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Discussion

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DISCUSSION FOLLOWING THE REMARKS OF MR.
STEPHENSON AND DR. PAGE

QUESTION, MR. ADLER: Thank you both for your presentations. We now have about 30 minutes or so for questions and answers from the audience. I am going to take the moderator's prerogative and ask the first question.

Dale, we have heard the fact that some states are moving ahead with programs of their own, whether they are voluntary programs, reporting programs, or in some cases, even regulatory programs. Now, one of the odd features of American environmental law is that while states are often encouraged to go their own way or develop their own policies, in many cases, efforts to do so are pre-empted by federal environmental legislation. I was wondering if you had any comments on how aggressive states can be in regulating greenhouse gas emissions without potentially running afoul of the limits imposed by federal law?

ANSWER, MR. STEPHENSON: I think they can be fairly aggressive on the issue because Congress has not really entered the field. If you look back historically, the original emissions trading programs in the United States were created at the state level. The first program was Ventura County California, Air Management District creating the first SO₂ program.¹ I think that states will lead again. Here in Ohio, one of the broadest emissions trading programs is being developed today.² It covers not only SO₂, NO_x, and other greenhouse gases, but also particulate matter. It is the broadest program in the United States. I think you will see that kind of creativity emerge until, ultimately, you force something to "gel" at the Federal level.

QUESTION, MR. ADLER: Robert, my question for you would be on the issue of carbon "sinks," something that is certainly controversial in an area where probably the United States and Canada agree; that is, because of net forest growth in both countries, both countries are very interested in receiving carbon sequestration that results from forest growth. I am wondering, what are the prospects of global recognition of carbon sequestration and sinks? I know that, in the past, the EU was not so enthusiastic about this.³ I am wondering whether or not this position has changed and what you see in the future for carbon sinks.

¹ See, e.g., *Regional Clean Air Incentives Market*, at http://www.epa.gov/region09/cross_pr/innovations/reclaim.html (last updated May 2, 2002).

² See Richard Sandor, *How I See It*, ENVTL. FIN., May 2001, at 11.

³ See Brendan P. McGivern, Introductory Note, *Conference of the Parties to the Framework Convention on Climate Change: Kyoto Protocol*, 37 I.L.M. 22, 25 (1998).

ANSWER, DR. PAGE: Sinks is a really critical question, because it is some of the comparative advantage on climate change for North America both in terms of forest, but also in terms of agricultural soil. I was tremendously relieved about the degree to which at Bonn and at Marrakech – and I give Frank, Alan, and their colleagues enormous credit – the understanding of the science behind sinks improved in terms of the international negotiations. I believe that in terms of either Canada or the United States, the current provisions within the Bonn and Marrakech agreements are sufficient to allow us very considerable maneuver room. And I was very hesitant before they were to achieve it. So I want to say, congratulations to the negotiators in terms of doing it.

Secondly, I would say that it is in my European work, more so than my North American work, that the whole attitude toward sinks, like the attitude to emissions trading, is evolving rather positively. It is evolving not because of love or the power of our arguments, but rather out of necessity with regard to the shortages of credits that certain European countries will face. So whether it is in Russia, which has enormous potential in terms of agricultural sinks and forestry sinks, or the Ukraine or some of the other Eastern European countries in a way that did not exist three years ago, there is now an attractiveness for some Europeans to look at the whole issue of sinks in a different way.

I served on the Canadian delegation for four successive years; I saw the antagonism first hand, which was driven, partially, by the European environmental groups. What we are trying to do in Canada now is to build a national partnership on sinks that will lead with the best research in the world on verification of what sinks do. There are some areas of sinks that at least for the first commitment period are going to have very limited ability to count for credits. Trees in northern Alberta grow very slowly. We have forest fires. We have other issues of uncertainty with regard to them.

And so, have we won the battle on sinks completely? I do not think so. But there is a greater willingness now to come at this from a scientific point of view, as opposed to just an emotional point of view, when those in Europe initially saw no use for sinks for themselves.

COMMENT, MR. ADLER: We are now going to turn to questions from the audience.

QUESTION, MR. ROBBINS: I would like both speakers to comment on something you alluded to, but I would like clarified. Do you believe that emissions trading and other mechanisms after ratification will, in fact, force American companies, especially multi-national companies, to comply with what would have happened had we signed the Kyoto Protocol, and are there big sections of American commerce and industry that would not be compelled?

ANSWER, MR. STEPHENSON: To the extent that multinationals are in other countries, I think the countries where they reside will impose the restrictions across the board. They will be able to reduce emissions on their own by increasing your pollution control or your fuel burning or something. They can buy a credit from somewhere else. Or, they can go into a foreign country and put pollution control technologies or better power plants and pick the lower hanging fruit, or they can put in carbon sinks. I think, one way or the other, the companies that are operating within another country that are subject to the Kyoto Protocol are going to have to participate in meeting those objectives.

QUESTION, MR. ROBBINS: Is that going to have any effect on their operations here in the U.S.?

ANSWER, MR. STEPHENSON: Maybe to the extent they do something in the United States that they can use as a credit in those countries. I do not see that as being a real strong force for behavior in the United States.

ANSWER, DR. PAGE: If I can, I will talk from my own experience in the Pacific Northwest. We are certainly facing increased pressure from environmental groups, from municipalities, and from states to take action on climate change. This has nothing to do with Kyoto. This has to do with the fact that in those areas of the United States, at least, there is a strong belief that in absence of the U.S. joining Kyoto, a domestic or state-based program is necessary. We are actually feeling more pressure right now in the Pacific Northwest from the United States on climate change than we are feeling in some parts of Canada.

I just say that because I think that is a very important understanding. We are part of an organization in Washington of U.S. electrical utilities concerned about the unlevel playing field, if I can use that term, between some of us who are selling power into California from states that are regulating CO₂ competing with companies based in states that are not regulating CO₂. We believe that is a competitive disadvantage that creates an unlevel playing field. It is a kind of process that, with time, may see increasing lobbying in Washington in the future for federal action here.

The last point I would make in connection with this is that we are very aware, because we work with a number of U.S. companies, who for reasons of regulatory compliance or of getting project approvals through, have then adopted voluntary programs on climate change. Some of these are real, are fairly costly, and are talking about reductions in emissions in the range of millions of tons per year.

ANSWER, MR. STEPHENSON: One other issue on that note that I think is important to note is that, although the United States is stepping away from the international Protocol, it is aggressively pursuing bilateral agreements. It

has entered one with Canada already⁴. The U.S. has also entered into bilateral agreements with Australia⁵ and with China,⁶ the latter of which is the largest nemesis in the Kyoto issue. I think that you will see the outgrowth of those bilateral agreements as movements towards greenhouse gas emissions reductions at the specified level.

QUESTION, MR. KING: The Protocol will come into effect after 55 countries ratify it. What is going to specifically happen on that date? Is there going to be an administrative staff, are they going to have some people who are charged with the responsibility to see that these rules are going to be enforced? I am interested in the mechanics of it.

ANSWER, DR. PAGE: If I can take a stab at it: when Kyoto comes into effect, it is focused on the year 2008. What you are looking at if, say, Russia and if Japan ratify, as I think they will in the next year and a half (Canada is so small we are not really major player here), that happened, then you would begin to see the planning for 2008. You would not see anything else other than in the year 2005, when each of the Kyoto ratification countries must report substantial progress in terms of moving towards the beginning of the process itself, which will be in 2008. To my knowledge, other than the reporting requirement, which may be very "loosey-goosey," there is nothing before 2008. Even then, the accounting that will be done after that year is an average of the emissions between 2008 and 2012, not an individual, year-by-year accounting. Thus, there is some time flexibility there.

ANSWER, MR. STEPHENSON: There will be, of course, some development of rules on how the trading programs will work, what sinks will be allowed, and how projects in other countries will be implemented. I think you already have a secretariat that is established for Framework Convention on Climate Change (FCCC). I am sure that the FCCC will increase in staffing to achieve the rule-making requirements.

QUESTION, MR. CLELAND: I would like either Bob or Dale, or both of you, to comment on something that came up in the last session. Several people, including Dale, commented about the Bush plan and the previous speaker, for the most part, commented on it unfavorably. It does not take very sophisticated arithmetic to conclude that the eighteen percent reduction in emissions intensity is not much different or any different than business as usual, but the idea of emissions intensity as a potential structure, as a

⁴ See, e.g., Protocol Amending the Agreement on Air Quality, U.S.-Can., 30 I.L.M. 685 (1999).

⁵ See *Australia Signs Climate Pact With U.S.*, at <http://sg.news.yahoo.com/020301/1/2k1k4.html> (Mar. 1, 2001).

⁶ See *Vice President Gore and Premier Zhu Rongji Announce Environmental Agreements at U.S.-China Policy Forum on Environment and Development*, at http://www.state.gov/www/regions/eap/990409_us-china_enviro.html (Apr. 9, 1999).

potential architecture for emissions management, seems to me has some evident attraction. It reduces or eliminates what might be a perverse incentive against economic growth, which certainly holds an attraction, I think, to the private sector and potentially to the less developed countries we are very much wanting to get into this framework. I am wondering if one or other of you would comment on that as an idea.

ANSWER, MR. STEPHENSON: I can go ahead and start. I think it is probably interesting to note when you look at this where we fall in the first place. In terms of greenhouse gas emissions per dollar of gross domestic product, the United States ranks fourth in the world right now, behind New Zealand, Australia and Canada.⁷ It is one of the lists where Canada beats us, and I think that is probably why that metric was chosen to put us in the middle of the list instead of the largest regular polluter out there on this area. I think it is also a good metric to look at when you are comparing what is happening, primarily in China and India. You have economies that want to grow dramatically and the underlying force here is essentially that they have their own Industrial Revolution, as we had ours. I think that is the bottom line. You can do it by either not regulating them and letting them burn fossil fuel at a greater rate with less controls, or you can give them the cash directly; that is going to be a hard thing to achieve on the international stage, and that is the tension that we are playing with. It is a good metric to use to find out what really goes on, but you have some countries that want to catch up on the gross domestic product that do not want to see that rubric put into place.

ANSWER, DR. PAGE: Mike, if I can just briefly comment on this. In terms of Alberta and Western Australia, which are two markets that we serve, the whole issue of going at it from an emissions intensity point of view is actually critical right now in terms of developing an effective system. Let me tell you all why I say that. Today, the oil sands in Northern Alberta provide about 500,000 barrels of oil a day to the U.S. market,⁸ this number is estimated to increase to about 2 million barrels a day to the U.S. by the year 2012.⁹ What we are looking at is an enormous growth of natural gas and oil

⁷ See 1995 Greenhouse Gas Emissions Per Dollar GDP, at http://www.epa.gov/globalwarming/presentations/emissions/stock/95_ghg_gdp.pdf (last visited June 18, 2002).

⁸ Total oil exports from January through November 2001 averaged about 1.775 million barrels per day. *Canada Country Analysis Brief*, at <http://www.eia.doe.gov/emeu/cabs/canada.html> (last updated Feb. 28, 2002). Current production of oil sands in Alberta is about 665,000 barrels per day. *Alberta Energy: Oil Sands*, at <http://www.energy.gov.ab.ca/com/Sands/Introduction/Oil+Sands.htm> (last visited June 19, 2002). About 60% of that total is exported to the U.S. every day. See *Alberta Energy: World Energy*, at <http://www.energy.gov.ab.ca/com/Room/Key+Publications/World+Energy.htm>.

⁹ Suncor Energy, the world's largest producer of crude oil from oil sands, currently produces about 200,000 barrels per day. Recently, it announced a major capital investment in

production largely in the export market. That is going to add enormously to the Canadian overall totals that we have to meet under Kyoto. Under an emission-intensity approach, you are given credit when you lower your rate of emissions. I think, frankly, the Bush proposal is only the beginning of a start in this direction, but it is one that I think would be viewed very positively, especially in Western Canada. You can still have a formula for conversion back to emissions; it is more difficult but you can still do that.

Secondly, I just would like to relate an anecdote from Western Australia. We produce power there for the mining industry. When I met with Western Australian government, the senior official in the energy department, Alan's counterpart, said to me, you know, you Canadians do not understand the problem we have.

And, I said, oh, I thought the discussions in Canberra and Perth, the capital of Western Australia, were identical to the discussion in Alberta and Ottawa. I felt very much at home in terms of the rhetoric that was flowing back and forth.

He said, no, you missed my point. In Western Australia, the difference between our 1990 baseline for Kyoto and our estimated business-as-usual for 2008 and 2012 is 142 percent, because most of the oil and gas industry in Western Australia has sprung up since 1990. So, if you have an emissions intensity system, you can demonstrate progress while at the same time not be burdened by needing to worry about the effect of all that economic expansion. For Australia, that is particularly important because there competitors are north of them, in Indonesia and elsewhere, which will have no such obligations under Kyoto; thus, the competitive issues are even more pressing for Australia than they are Canada. I am not trying to suggest they are not significant for Canada.

QUESTION, MR. ABRAHAMS: Let me preface my question and say I am not a U.S. government plant here.

Actually, this question is for Mister Page. In one of your earlier overheads, there was a statement that your company's goal was to eliminate all greenhouse emissions by 2024, which sounds like a rather ambitious program given the short time frame. Are there any company plans to either share this technology with competitors in your country or in Canada or even to sell the commercial rights, as this sounds too good to be true?

ANSWER, DR. PAGE: Well, it is too good to be true in a sense because there is a lot of money and lot of work to be done in connection with this goal. I will try to explain how this has happened, because the U.S.

an attempt to more than *double* its current capacity. See Kevin Nabholz, Suncor Energy's Approach to Major Capital Projects, Remarks Before the Alberta Buyer-Seller Forum (Mar. 14, 2002) (transcript available at <http://www.cme-mec.ca/ab/bsf2002/suncor.htm>). It is likely that other companies will follow Suncor's lead.

Department of Energy has sponsored some of the work we are doing on this. Certainly, if they continue through to the next phase, then that would be something on which we might be willing to negotiate.

What we are proposing to do here is to change the combustion system fundamentally, either through coal gasification or through CO₂ extraction technologies. What would be here is essentially permanently sequestering underground 100 percent of your emissions, not only CO₂, but also SO₂, NO_x, particulate and mercury. What we are trying to do is to run with the concept that we are recycling our emissions back underground from where they came. We believe that certain geological structures are appropriate for this, and we are working with Canadian and international oil companies to do just that. The way it is being structured in Canada, thanks to some of Alan's colleagues in Natural Resources Canada, is that the Canadian government for the provinces, some of the coal mining companies, and all of the thermal utilities from Alberta to Nova Scotia are involved in what is called the Canadian Clean Power Coalition. That technology, when developed, will be available under license to any of them.

The levels of contribution will relate to the levels of emission. The Government of Alberta and the federal government will be the leaders on the government side. Using some of the lowest-sulfur coal in North America, we believe that if we can meet the environmental and emission challenges of coal, we can then have a legitimate right to the economic advantages for your customers and your shareholders for preserving the future for coal. So the onus is very much on us for the future of coal to develop that technology.

When I took this commitment to my Board of Directors, I was not expecting approval, but I got it. I got it because the people around the Board table thought that it was so important to be demonstrating public credibility with regards to the long-term goals as a company that they were prepared to buy into it. We will achieve it because the initial technical work on sequestration seems to indicate that it is feasible. That has all been done by Pan Canadian and by U.S. oil companies for some time.¹⁰ The critical issue is the combustion technology, and that is where we are pouring our time, money, and effort. Our estimate is for a retrofit-to-test in 2007, and a full greenfield plant to be tested in 2010. It would then take until around 2012, because you would have to take at least two years (especially with our winters) to test the technology. It would then be available during the second commitment period for the beginning of application to our existing plants and would be done in sequence. That sequence will end in 2024, when that capital stock renewal program would be completed.

¹⁰ See *Climate Variability & Carbon Management Program*, at <http://www-esd.lbl.gov/CLIMATE/> (last visited June 19, 2002).

COMMENT, MR. NYMARK: Bob, as I interpret the last three bullets on your last slide, you are proposing a NAFTA emissions trading system.

COMMENT, DR. PAGE: That is correct.

QUESTION, MR. NYMARK: Can you briefly describe the principal design features of how that emissions trading system would work?

ANSWER, DR. PAGE: I will attempt to do it briefly, because there are a whole series of technical issues that both and Alan I know well, with which I will not bore others.

Now, under Kyoto, we would have no problems with Mexico transferring credits either to an American or to a Canadian market. Moreover, there would be no problems with Canadian-authorized Kyoto credits moving to the American market. Where you have the difficulties is with non-Kyoto credits within the American markets being accepted as Kyoto-verified credits within the Canadian market.

First of all, the amount of demand for those credits, given that U.S. offset projects are more expensive than Canadian and international projects, we do not estimate that the number demanded will be huge, but it will be there. It will be particularly important for companies like my own who, doing methane-capture projects in the American Midwest or agricultural soils in Iowa, possibly want to move those credits back to Canada. Now, under the private-sector arrangements, there are extensive negotiations with some of the largest financial institutions in the world going on right now. There would be pooling arrangements so that American companies wishing to bring CDM credits back from Latin America or from Africa or Asia and would put those into a common pool within the United States. From there, those in the United States wishing to transfer credits from the United States to the E.U., to Canada, or to Japan would have the option of paying a premium to actually see within a large pooling arrangement the exchange of Kyoto verified credits for American verified credits.

There are a couple other ways within the private sector we think we can manage this. But this is a critical issue that you raise, and it is one which the International Emissions Trading Association are spending a lot of time on today, in North America, in Japan, and in Europe. If you let us do it, Alan, we can do it.

QUESTION, MR. ROBINSON: I am going from the sublime, which is your explanation of that very complex system, to something really ridiculous, but let me confess: I do not do numbers. I cannot even balance my bankbook. I do not even try. So this is a really naive question, but perhaps you could help us understand how the world trading system works in the context of this story that I have heard, which came from the U.S. coal industry. Since Russia was at the nadir of its industrial production in 1990, the value of credits that it has to sell are in hundreds of billions of dollars; when this system happens, we are suddenly going to transfer in one huge

lump all of the industrial growth since the Second World War from North America to Russia in terms of hundreds of billions of dollars that they are going to get for anything. But, in fact, on a net basis, since they start from 1990, they can do their industrial production and keep the money. I must have got that wrong somehow.

ANSWER, DR. PAGE: This is a very important question. It is important for two reasons. It is important because there is a great deal of mythology involved with Russian hot air right now; and it is very important for me to just try to take a minute and explain what “hot air” is. “Hot air” is the difference in the level of economic activity between Russia in 1990, when its economic system was still functioning reasonably well, and today, which, following the enormous economic decline as Russia moved to a free enterprise system, their economy declined and their emissions declined as a direct result. Within the Kyoto Protocol, there is legitimate scope for the trading in “hot air.”

Our company will not touch hot air. I could have been in Moscow today. The Russian government invited me to come because they are working on this, and we are one of the consultants (the International Emissions Trading Association) to their work. The Russians are very anxious to develop a market for their hot air, but individual companies are being very careful, because if you bring hot air back to, say, Alberta, we have to have the approval of the Alberta government that those credits are legitimate. The controversy with environmental groups that will be triggered by any use in a regulatory process in North America of Russian hot air will be very considerable. I will side with the environmental groups here, for this reason: the Russian economy is expanding. Every time I am over there, I am seeing more economic growth, and we deal with some of the largest companies in Russia like Gazprom. As the Russian economy grows towards 2008 and 2012, that gap that they wanted to sell as hot air is going to decline. What happens if those two lines cross in 2010? If they do, and you are a company that has bought those credits, I am not sure the Russian government is going to subsidize you. There is a “buyer-beware” understanding by virtually all companies that I am aware of regarding the purchase of Russian hot air.

Alternatively, what is equally cheap, but much more buyable from a regulatory or legal point of view, is the whole issue of projects *within* Russia. There is enormous potential for pipelines and other projects in Russia. The Gazprom system is very leaky – I am sorry, I hope I am not offending any shareholders in the audience – and there is enormous potential for methane capture from natural gas pipelines or from forestry, agriculture soil, or from coalmines. There is a whole variety of options here.

Now, what you do is that you create a baseline before you begin; you have independent scientific verification of that baseline. You then track, on a yearly basis, the emissions following the measures you have taken to curb

those emissions. Then, you bring all that evidence back – because I have to justify to Alan that what I am doing with this is legitimate – and I have to justify it to the Alberta government in a public process in which environmental groups are involved. Unless I have reasonable scientific evidence from third parties that are completely outside our company, then I am going to have trouble justifying some of those measures.

The last point I make here is there are tremendous differences in the prices that are being charged on this greenhouse gas emissions trading market, and that the price differential is a direct product of the risks that you take. What the Russian government is trying to do in the absence of large demand for the United States is to figure out how they keep up with price for both the project credits and the hot air.

COMMENT, MR. ADLER: This will be our last question.

QUESTION, MR. RUNNALS: A question for both of you, but principally for Bob: if Canada does not ratify Kyoto, the bind that the government has created for itself, this whole question of credit for exports, if you can foresee a NAFTA trading scheme, Bob, does credits for exports fit in there? If it does, how is it accommodated, and how do you get credit for exports to a non-Kyoto signatory in such a way that you justify internationally?

ANSWER, DR. PAGE: The way we handle this right now is that we have quite a bit of transborder transfer on carbon credits; we handle this from a contractual point of view. We do not do it from a state-to-state point of view, which is the position of the government of Canada. We do it from a company-to-company point of view. The CO₂ offsets credits are part of the negotiation for the sale of that electricity or whatever it happens to be. It becomes a normal part of your business operation; it is also a second revenue source for you with green power and other things.

Now, the difficulty with this from a Canadian point of view (and this is why Alan does not have as much flexibility on this as I do) is that we sell natural gas on long-term contracts. We sell some electricity on long-term contracts and we are locked in with those contracts for a much larger period of time than I am in terms of what we are doing here. That is why what is applicable in one area may not be applicable in another. However, you can do it strictly from a contract point of view, and if we had a North American emissions trading system, it would facilitate that in a normal private-sector point of view as opposed to a state-to-state one.

QUESTION, MR. RUNNALS: But is it going to help him when it comes to the end of the day of actually tallying up the Canadian score – the first commitment period?

ANSWER, DR. PAGE: Well, any credits we bring back to Canada through this arrangement, whether they are from Mexico or the United States, would be authorized for Kyoto purposes.

COMMENT, MR. ADLER: Please join me in thanking our panelists.

