extent can fairly modest amounts of public finance unleash private capital. So, that's, I think, one push, and I think that is something that should be attractive to both parties, whoever wins the White House.

That's not accepted by the developing countries (inaudible) who are looking for all the $100 billion to come in the form of pure public finance coming forward. But I think the realistic pieces are there.

The second is whether or not there's some other international flows that might come that might be dealing from that. And so, we had here at Brookings a couple weeks ago, a discussion on maritime and whether or not taxes on maritime industry, on bunker fuels and the like, could provide a global source of financing; a new type of innovative source of financing for the $100 billion. I think there could be something that could bind some funding. I mean, it think it would be expected to come from the United States, leveraging private capital, other sources of fund that may be more pure public in nature from a global tax of some sort. Again, very difficult to get through, through both Congress here, perhaps, maybe, most of that going for things like adaptation, which are not as easily attractive to the private sector.

MR. SAMUELSOHN: Charles, you wrote a paper that puts into context where the next administration will be going with several of the issues that have been front and center here for the Obama administration in his first term: The Arab Spring, Fukushima, Shell Gas -- which I don't think when I was sitting here in 2008, and the campaigns, were talking about things they could possibly envision where we were going with natural gas, climate science, and just the global macro economic landscapes. So, talk to me about this next administration coming in, how much are they looking back versus are they putting a completely new energy roadmap, you know, on the table, do you think?

MR. EBINGER: Well, first of all, I believe the President gets an unfair rap about, you know, what he has or hasn't done on climate policy. Because the reality is, if you look at just his getting the new CAFE standards enacted for automobiles, it doesn't look sexy today or tomorrow, but when those standards go into effect over a decade, we're talking about knocking 2 million barrels a day in oil usage out the window. So, that's a considerable amount of emissions that will be foregone.

The President has also been very vigorous, and again, it doesn't get a lot of attention because it's small and incremental, but I think if you look at what really has happened with the Recovery Act in terms of smart grid rollouts and a number of municipalities' support for energy efficiency, advanced energy efficient firms, we're going to see, despite the highly publicized events like Solyndra, we're going to see some of these events start rippling through the economy. And it may not be the President's or Mr. Romney's next term, but over a period, again, of a decade, these are going to start to have big paybacks.

I think it's also important to move beyond just looking at what we have or have not as a society done at the federal level, and look at what the number of states have done. I may be off a little bit on these numbers, but I think 29 states now have Renewable Portfolio Standards, which are going to increasingly de-carbonize the electric power market. I'm sure there are some people in the room who are vigorously opposed to shale gas, but I think shale gas is the game-changer, not only for the United States, but very likely the world economy down the road. Just take, for example, even though I know it's a fossil fuel and we have emissions, but take, for example, that people now think we can knock out 45- to 50,000 megawatts of coal-based electric power in the United States and replace it for gas. The contribution of that in terms of reducing emissions is staggering. And we're going to see shale gas come on stream, I think, in a number of other countries including some big consumers like China and India and handful of others. This will be embryonic. It's not going to occur overnight. There are problems in all those countries with developing it, but this truly a game-changer.

And most importantly, if we want to deal with the tax question, shale gas represents an opportunity to bring back manufacturing to the United States, particularly in the petrochemical. We've had U.S. Steel say now that they're looking at switching some of their steel plants to natural gas. We had FedEx actually look at saying they're going to try to convert as many of their delivery vehicles as possible to natural gas. We're going to see jobs be created. And this is why when I hear people oppose shale gas, I keep reminding of the great phrase from I guess it was the Clinton days: It's the economy, stupid. Shale gas represents an opportunity to create jobs in this country more than any other thing that we've had in a number of years, and I don't think we should let it go by.

MR. SAMUELSOHN: You're right about the next President needing to reset the climate conversation. How? An Al Gore slideshow? What do you think is needed here?

MR. EBINGER: Well, in my heart of hearts, I don't think we're going to see anything done by the Congress or the President able to get anything done by Congress. But the one thing I would like to see -- and I know this is an anathema to any Republicans in the room. I have still been an advocate for a long time of an increase in the gasoline tax. You know, this tax has not changed since the early 1990's. Still at 18.4 cents a gallon. If you index that for inflation, you know, it's basically gone down. So, I think, you know, I would like to see 50 cents a year for four or five years rolled in to the price of gasoline, and use that money for deficit reduction, lockbox it if we can, and let's get on with some serious economic policy at the same time we do some good work for energy policy.

MR. SAMUELSOHN: You bring up Solyndra, and couple Solyndra and cap and trade together, and basically cap and trade is probably off the table for however many more years to come. And the Solyndra controversy, whatever you want to call it, has definitely put a damper on renewable energy, the image of it going forward. You could argue the merits of it, but politically, it's just become a lightning rod, as we've seen. So, you come at defending the administration with respect to the fuel economy standards and there's definitely a big accomplishment. But hasn't the President kind of, in some respects, two of the key issues -- green stimulus money and cap and trade -- kind of put two of the biggest things kind of in a lockbox? Or, you know, you can't talk about them anymore.

MR. EBINGER: You're absolutely right. And I think the President can be criticized on that front. But I still think when you look at the CAFE standards, that is going to have as much impact as anything. And if the administration -- and I'm not sure where they're going to come out on shale gas -- but if the administration recognizes the opportunities for shale gas to back out some of our old coal-fired generation, there's going to be tremendous accomplishments. On the other hand, if the Department of Energy, when they come out with their study in late summer or early fall, decides that shale gas is too dangerous to pursue, or the EPA, when they come out with their findings down the road, then all bets are off. That would be, in my view, a tragedy because I don't see anything that suggests that if it's done well, with the proper casings, that shale gas cannot me managed.

MR. SAMUELSOHN: Do you envision the Romney administration, if it was coming in, changing the field on shale gas? That they can do more than what the

Obama administration is doing?

MR. EBINGER: I think you'd probably see it, particularly if you had a Republican Congress to go with him. I think you'd see some greater opportunities of the Romney administration opening more federal lands for oil and gas exploration, particularly some controversial areas offshore. I don't think that needs to be done, myself, but I think you'd see a more favorable attitude toward the administration on that. I think you might see a more favorable attitude toward carbon capture and sequestration of coal and natural gas, but that's not going to have any meaningful effect, even if it could be proven to be both commercially and technically feasible in any reasonable political timeframe.

MR. SAMUELSOHN: Katherine, talk me through for a second -- a Romney administration on the international climate front? Are we back to where we were in 2008 with the major economies' meetings, sort of where the Bush administration left things, you think?

MS. SIERRA: Well, I think that's probably where we would be. I think what we're seeing -- kind of a confluence of activities. Even today, under the Obama administration and what we're seeing in Europe and the like, most of the action that's happening on climate action is what we call bottom-up: coalitions of groupings of business, countries, activities, that have their own commotion and motion and push. I mean, one of them is something called Sustainable Energy for All, for example, where countries, companies, and the like are saying let's really try to simultaneously provide access to modern energy to the poorest while we really push energy efficiency and try to goose up our renewables. So, I think you've got coalitions coming forward.

You've got coalitions of cities that are going to be showcased next week, or in two weeks, at Rio+20 that are saying we're not waiting for this action. What we're going to do is try to get smart, get clean, try to drive down both our emissions. Also, use water in a smarter way and use mass transit systems in a smarter way. So, I think what you're likely to see, again, in both administrations is probably funding technical assistance, capacity building, direction of the multilateral development organizations -- World Bank, OPEC, and the like -- towards these kinds of coalitions. I think they have constituencies in business. They certainly have constituencies in some of the leading cities and states, not just here, but also globally. Same thing's happening in Brazil. Same thing's happening in Indonesia, Korea, and the like, where these coalitions are happening. So, that's what I see happening.

MR. SAMUELSOHN: Is it much different than where we are now? I guess, I mean, has the Obama administration really progressed on international climate that much more than where we were at the end of the Bush administration?

MS. SIERRA: Well, I'm not sure it's whether the administration has progressed. I do agree with Charlie that we have, actually, real action happening here. I think, actually, the world community has progressed. I'm particularly driven, again, by cities, which I think that are seeing this as a game-changer for them. Don't forget we're going to be having 500 billion more people living in cities over the next couple of decades. Most of those are going to be in Africa and Asia. And the leaders of those countries, especially in Asia right now, are saying the way we laid down our infrastructure is going to matter a lot, so they're pushing that forward. That will bring in new business opportunities, so you have the IBMs of the world, the Siemens of the world, and the like, that are, again, not waiting for the carbon tax. They're saying there's actually things that we can do now on smart grids and the like to provide business opportunities, so they're moving forward. Those are the dynamics that I see out there rather than a political decision here or there in one country or the other.

MR. SAMUELSOHN: Ted, we have the luxury of talking about your paper and then letting other people talk about it. We'll come back to you now. I mean, as you've heard your two colleagues discuss your ideas, how do you respond? Do you feel like putting the carbon tax out there is a trial balloon, but is it floating, or has it been shot down already?

MR. GAYER: Well, to start, I have to use the phrase drinking the Kool-Aid and I don't object to that. I don't object to that phrase at all. I mean, but to me that's a reflection of, you know, kind of our collective cynicism on the ability to do good policy-making, not a critique of the policy in and of itself. And, you know, I would share that cynicism. The only other thing I would add is something that Charlie said which reminds me of -- I think I slightly misspoke. He was advocating for a gas tax, and one of the two commissions did actually advocate for an increase in the gas tax. Now, again, it's a funny world where gas tax, I guess, if we take that commission as evidence, is more politically feasible than a carbon tax. I mean, you can see what I face whenever I write on climate policy. I stubbornly stick to what I think I'm convinced are the most optimal policy response to an important issue affecting all of us. But in your day-to-day conversations on this, and when you're evaluating legislation on this, you're always in a, you know, how much do I hold my nose? Because, you know, that's life. That's why I'm not complaining about that. And for some of these, I hold my nose a lot more than others.

Gas taxes would not be as effective, from a climate point of view, as a carbon tax, both because it's not based on carbon emissions and it's also directed toward the transportation sector only, but it certainly, I wouldn't have to hold my nose nearly as much. It's certainly like a -- is a good way to mimic it, at least partially. And it seems like there's some hint that it might be, you know, at least on the political landscape.

MR. SAMUELSOHN: You wrote about trade-offs, I guess. And it brought to mind the Bush Clear Skies debate that I remembering covering quite a bit in the early 2000s, which was a trade-off proposal. It didn't have carbon, but there are a number of changes to the Clean Air Act in that bill for nitrogen oxides, sulfur dioxide, and mercury. Here we are 10 years later. A lot of the House bills that have been passed through the House have tried to stop the EPA from regulating all of these pieces. We're not the ones negotiating, but how much do you think there could be some negotiating going on come next year as these EPA regs continue to move forward, as the courts continue to decide? And, you know, the fiscal policy is out there, too.

MR. GAYER: Yes. I thought Clear Skies was, actually, pretty good in the sense that it did ramp down sulfur dioxide and nitrogen oxide. There was a kind of active academic debate, or policy wonkus debate, on mercury at the time, whether or not cap and trade is suitable. I actually think, by and large, we've been pretty good, but I can understand that cap and trade is not as suitable for mercury as it is for a global pollutant such as greenhouse gases, and that actually was a test case of where we saw. There was, at the time, a debate about 3P versus 4P. Three pollutants versus added carbon and then a mercury cap and trade. No cap and trade. And we wound up, you know, in the courts and years later and if anything, we've now subsequently undermined our SO^2 market, largely based on a court decision. But you don't have as much trading. It's now almost state specific. So, cap and trade doesn't work if you can't trade.

Now we've limited the trading sense. But I do think, you know, I didn't flesh this out, probably as much as I should in the paper, but I think your question does bring up one of the things I alluded to, which is there might be some scope for comprise there. You know, it's such a hard time now, and I think we've all -- none of us have, I hope, including me, been talking as if we're overly optimistic, because we're not. But on compromising, you know, it's not that the EPA has now been a political issue, especially during the Republican campaign, part of that critique is on their movements on greenhouse gasses. And so, if you were to think of a carbon tax or some sort of grand -- you know, a bigger climate policy, you would think you could sacrifice some of that and have a role for compromise I alluded to even more in the paper.

Kind of getting back to this 4P model that I talked about before, which is there are some trade-offs between going green. You know, if you were to regulate carbon through some price mechanism that is economy-wide, you would get reductions in other pollutants obviating the need for some of the more traditional regulations. That's a hard thing to sell, and it's a harder thing even to estimate from. That would be kind of within EPA's realms of estimating where these conventional pollutants -- how they would be effected. But I think they are, at least, in the spirit of brainstorming, there's some scope for compromise there.

MR. SAMUELSOHN: Let's go to questions from the audience. I think there are some people with microphones in the back. Let's go here in the purple shirt about five rows back. Please stand up, identify yourself, and please ask a question.

MR. BEARY: I'm Brian Beary, Washington correspondent for *Europolitics*. My question is about regional cap and trade initiatives. Particularly, if you look last week, the Senate had a hearing on the EU's emission trading scheme applying to global aviation. And it's interesting because the EU is continuing along its path, rolling out its cap and trade. The U.S. has decided it's not taking that path. And gradually, you know, the tension starts to grow because it's a global economy. And I'm just wondering how you would see that playing out between a President Obama and a President Romney because they have a very specific issue at the moment with the aviation. I believe, at the moment, the Obama line is that they're telling the EU to stop doing it, but they're also telling Congress not to pass a law that tells the airlines to stop doing it. So, they're sort of speaking on both sides, but I'm wondering if you see any difference between the Obama and a Romney administration on that issue?

MR. SAMUELSOHN: Sounds like a Katherine question, right?

MS. SIERRA: We're doing question by question?

MR. SAMUELSOHN: Yes.

MS. SIERRA: Okay. Very good. I would think that under the Romney administration it would be more aggressively pushing against things like the unilateral activities like the aviation tax. Let's not forget, it's not just the United States that is annoyed with Europe. It's also China, India, and the like. So, it's not been a popular move, but an understandable move. I think, if I was from Europe, that says we have an obligation under our own policies to reduce emissions, this is a very large part of our emissions. The world's not acting. We're going to act frontally. So, I think it's quite understandable.

I think what we want to see is to try to avoid that same dynamic happening in the maritime sector because this is the second type of kind of global industry that could be subject to some type of tax, some kind of cap and trade coverage. And it certainly would not be the best thing if we had a plurilateral piece because then it just ramps up the pushback from certainly, I think, the Romney administration, but even pressure from Obama and others globally.

MR. SAMUELSOHN: Are you surprised that the Obama administration has reacted the way they have to this move from the European Union or is it --

MS. SIERRA: No, I think it's understandable. I think it's part of the -- again, since the U.S. doesn't have sort of the standing to push. On the one hand, the Obama administration wants to see progress on climate change. It hasn't, maybe, been as aggressive internationally as some would like, but it's quite difficult for them to be able to push back on Europe.

MR. SAMUELSOHN: Ted, do you want to --

MR. GAYER: I'm going to beat my one dead horse a little bit. Just something you mentioned, and this is a little bit wonkish on the EU emissions trading. Years ago, when I would advocate for carbon tax over cap and trade, one of my little talking points is if you have a cap and trade, you don't know what the price is going to be going in years forward. And so, at the time I would argue, you know, it could be that the price is actually going to wind up being a lot higher than anticipated and, you know, politicians won't stand for that. They're going to undermine the cap, and so, might as well start with the tax.

What's striking to me about what's going on in the EU is now the price is too low, and so they're complaining. In my world, if you complain that the prices of a cap and trade is too high, and if you complain that the price is too low when it's too low, that, to me, is an ipso facto argument for carbon tax because that's one way to get the price.

Now, there's all sorts of complaints you can make about carbon tax, also. But I was just kind of startled that the critique that's going on now -- I always thought the critique would be these prices are way too high. You've go to do something. And now, you get the flipside of it, so it's just one point.

MR. SAMUELSOHN: You bring up a question that I forgot to ask you, but this is almost one of the first questions whenever a carbon tax gets proposed is where is the environment --

MR. GAYER: The price.

MR. SAMUELSOHN: No, what's the environmental certainty here that you're actually going to reduce emissions? That the price is going to be, you know, too low? And without an actual cap on emissions, the piece to the carbon --

MR. GAYER: Yes. So, that's the flipside. The good thing, when I thought about a cap and trade, is you get the certainty on the cap. And my argument against it is that you really don't get the certainty on the cap because as prices fluctuate, people react and politicians react. And so, we in the U.S. have some history of cap and trade and not really of emissions fees, so this is conjecture more than empirically verified within the U.S. My conjecture was from a consumer point of view, and more importantly from an investor point of view, having certainty over the price will give you more long-term credibility.

And you're right. It might kind of lead you -- kind of emissions higher or lower. In this case, in Europe, having a tax would have been better because, you know, now that there's a shock to demand, the tax would have given you more reductions. So, it could be on either side, but you do give up some certainty on the emissions level.

MR. SAMUELSOHN: Okay. Bring back memories of the safety valve debates that --

MR. GAYER: I remember those well.

MR. SAMUELSOHN: Way too many nights in 2009. Let's go in the back row. Alden, the gentlemen with the -- there you go.

MR. MEYER: Hi. Alden Meyer, Union of Concerned Scientists. Thanks for this. Two issues that haven't been mentioned. One is fossil fuel subsidies.

Three years ago at the G-20 Summit in Pittsburgh, President Obama proposed phasing down fossil fuel subsidies. World leaders agreed to that. IA latest estimates: over $600 billion a year for fossil fuel production or consumption. First rule of holes: when you find yourself in a hole, stop digging. And, of course, the President proposed that two or three years here. No response from the Congress. It's been dead on arrival. Question is, do you think in the context of corporate tax reform, post-election fiscal reform, that fossil fuel subsidies could be on the table and those loopholes could be closed?

Second issue is the clean energy standard that was proposed by the President a couple years ago in the State of the Union. Senator Bingaman recently introduced a bill on that. Again, conventional wisdom: dead on arrival because it's a mandate. But do you think there could be some consensus around sort of an all-of-the-above clean energy standard in the next administration in Congress?

MR. SAMUELSOHN: Thanks. Let's get Charlie. Do you want to touch the clean energy standard?

MR. EBINGER: Alden, as you well know, the subject of fossil fuel subsidies is much more complicated than it would appear on the surface, and I'm not going to argue that some of them couldn't be eliminated, and should be eliminated. But when you really look at who gets the fossil fuel subsidies, to a considerable degree, it's not the Exxons and the Shells and so forth. It's the independents. And the reason that some of them exist, things like accelerated depreciation, tangible drilling costs, is that the independents don't have the cash flow to continue to drill wells out ad infinitum. They need to get a quick return on their well, so they then have the cash to go forth and drill the next one. And independents find 80 percent-plus of all the oil and gas in the United States each year. Again, not the big companies, who actually have a terrible record of finding oil and gas in the lower 48. So, I'm just saying before you throw the baby out with the bath water, it's very complicated.

There are also some issues relating how competitive our industry will be overseas if Angola announces a new area open for exploration. Some of those tax credits allow our companies to be more aggressive in bidding for that acreage than they would be otherwise because of favored tax treatment that their competitors get in their home country. So, I'm just saying it's not a simple issue. I know you know it's not a simple issue, but one has to be careful that if you tinker with it, don't have unintended consequences because drilling would fall off in the United States. That I have no doubt about.

MR. SAMUELSOHN: Let's stick to the fossil fuel subsidies. Ted, you want to touch how that could potentially work its way together with carbon tax or not connected to carbon tax? I mean, obviously, we've had several Senate votes here on the oil subsidies that have not gone so well for the President.

MR. GAYER: Well, I think there's a broader question here and Charlie can speak to this, too. There's a broader separate debate on just the energy policy at large. I think if you look through our energy policy as it stands, we've got a history of kind of competing goals. Sometimes we want to promote domestic production. Sometimes we want to help the environment. Sometimes we want to raise revenue. And those three objectives, not always, but frequently, work at competing ends. So you'll, you know, subsidize something that's kind of, you know -- you'll subsidize clean fuel and you'll subsidize dirty fuel, you know. So, there's definitely room for a re-think. And I think there's somewhat -- I don't know if I want to say bipartisan support, but you think there would be some efforts on that.

The other question on clean energy standard I just want to touch on quickly because, you know, this gets back to my other point of kind of how much do I hold out to what I think is really effective versus sacrifice that, you know -- versus thinking that the perfect is the enemy of the good. I think if you have a carbon tax or a cap and trade program, a clean energy standard is largely redundant, and it's not really necessary. It's not worth the cost. And my fear is that if you have a clear energy standard, then everybody shakes hands and says, look, we did climate policy. And then you won't get what I think is a better policy down the line. Now, you have to talk about discount rates, whatever you want. Whether or not, that doesn't mean that you don't endorse it. It just means that that kind of opportunity causes something that's always in the -- it's kind of internal. The political opportunity (inaudible) is in my internal calculus on that.

MR. SAMUELSOHN: It's the opposite of what Waxman and Markey decided to do which is throw everything --

MR. GAYER: Throw everything in there, exactly, which I thought was too much.

MR. SAMUELSOHN: It's definitely -- and then you think about -- I think Rahm Emanuel was quoted in another Ryan Lizza story saying that he was pushing the President to just take the clean energy standard and not do the cap and trade there when the Senate debate was at is peak.

MR. GAYER: Yes, and there was a few months there and one of my colleagues was in the crowd and we were e-mailing back and forth. And my prediction at the time was be careful. This is what's going to happen is we're going to pull out this one part and, you know, the President's going to say he did climate policy, and that's the end of the issue, at least for, you know, a number of years. In some sense, that was a bigger concern than the bill not passing, for me.

MR. EBINGER: Darren, before you leave the clean energy standard, I just think it's also important, you know, the whole debate that still, I think to some extent, rages in the environmental community of should natural gas and nuclear power be included in a clean energy standard. I may be wrong and stand to be corrected, but it seems to me, in some states who have clean energy standards, they are allowed to compete, but in others they are not, which creates a fragmentation of policy.

MR. SAMUELSOHN: It probably all comes down to 60 votes. Let me ask you, Katherine, on the clean energy standard, and this seems to be where the President is right now, and that's about as far as he's willing as go. And let's say he's re-elected, and that's as far as he's willing to go. How would the international community react if the United States comes to the table, and that's the best they've got is a clean energy standard?

MS. SIERRA: I think it depends on what the standard is. So, what people are looking at is not do they put a tax, or do they put a cap and trade system? It's whether or not the pledges are going to lead to significant reductions in emissions. So, if the standards are such, along with other policy tools, as imperfect as they may be -- and I agree with Ted here, that what we've got is a sort of a jumble of expensive and not very well sequenced policies. But let's say that it was an aggressive standard, along with the other pieces. That would be taken. And indeed, many other countries outside of Europe and Australia are coming to the table with those kinds of policy frameworks. And so, you know, colleagues added up, they do the modeling, they say what does this actually mean? And then they can be monitored against that. So, I guess it depends on what the standard would be.

MR. GAYER: I think it's actually hard to get significant reductions from a clean energy standard. I mean, you know, I agree with Kathy's point completely. Getting a little technical in there, you have figure out what each alternative fuel counts for as a substitute. And you get these kind of, you know -- if you're trying to keep it kind of energy-equivalent, you actually could have a clean energy standard that actually increases or leaves them flat, depending on how those substitutions are. So, it's a tricky thing, I mean, if you're trying to figure out how to do it. And you could still have a cost -- I don't mean cost, but you could still have something that looks big, but as you model it, it might be very disappointing.

MR. SAMUELSOHN: We're in a world of what could be, so let me just kind of stick with this for a second. Would you want, if there was a clean energy standard, the EPA regulations for new and existing coal plants on the climate front to disappear? Would it be too clunky to have the overlap of the EPA regs and, obviously, they're going to be petitioned left and right to regulate other stationary sources and other sources, as well, for greenhouse gases. Should those go away, or do you think you can overlap those?

MR. GAYER: I think they should. Again, now on a policy point of view, I think they should. From a politics point of view, that is a stick that's out there for negotiation. And that was kind of the spirit of what I was writing. Is what could you do in a grand compromise, so everyone's kind of reluctant to use their carrots or give up their sticks. But from a policy point of view, I think they would be largely redundant depending on the specific ones you're looking at, and potentially costly.

MR. SAMUELSOHN: Let's go to the audience. Over here, about five rows up. Woman on the right here.

MS. SHERIDAN: Hi. Stephanie Sheridan with IPAI. I'm just wondering if you guys could comment about the legislation that has passed in regards to the 2008 legislation that put in place some standards for government buying and other types of things for renewables and biofuels. And how that might be affecting the private sector? And maybe that could be used as a tool for increasing the, I would say, capacity for positive legislation.

MR. SAMUELSOHN: 2008. You mean, are you referring to a 2007 energy law or the one that President Bush signed or --

MS. SHERIDAN: The -- what was done under Pelosi that put in place standards and targets for renewables and biofuels. Yes.

MR. SAMUELSOHN: Gotcha.

MR. EBINGER: I'm opposed to standards like that because I think it -- because then you'll get equated, perhaps, with Buy America Act type products and I think there's a real danger that you distort the marketplace when you have a purchaser as big as the U.S. Government. But if you're going to have them -- I mean, if the policy decision is made to promote them, then I think the evidence is incontrovertible that they work. I mean, you look at what DOD has done to advance many renewable energy projects. It's been quite remarkable. So, if that's the policy you want, I think it makes sense to have them. But I don't personally believe it's good policy.

MR. SAMUELSOHN: Politically, the --

MR. EBINGER: Politically, it's good policy, I think. Anything that buys America, you know. Now, it's not good policy if you get somebody arguing that, you know, we're subsidizing somebody. And I'm sure there will be some right wing Republicans that would object to that, but it is good policy, usually, to encourage the purchase of American goods and services. But I think it risks distorting markets.

MR. SAMUELSOHN: During the Republican primary campaign, you had the candidates all running in Iowa and not saying the things that past presidential candidates were saying in Iowa about ethanol and renewables.

MR. EBINGER: Can I make a comment on that?

MR. SAMUELSOHN: Please.

MR. EBINGER: Because it's the one study I've ever done that I'm embarrassed by. I think I did the first study on ethanol for -- well, there are probably some others. (Laughter) This was a study done for the Renewable Fuels Association back in 1983, and under the argument of the infant industry, I, you know, strongly supported ethanol subsidies. I think, fortunately, we're now getting rid of the ethanol subsidies, but I think ethanol has been the greatest boondoggle paid by the American taxpayers for simply a few large agricultural interests. And, you know, the thing I worried about, we still have a mandate even with the tax credits phased out. We still have a huge mandate for ethanol, which is going to lead to a surge in ethanol production. And I think a lot of people have not, under biofuels guidelines, that I don't think many people have realized and I would be very, very surprised, despite the recent decline in corn prices, I would be very, very surprised if down the road you don't see a surge in corn prices because we're not going to develop enough cellulosic ethanol to meet the standard. It's still going to come, I believe, at least in the United States, is going to come heavily from corn.

MR. SAMUELSOHN: Being from *POLITICO*, is there a renewable person in the house that might want to stand up and ask a question? (Laughter) Fair enough. Let's go to the fourth row here, gentleman with the glasses.

MR. MC KNIGHT: Ron McKnight; retired DOE. The issue of exporting natural gas in the form of liquefied natural gas, decisions to be made. There isn't one of the papers. There's another fossil fuel that we have lots of that there are discussions being made about exporting as well, and that's Western coal, to the western end of the

United States and probably going across the pond to China. Seems to me this has two things to be considered. First, impacts on greenhouse gas emissions and also the economics of exporting it, since it seems that the use of coal in our power plants is probably going to be decreasing.

MR. EBINGER: Well, my colleagues and I, just in the last month or so, came out with a study on the gas export issue. And, or, some of the critical considerations there are, if we export gas, some of the manufacturing interests that are coming back to the United States because of the availability of cheap gas, argue that exports might raise the price back up and raise their feedstock costs. So, having gone from a very strong position of almost totally opposed to exports, some of those group, like the American Chemistry Council and DuPont and Dow have now said publicly that they can see that a limited amount of exports would not be injurious to their industries.

We, personally, come out in our report that we think that all the existing -- and this was as of the end of March; I think there were nine -- all the existing or proposed projects at that time -- more have come forward since -- that there's enough gas to meet all of the domestic requirements in manufacturing to replace all the coal that we could replace, particularly the aged coal plants, and not have a dramatic increase on consumer prices in the United States. That study is on our website if you want to see it in more detail.

The issue of coal is interesting because I know a lot of people in the environmental community take great solace that we don't build coal plants anymore. But I say whenever I hear that -- they say we've beaten back the coal industry. I say have you looked at the export statistics recently? Coal exports are near an all-time high, so essentially we're exporting our pollution in the form of coal. Now, I personally, not to beat a dead horse to death, but I personally believe that this is an even stronger argument to really put more R&D into carbon capture and sequestration which Kathy said she knew I'd get to at some point.

MS. SIERRA: I agree with --

MR. EBINGER: And that's because in the world market, regardless of what the United States does, China, if you look at studies by the international energy agency and others, although China's percentage use of coal is going to fall, on a volumetric basis, it's not going to fall. It's going to continue to grow for the next 20 or 30 years. The same is true in India.

We also, when we talk about the big coal polluters stopping using coal, we forget how important coal is in these countries for employment generation. In India, if you take on the coal lobby, which tends to be located in states that are anyway at political odds with the central government, congress, party, coalition, you get killed at the polls. And so, to me, the answer is for the next administration to put a lot more emphasis on an international effort to push carbon capture and sequestration can be proven technically and economically to be feasible. In that context, I think the continued exportation of U.S. coal could be justified.

I think the biggest problem that Western coal has is, and we were told this not long ago by one of the heads of the major railroad companies, is not that the coal isn't easy to get out of the ground and economic to get out of the ground, but it's logistics systems. There aren't enough coal railroad cars currently on the market to move the volume of coal that's actually available.

And the other major problem, which is even a bigger problem, is port capacity. And several new coal ports which have been proposed for the Northwestern states are adamantly being opposed by not only the environmental community but by a lot of politicians from those states.

So, it's a complicated issue, but coal is an incredibly valuable resource. It's the resource we still have the greatest abundance of, of any energy resource in the country. And to me, to simply write it off is not probably, wise, but in any case, the world's not going to write it off. So, we're not going to solve the CO^2 problem from coal regardless of what we do in the United States.

MS. SIERRA: Maybe I just could add to that from the point of view of the developing countries, whether it's India, countries in Africa, and the like, the reality is coal is going to be in their energy mix. And the reality is that they actually cannot afford at today's technologies and the cost of technologies to put in place the most sophisticated coal technologies. Maybe India can. China can. Brazil can. But certainly the countries in Africa and other countries cannot, and they don't have the technologies online yet to solve the carbon capture and sequestration problem.

Several years ago, there was a lot of motion towards this. There was a new institute put in Australia. The Norwegians have been investing quite a bit in R&D in this and trying to build coalitions, but it seems to me that that's actually died down a little bit in the last couple years. Whether it's because of pressure from environmentalists, whether it's just because of pure fiscal problems and recession post-2008 in many of the advanced countries, I don't know. But I would agree with Charlie that is a very important frontier, and if we're kind of thinking through the next policy of this country, but also

Europe, Australia, China, and Brazil, it's really coming with a big bang R&D program for this.

MR. SAMUELSOHN: Are there any incentives, though, financially? I mean is there any reason why a Chinese or an Indian coal-fired power plant would go ahead and spend the money for the CCS technology absent a carbon price or --

MS. SIERRA: What you're seeing, again, in China, there are investments right now in some of these advanced type of plants trying to get ready for this. I mean, they do see it, I think, as a potential market going forward. You have the best of both worlds. You've got the really bad type of coal technology being implemented, but you also have some of the more advanced. The problem with this is that it is complex to put in place these new technologies. Processed based, it's not some new mechanism that has to be involved. It's process based. It is expensive, and unless you can figure out a way to re-use that carbon, it's really just an additional cost to this.

MR. EBINGER: And you have major potential -- it could be the full employment act for lawyers for the next hundred years because, you know, the ongoing debate after you sequester the CO^2, can you be assured it won't leak? And so, a lot of places -- some people believe, particularly in the United States with our litigious society -- a lot of people believe that that will be the greatest obstacle even if we decide to go that way, finding a way to keep those liability concerns down.

MS. SIERRA: And again, in India, they actually don't -- at least a couple years ago, I haven't looked at the numbers for at least a year -- they were really -- there were reservoirs. China, yes. But India, not so easy.

MR. SAMUELSOHN: Shameless plug. I think I wrote 2,500 words on the leak question back in 2007 and when I was working at *Greenwire;* Google it. You can find it, probably, still. I remember -- it would have been in the *New York Times*. I can't remember. But, you know me; I'll send it to you. But I remember the geologist assuring me other -- I mean, no concerns of leaks. I mean, that was just -- a lot has happened since then. I just think of Fukushima and what happened there. But, I mean, where are we on the state of CO^2 leaking from underground? Obviously, we don't have, you know, a full-scale CO^2 plant, our full-scale CO^2 carbon capture plant envisioned of the future gen variety from the Bush years. I mean, is this something that you think will be guaranteed if and when we get to that point?

MR. EBINGER: Not without a lot more R&D dollars being spent. And those will, of course, compete against other things that are more politically popular.

MR. SAMUELSOHN: Right. Let me ask you, Senator Obama comes from a coal state, and he has been accused of pushing a war on coal here in the presidential election. Has he really gone after coal or has he been a pro-coal President?

MR. EBINGER: I don't think he's been a pro-coal President, although more has been done for coal than I think generally meets the eye. The same was true, you know, when the President, if you go back to his earliest days running for office against Secretary Clinton, he was very anti-nuclear. And it was -- very anti-nuclear -- and it was only really after he got beaten up in South Carolina and the Illinois primary that it started becoming the fuel of last resort, I believe, was the next phrase. And then after he got beaten up in a couple other nuclear states, it became part of the fuel mix. So, it's very difficult to know where the administration stands, I think, on either coal or nuclear. And I think that's why you see both those industries generally antagonistic to him.

MR. SAMUELSOHN: You read about the waste WIPP project in New Mexico as a possible long-term nuclear waste solution. I've been down to Carlsbad for a campaign story a couple -- the 2010 cycle, on the local House race and the governor's race. But I remember going into the Carlsbad newspaper to interview the local editor, and right up on her wall was a front-page article with a picture of the first commercial of nuclear waste. I'm sorry, this was Defense waste coming into town to be buried in this underground site, and the local community turned out for a parade to celebrate this nuclear waste coming through town. Quite a contrast from Yucca Mountain in Nevada. Let me ask, why haven't we moved to the WIPP site at this point in New Mexico?

MR. EBINGER: I don't know. Because the WIPP site, for those of you that don't know, is the salt deposit that's probably the most geologically stable place in the world. The geologists will say -- I mean, we were worried about Yucca Mountain being 10,000 years. The geologists, I think, say that the WIPP facility has been geologically stable for 300,000 years.

But the problem with it, and even with some people in the nuclear industry, as a waste repository is that once you, because of the nature of the salt, once you put the waste in there, it kind of coalesces. And for those people that think there's a future for spent uranium from a conventional fuel cycle or plutonium from it, you can never retrieve it once you put it in there. Whereas Yucca Mountain, you could have theoretically retrieved it. And so, you even get people in the nuclear industry who aren't big supporters of WIPP.

You also have the problem that former Governor Richardson and a whole slew of politicians are just adamantly opposed, although there are some people running for the Congress from the Republican Party who are champions of WIPP. So, politically, it's very difficult. But the facility is large enough to take all the conventional nuclear waste that every one of our 104 reactors, and actually, to take additional waste, probably, from some other countries. You can imagine the politics of importing nuclear waste. (Laughter) That would be a sure win. The problem right now is it's limited by statute to both military waste and medical waste and a few other select types of waste, and so, you would have to change the law. The blue ribbon commission looked at it as one option, said some very favorable things about it, but stopped short of actually endorsing its use.

MR. SAMUELSOHN: Let's go back to the audience. Over here on the left, about -- this gentleman right here who's got his hand up.

LORD FREEBAY: Thanks. Lord Freebay, climate and energy attaché with the British Embassy. I wanted to come back to Ted's suggestion about carbon tax. Sweden was, together with Norway, the first countries to introduce carbon tax in '92. And I wanted to ask to what extent does the carbon tax that was introduced in British Columbia get any traction here? I mean, it was introduced at low level. It's revenue neutral, that they've lowered corporate tax and employment tax. And it's now up to 30 Canadian dollars per ton. Does that kind of revenue neutral has any play? And if you would do a grander tax reform?

Second question is to what extent would you say that the EPA MATS for coal plants, is it that, or is it a cheap gas that is now closing down up to 100 coal plants, according to Sierra Club? How big an impact has the EPA regs had?

MR. GAYER: Thanks. I'll take the first. I think it was directed to me.

So, you know, maybe I shouldn't be so pessimistic after all. I mean, that is a good example. The interesting things there is you've got a use for corporate tax reduction in a revenue neutral way. Politics of that is interesting within this country. But the broader question of is it having any political salience here, and is it something that people are glomming onto outside of me, you, and maybe, you know, 150 other people, no disrespect to either of us, but not the right 150 other people -- (Laughter) -- no, I don't think it is. But, you know, I haven't looked at it extremely closely, but since I've read about it, it's almost textbook. And it's, you know, it starts at a low level. It ramps up. It's revenue neutral. It's using the revenues efficiently, and it seems, if I read it correctly, to be popular. Or at least not unpopular, which certainly would be an improvement. But I have not seen it in the broader debate in any way used as an example. And maybe that says something about perceptions of Canada here or something, but it's just not as salient as I'd like it to be.

And I don't remember the second half which is --

MR. SAMUELSOHN: That was the mercury MATS GPA regulations and are those the reason for the coal plant shut downs? Or is it the natural gas price?

MR. GAYER: I think it would be the latter just because of the economics of it. It's more binding at this point. The mercury MATS rules, I think, were not the best way to reduce mercury, and there's some uncertainty about what the costs would be. But I don't think you can look at problems in the coal industry now and directly tie it to there nearly as much as you can to these other contributors.

MR. SAMUELSOHN: Charlie, you might disagree?

MR. EBINGER: I agree. I agree.

MR. SAMUELSOHN: We have time for two more questions. Let's go right here on the left. The lady in the white with her hand raised.

MS. SAETHER: Mari Archer Saether, Royal Norwegian Embassy, environment counselor, concerning the carbon capture and sequestration issue. Of course, we, in Norway, also -- well, we see as absolutely necessary because fossil fuels are going to be with us. And I just got to say, you know, because you had a little exchange of views there. But, of course, we have a 20-year experience with sequestration, which we have monitored very, very closely, a million tons every year, you know, for 20 years, offshore. So, the uncertainty and the leakage issue for CCS isn't very different from the issues that you talk about when you talk about doing fracking or, you know, doing various things. You have to get the -- you know, you have to consider the geological conditions. So, in a way, pointing to CCS as being something that is risky, and then, at the same time, you know, saying that unconditional gas can be explored if you just do it right, you know, those are the same kind of issues, really. You have to do it right.

And also then, I just wanted to mention that certainly it seems to not be moving so well, and it is crazy expensive the way it's looking right now, but we have recently opened a big test plant for CCS with international participation from South Africa and all this, and so, everyone hasn't quite given up on it. And I wanted the question that at the end is that I think I read that, actually, Canada is still moving ahead with some CCS work, which would be absolutely necessary considering their sector. And I, to make it into a question, it would actually be that I'm not quite sure what is going ahead in the U.S. right now, but there is actually movement elsewhere, and if you have any comments to practical things there.

MR. EBINGER: Do you want --

MS. SIERRA: Well, I would agree with Mari that there -- I didn't want to leave the impression there was nothing going on. There are certainly are the Norwegian examples, Australian and South Africa. And the point I was trying to make is that we actually, collectively, globally, have to put much more effort into this. And the U.S. leadership is needed, and I think it's fair to say Charlie knows much more about this than I do, that this could be a big opportunity for us in terms of business, in terms of innovation. So, I think the call is for more R&D and more public private partnerships in this area, joining with Norway and others. But on the risky piece, you follow it more closely.

MR. EBINGER: I think, from everything I have seen among the best scientific literature, I think it can be safe. I think it's more perception that it isn't. And the difference I would make with shale gas is, yes, if shale gas seriously contaminated a water reservoir, that would be a serious problem. But a major CO^2 release, you're talking about people dying now, not 10 years from now from contaminated water, but now. So, I do think it has a different resonance to it.

A lot of people forget that out in North Dakota, you know, we have the Great Plains Coal Gasification Project that was one of the few projects that survived the Synfuels Corporation back in the '80s. Now, that's a little different but they have been re-injecting CO^2 from the coal gasification for enhanced oil recovery for years without any apparent problem.

So, I think Kathy and I both agree. People are going to use coal, so the best thing that can happen is for the world community to come together, and as you're already doing in Norway, and prove that it can be done both technically and commercially feasibly.

MR. SAMUELSOHN: Let's do one final question. Back here. David.

MR. HUNTER: David Hunter from IETA. And we spend a lot of time trying to point out the benefits of cap and trade and convince the public that there's a benefit to cap and trade. And one of the problems we continually ran into is it's a very long-term -- not concrete, in many ways invisible benefit, but it's a very short-term, very concrete cost. And that problem, the problem in trying to convince the public that this is really to their benefit was one of a number of problems that made it quite difficult for cap and trade to move forward. And it strikes me that that problem is even bigger for a gas tax because gas and the price of gas is even more visible. You know, it's plastered on the street signs at every corner and people have to pay that every week or so. One approach which has not been discussed, and I'd like to get your comments on, is a dividend approach. It could be either cap and dividend, or I suppose you could have a tax and dividend, but just your thoughts on whether that might be a way of showing the public that there is a concrete benefit for them in the near term.

MR. SAMUELSOHN: Cap and dividend was the President's idea coming into his term and was in his first budget there.

MR. HUNTER: With the Making Work Pay Credit, I think was the form of that. And there was some other stuff, as well.

MR. GAYER: So, first on the short term versus long term, I don't think that's a difficulty communicating on cap and trade. I think that's the difficulty communicating on climate policy, where pretty much all climate policy is going to incur costs now for benefits that are largely in the future. And that's well and sound, but it's a hard thing to sell. The kind of broader point there, and this is kind of increasing even in the economics literature -- empirically, I find it interesting, and sometimes from a policy point of view I have reservations -- but this whole question of salience and, you know, we have kind of a standard economics argument and now economists are starting to realize, like, hey, like, a tax isn't a tax isn't a tax. Depends how salient it is. You bring up a gas tax, it's like when you're standing at your pump and you're watching it go and you see it going, that's very different than a tax that is not on the sticker at the store that maybe gets computed at the cash register. You know, from an economic point of view, it shouldn't make a difference whether or not the taxes on the sticker on the item you buy are added at the register, but it certainly does in people's behavior and it certainly does in their response to different policies.

My fear, and this gets back to my second or third or fourth best policy, is that leads us to less salient things. And very frequently these less salient things can get by, but I don't think they're nearly as effective. One way, I think, to kind of compromise on that is as you said, a cap and dividend approach. And there was a proposal coming out of Brookings before I was here by, I think, Gib Metcalf. He didn't call it cap and dividend at the time, but it was essentially a lump sum, you know. I think it was a lump sum for low income, I think. Maybe there was some graduation in there. It wasn't much. But anyway -- and there was a bill proposed. Was it --?

MR. EBINGER: Cantwell.

MR. GAYER: Cantwell. That's right. There was a bill proposed on that.

It wouldn't be my optimal bill. It's not the most efficient way to use the revenues, but I think that's a great compromise in some sense, and it gives you a tangible benefit to sell it immediately.

So, yes, I think, you know, I wouldn't have to hold my nose much to move in that direction. And I think it gets at exactly the issue that you're talking about in giving somebody -- I mean, the economics of it is -- the problem with pollution is -- I mean, I kind of go back to the little bit of first principles. Like, there's a property right out there. If I'm using the air and causing harm to others, I am violating a property right. And a cap and dividend is basically showing people, hey, this cost matters, and here's a tangible benefit you get out of kind of incorporating that into the market system, and here's a dollar on the table. So, yes, I think that's a, you know, if you have to re-do it -- the debate, that's probably, I think, in some sense, a more feasible strategy.

MR. SAMUELSOHN: It's a threshold question, though, as we saw with the way the whole process worked. I mean, the President put his proposal forward. John McCain, I remember interviewing him in the hallway. He jumped all over it. That was kind of the way he was. He had an easy out. He was, obviously, running for re-election himself and had to deal with his own problems. But Waxman and Markey then went with cap and trade and distribution of the allowances. I mean, can you ever envision going this route and not going down the route of having to deal with the power companies and their wanting their historical credits and then the trade (inaudible) industries. I mean, it just seems it's a domino that inevitably happens with this.

MR. GAYER: Yes, and it's happened in previous cap and trade bills as well. Even to the sense that we have auctions in some bills, we then end up giving away auction revenue, so it's essentially identical. Yes, it's essentially identical.

Yes, I don't know if I would say it's inevitable. It's likely, which is why I would say it's a little less likely with the carbon tax than cap and trade, although that certainly doesn't eliminate the risk. And it's only feasible, I think, in the spirit of the broader tax reform because then you are dealing with trade-offs, and you are dealing with kind of winners and losers. And you've got lots of different sources of revenues that you're trying to make up, and so that gives you, in some sense, disentangling from climate policy and putting it into fiscal policy. That's one of the reasons to do that, I think.

MR. SAMUELSOHN: And constituencies on the Hill that are needed to pass a bill.

We're just going to wrap it up. Katherine, any closing thoughts on sort of the whole conversation? We've covered just about everything here today.

MS. SIERRA: I think we've covered everything.

MR. SAMUELSOHN: All of the above conversations.

MS. SIERRA: All of the above. Ted said he didn't mind me using --

MR. GAYER: Kool-Aid.

MS. SIERRA: -- Kool-Aid. I actually think it is important that we continue to kind of press on this issue of pricing carbon. You know, I think ultimately we can, and we will probably see over the next couple of years lots of these initiatives and coalitions and things happening at the sector level. And those are good, but ultimately we're going to have to see a price on carbon. And there's a couple ways to get there, but that's, to me, the bottom line.

MR. SAMUELSOHN: Charles?

MR. EBINGER: I would just say we haven't talked about long term. I continue to believe that nuclear power has to be part of the global energy mix. It's probably not going to happen with the expense of these large reactors, but if we really push to accelerate the development of smaller scale modular reactors, then that can go a long way into helping with the carbon problem.

MR. SAMUELSOHN: And Ted? Your paper, you get the final word.

MR. GAYER: I thought I was -- I agree. (Laughter) That's all I got.

MR. SAMUELSOHN: Very good. Thank you, everybody, for coming today. Thank you, panelists. Great discussion. (Applause) Thanks, Kathy. Thanks, Ted. Thanks, Charlie.

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I, Carleton J. Anderson, III do hereby certify that the forgoing electronic file when originally transmitted was reduced to text at my direction; that said transcript is a true record of the proceedings therein referenced; that I am neither counsel for, related to, nor employed by any of the parties to the action in which these proceedings were taken; and, furthermore, that I am neither a relative or employee of any attorney or counsel employed by the parties hereto, nor financially or otherwise interested in the outcome of this action.

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