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U.S.-ALBERTA ENERGY RELATIONS:
A CONVERSATION WITH PREMIER ALISON REDFORD

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P R O C E E D I N G S

MR. EBINGER: Good afternoon, ladies and gentlemen. We thank you all very much for coming today. We're delighted to have the Premier of Alberta, Alison Redford here as our guest this day. And we're also delighted Ambassador Doer and the other distinguished members of the Canadian government and the Alberta government who are able to join us and other distinguished guests.

I am going to introduce Dr. Yergin, who, of course, needs no introduction. Dr. Yergin is the chairman of our Advisory Board for the Energy Security Initiative here at Brookings, and we're delighted that he was able to join us today.

But before doing that let me just give a note of thanks, both to my own staff and the Energy Security Initiative, who have been instrumental in getting you all here today, and also the close interaction we've had with the Alberta government in making this event happen. And we're delighted to be able to be hosts today.

As I say, Dr. Yergin needs no real introduction. He is, of course, one of the most noteworthy and notable energy scholars around the world. His two books, *The Prize* and *The Quest* are two texts used by many schools throughout the nation and by energy professionals as well. He, of course, for *The Prize*, received the Pulitzer Prize, and that book has now been translated into 17 different languages. I remember the first time I saw a copy of it sitting on someone's bookshelf in Beijing and pulled it aside and I said, "I can't read this." He also serves on the U.S. Secretary of Energy's Advisory Board and chaired the U.S. Department of Energy's Task Force on Strategic Energy Research and Development. He is a trustee of the Brookings Institution and on the Advisory Board of the Massachusetts Institute of Technology's Energy Initiative. It is with great pride that I introduce Dan Yergin.

(Applause)

MR. YERGIN: Thank you. Thank you very much, Charlie. I appreciate those words, but I really prize my association and activities here at Brookings, both as a trustee and also as co-chair of your Energy Security Initiative, which makes such a contribution. And it is under the auspices of the Energy Security Initiative that we have this discussion today. I'm very pleased to -- of course, to have Premier Alison Redford, the premier of the province of Alberta. We have two of her ministers with her here today - - Diana McQueen, who is the Minister of the Environment, and Cal Dallas, who is the Minister of Intergovernmental Affairs. And of course, in addition to Ambassador Doer, we're very pleased former U.S. Ambassador to Canada Giffin is here as well.

The specific topic, of course, is the Keystone pipeline, which is the most famous pipeline in the history of the world. (Laughter) And all the more so that it hasn't even been built. So it is quite an achievement. But there's a larger energy security aspect to this, which behind that is the scale of Alberta as an energy-producing country. Its 2.4 million barrels a day of oil output total are equivalent to a major OPEC country. For instance, it's really the same scale as Venezuela, which indicates the strategic importance of that resource. And on top of that, the 1.8 million barrels a day of oil sands, if that was a country onto itself would be the largest single source of U.S. oil imports. So in other words, there's a lot of significance in the discussion that we're going to have today, and it's very valuable that we have the premier to guide us through this discussion.

She graduated from the University of Saskatchewan with a degree in law. She spent several years working in the federal government in Ottawa, both for the prime minister and as a senior advisor to the Minister for External Affairs, the foreign minister of Canada. She then turned in her career to focusing on human rights, and she

worked on human rights education, policy and legal reform in South Africa, in Mozambique and other countries in Africa, in the Balkans, and in a number of countries in Asia. While doing that, she had the opportunity to work alongside Nelson Mandela after the end of apartheid in South Africa, and then representing the United Nations, she was one of four of the international election commissioners who organized Afghanistan's first-ever parliamentary elections in 2005.

With that broad international experience, she's also deeply rooted in Alberta, where she practiced law for a number of years. She was first elected to the Legislative Assembly in 2008. She served as justice minister for three years and then became the leader of Alberta's Progressive Conservative Party and premier in October 2011. And she's very much at the forefront in her work in seeking the balance, and indeed, the partnership between energy development and environmental stewardship. So Premier Redford, we're really very pleased to welcome you to Brookings today. Thank you.

(Applause)

MR. EBINGER: I'm sorry, I forgot to tell you, you have cards on your seats if you'd like to write questions while the premier is speaking, we'll be glad to get those answered during the course of the delivery.

MS. REDFORD: All right. Well, thank you very much for being here today, and thank you so much, Charlie and Dan, for hosting this event which for us is very exciting. The Brookings Institution, of course, is a place where I've never spoken before, but it is certainly an institution that is well known to many of us in Canada, and it is an honor to be here today with our Canadian ambassador, Gary Doer, and with Ambassador Giffin. And I know that while there are those of us in the room, that there's

also a webcast of this, so I welcome people that are watching online from the comfort of their own homes.

It is a pleasure to be here, to be able to have a discussion in this room, which is truly representative think tanks in the United States because this institution has a tremendously distinguished record of promoting shared solutions and dialogue with respect to the issues that matter the most to us in North America, not just because of the focus that we might have in our own jurisdictions with respect to social policy and economic growth, but the fact that we share priorities. Canada and the United States have had a long trading relationship, and the priorities of this institute, energy and climate, energy security, global change, growth through innovation, are also the opportunities and the shared values that we have in Alberta. It's wonderful to be able to think about the opportunities that we have to change the way that we talk about energy, social development, and the environment, and every opportunity that we have to come together to do that I think allows us to better understand what our shared goals are and can be.

So right now, the reason we're all here, the reason I'm here in your beautiful city, is because we are involved in witnessing some pretty heated discussions about what progress on those priorities that we've talked about should look like. The debate over Keystone XL illustrates this point. This is a Canada-U.S. pipeline, and as everyone knows, it will further build the ties that we currently have between the United States and Canada. And I want to emphasize that it's a joint Canada-U.S. pipeline. Pipelines have beginnings, then have ends, they cross borders, they cross jurisdictions, and if we think about the energy infrastructure and the pipeline infrastructure that we have in North America, clearly this pipeline is part of that system.

We think it's important for all of us as North Americans, because it will bring a sizeable amount of new supplies not only from the oil sands to the United States, but also a sizeable amount of the new supplies from the Bakken formation in North Dakota to the United States' great refining centers. We're seeing divergent views about the project's impact, the benefits that it will bring, and the weight that should be given to the needs of the environment and the economy. And the supposed costs of tilting towards one or the other.

For the most part, I consider this conversation to be a healthy and a very worthwhile process. At the end of the day, as citizens in our countries, we all need to be part of the decision-making process, and we have to make sure that governments that are making decisions and leading responsible change can do it with the social license to operate. And we only get that from the people that we represent.

But, to be honest, one of the reasons that I wanted to come this week is because the dialogue that is going on right now does suffer some fairly glaring deficiencies. They're overshadowing essential truths, and we need to make sure that whatever our perspective might be on this project, that we're talking about facts. The most basic truth is that the stark choice that Keystone's opponents have put at the heart of the debate is an illusion. Too many of the arguments that are deployed against Keystone are far too far from reality. They proclaim that either you stand against the oil sands or you write off the environment, along with any hope for sustainable existence, and that is completely wrong.

I want to address Alberta's approach to the environment first, because being responsible stewards of our natural resources is uppermost in Alberta's mind. We live in our province, in our community, just as everyone else does in North America. We

know that our quality of life depends on our respect for the land that we live in, and we accept that we're global citizens with responsibility to the planet that we leave behind, and we have to be forthright with respect to that. And I am going to be forthright today, because the truth is that Alberta is home to some of the most environmentally friendly, progressive legislation in the world. And you wouldn't know that from the clamor of the debate.

We have nothing to hide. We're a democracy, we're transparent, and we'll talk about our facts. We'll talk about what our record has been. And I'll start by acknowledging the most basic one. Energy does come with an environmental cost since its production and its use generate greenhouse gases that affect the climate. The oil sands contribute 21 percent of Alberta's greenhouse gas emissions, 7 percent of Canada's emissions, and less than 0.15 percent of global emissions. The Canadian oil sands in total produce less greenhouse gas emissions than the electric power plants in Ohio, in Indiana, and even less than the agricultural state of Iowa.

And we're bringing our emissions down as far and as quickly as possible. In 2008, Alberta became the first jurisdiction in North America to require large industry to curb greenhouse gas emissions through legislation. Since 1990, Alberta's energy industry has reduced greenhouse emissions per barrel of oil that's produced by an average of 29 percent, and some facilities have achieved reductions as high as 50 percent. Alberta's coal-fired power plants have lowered their emissions by an amount that is equivalent to taking roughly 240,000 cars off the road, and we'll close up to a dozen of our older plants over the next 17 years so that we can replace them with cleaner alternatives.

Our Renewable Fuels Initiative mandates that the inclusion of alcohol

and biodiesel in all our fuel that's sold in the province is a requirement, and we're pushing ahead with plans to capture and store as much of our carbon as possible. The government of Alberta is providing \$1.3 billion in funding for two large-scale carbon capture and sequestration projects. These are major commitments for a province of only 3.8 million people, smaller than the metropolitan D.C. area. But we're undertaking them because we know that they're necessary and because it's the right thing to do. We're not just limiting pollution; we've put a price on it. We've put a price on carbon.

Since 2008, Alberta's legislative price on carbon has helped to support 49 clean technology projects that include a left bridge biogas project which generates electricity and steam from renewable natural gas formed by industrial-scale digestion of organic waste, reducing greenhouse gas emissions, and an electrothermal oil sands pilot project which uses water and electricity to separate oil from sands and clays that nearly eliminate onsite greenhouse gas emissions from oil sands production.

Of course, our opponents' focus has always been on the oil sands. The government and the people of Alberta hold producers accountable for every aspect of their operations in the oil sands. Before any project begins, industry must develop and receive approval for closure plans that outline how affected areas will be reclaimed, and then they have to post a reclamation bond as a further guarantee. Currently, government holds \$1 in such bonds from industry, and companies can only get that money back after they meet rigorous standards. Reclamation means using local plant species to target the local boreal forest ecosystems. We test soils, we monitor vegetation growth for at least 15 years, and only after we're satisfied that the site's technology and ecology is returning to normal can energy firms apply to receive their bonds back.

As part of this, industry has planted 7.5 million tree seedlings. Only 0.15

percent of Alberta's total boreal forest has ever been disturbed from oil sands development, and by law, every single inch of that must be reclaimed. And we don't stop there. The Alberta government has brought in a land use plan for the oil sands, which sets aside roughly 5 million acres of boreal forest for conservation. Total protected land in Alberta is larger than Connecticut, Rhode Island, and D.C. combined.

Critics still point to the tailings ponds where the byproducts of the industry's chemical separation processes are stored. And they point to those as a reason to deplore the oil sands. But here, too, their claims simply aren't backed up by the facts. Eighty percent of oil sands reserves are accessible only through in-situ methods, which involve separating the bitumen from the sand underground and pumping it to the surface. The resulting land disturbance is only 10 to 15 percent the size of a conventional mining operation and it produces no tailings ponds. The companies who do use mines and tailings must completely halt the growth of fluid tailings ponds by 2016 and process tailings at the same rate that they are produced thereafter. Tailings ponds disappear from Alberta's landscape in the very near future, and reclamation of existing tailings ponds has begun.

All of this is happening under the auspices of a world-class monitoring system that is jointly run with Canada's federal government. This new system dramatically improves our ability to detect environmental changes and to manage the impact of development. By the time it comes fully on stream in 2015, the system will include more site samplings over a larger area, a longer list of testable parameters and increased testing frequency for biodiversity in air, for land, and for water quality. Monitoring activities will be subject to external, independent peer review by internationally acclaimed scientists and all data gathered will be made publicly available online in real

time so that anyone can access the oil sands performance for themselves.

This is all part of our integrated approach to resource management. Instead of studying impacts on a project-by-project basis, we are examining the combined effects of the work that takes place in the oil sands on existing and future developments over the entire region. And this is how we will achieve the environmental and the economic outcomes that Albertans expect and ensure that we maintain our very important social license so that we can continue to produce energy responsibly and transport it safely.

Now, I know all of this is a lot to take in at once, but Alberta has a strong record to defend, a very persuasive case to make, and an undeniable need to make it. The facts need to be on the table during the debate over Keystone. We are a responsible energy producer and we are looking to develop our market and our resources in a sustainable and a thoughtful way to the benefit of both the buyer and the seller. That's the real story. Canada and the U.S. share one of the most integrated trade relationships in the world. After all, Canada is the most important global export destination for 35 states. Over 8 million American jobs depend on trade and investment with Canada. And despite this country's expanding supply of domestic tight oil, which I know everyone is very excited about as are we, energy imports will still remain a reality for a very long time to come.

Now, there's much talk in the United States about energy independence. The only realistic way to see this is in terms of a North American energy economy. North American energy independence that allows for close integration between our two countries because historically that is what has allowed our partnership to be most successful. Almost 30 percent of U.S. oil imports now come from Canada. Without

Canada's almost 2 million barrels a day from the oil sands, there is no prospect of North American energy independence. It makes economic and environmental sense to get that energy from a trusted partner.

Unlike so many of your suppliers, Alberta is part of a democratic nation, so your dollars go to support a free and an open society. And that's when they don't come back to you. For every dollar that the U.S. spends on importing Canadian oil, 90 cents returns in the form of Canadian imports of American products. That is far more than the average OPEC country. And development of the oil sands will only accelerate this trend. More than 900 American companies supply oil sands firms with equipment, parts, and services.

Keystone XL would add an estimated \$6.9 billion a year to your economy over the next 25 years and create or preserve more than 75,000 American jobs. Canadians would like to see a level playing field in the debate over Keystone XL. The opponents of Keystone are in effect tilting the playing field, ironically, in favor of Venezuela, which would be the biggest beneficiary in the absence of Keystone. If it is not Canadian oil sands in the U.S. refineries, it will be Venezuela heavy oil. Yet Venezuela's oil has the same carbon footprint, while Venezuela has little of the environmental policies and the commitment that we do in Alberta to sustainable energy development. And importing oil from Venezuela does far less for the U.S. economy and for U.S. jobs than Canadian imports.

Alberta does have other options besides Keystone, and I know that those are always part of the discussions that go on. We are an exporting economy. We know that we can get our product to Tidewater. We know that we can sell to customers around the world. And there are several proposals that are on the table, including moving energy

west to the Pacific and East to the Atlantic via pipe, north via rail, pipes going north, and we think that this will allow us in the very near future to achieve an even higher level of deliverable product to the developing world.

Now, I believe that from our perspective in Alberta and as Canadians, that this will prove vital to a growing global strategy that will allow for the developing world to get access to the resources that we produce. We know. We know that the world is thirsty for our energy. Whether it's China or India, our trading relationships and the investment is growing all the time. But it's Keystone that offers the U.S. the most direct and the most tangible rewards. But I hope that not just Washington, but Americans across the country understand them and recognize that the precautions that Alberta is taking allow for us to produce energy safely and in an environmentally sustainable way.

To echo recent remarks by President Obama, we in Alberta believe that North Americans should never have to choose between jobs, economic growth, energy security, and strong environmental protection, and we want to be able to lead in those North American discussions. Through our policies and our actions past, present, and future, we will continue to demonstrate that Alberta is the safest, most secure, and most responsible energy supplier to the United States.

I have to say that when I travel around the world, we see that the best opportunity for us is to partner together, to make sure that we're having a full, frank conversation with respect to the options that face us, and to make sure that whatever we decide, that it's based on real information and facts.

One of the reasons that we are so fortunate in Alberta to have the energy economy that we do is because of historic partnerships with industry leaders in the United States who have seen the potential of what a North American energy economy

could be. It's what has led to our great economic success. We share common values and beliefs that allow us to pull together in the same direction and to ensure that we're building infrastructure that allows us to be sustainable in North America. That is ultimately what Canada-U.S. energy trade is about. That is what our friendship has been about. That is what our whole relationship has been about. And we're striving to overcome some of the same challenges around sustainable growth and development as you are.

In Keystone, we have a solution in hand. We have a solution that is in full accord with our economic, our social, and our environmental values. It's a matter of putting facts into the dialogue and letting them speak for themselves. There's information that's available to people who want to understand the choices that we need to make in our life. The choices that we need to make in order to continue to have the quality of life that has led to our success over the past 50 years.

So as we move ahead, I look forward to the question and answer session. I look forward to the dialogue. At the end of the day, we have opportunity to change the conversation, and I look forward to having that with you. Thank you.

(Applause)

MR. EBINGER: Bear with us just for a couple of minutes while Dr. Yergin and I get miked. Our format will be we will begin the conversation with the premier and then we'll move it to the audience. I think you have cards. You can submit your questions in writing. We'll try to get as many of them answered as we have time for until around 3:30. Thank you.

MR. YERGIN: So thank you very much, Premier Redford. I think that you've sketched out a framework, the environmental framework in which Alberta's energy

is produced in a very comprehensive way. One question, I think a big surprise for many people -- we've already heard it today -- is that Alberta has a carbon tax. Can you tell us how that carbon tax came about and when and so forth, and how it works?

MS. REDFORD: Well, it's legislated, and it was first started in 2007. It is a system that monitors emissions from large emitters, and emitters who -- what's the statistic?

SPEAKER: One hundred thousand tons.

MS. REDFORD: One hundred thousand tons per year -- pay into a carbon fund where we say we have a price on carbon. So what that allows us to do at \$15 per ton over 100,000 tons is put money into a technology fund which we then use to reinvest in technologies that will allow for more sustainable development of conventional resources. And we're taking another step as we move forward now to put investments into what we think are important, which are other technologies that allow for energy efficiency, public transportation, and that sort of thing.

But it's terribly important for us that we see actual impact from these projects, which we've now started investing in for the past two and a half years. We've invested, as I said, in 49 projects, and some of them, as I said, are not related directly to production in the oil sands but related to water, related to longer term environmental sustainability issues. So from our perspective that seems to make more sense than simply collecting a tax and putting it in general revenue.

MR. YERGIN: All right. Charlie.

MR. EBINGER: Premier, critics of Keystone might say that the last several weeks have not been particularly good for the oil industry vis-à-vis pipelines with the spill from the Pegasus pipeline and, of course, several railroad tank cars are having

accidents up in Minnesota. How do you -- what do you say to critics who cite the Pegasus spill as a small scale example of what might go wrong with Keystone?

MS. REDFORD: Well, as I said in my comments, we have to be honest about the fact that if we do have energy development there is the risk of really unfortunate incidents happening. And it is an unfortunate incident. It impacts people's lives. But the strength that we have is that we have a regulatory process and we have industry that is accountable for when those actions happen.

The other thing to take a look at is that what we're talking about with Keystone is a pipeline that is going to be, of course, state-of-the art technology. As I said earlier, you know, we walk around our communities and probably don't realize how much pipe there actually is underground. We shouldn't be worried about that because the point is we don't know it's there because overall these are very isolated incidents and they don't happen as often as people might suggest that they could.

The other comment I'd make, and you raised it in the context of railcars is, of course, rail is a very important part of a transportation network, but railcars also have risks. And as you've mentioned, this can happen. Without pipelines you end up with an awful lot more railcars carrying an awful lot more product aboveground and I think the risks get elevated, not to mention the impact on emissions.

MR. YERGIN: I think this is your fourth trip now to Washington as premier. How do you find the discussion -- today you've had a lot of discussions already. What strikes you about the nature of the debate that's going on?

MS. REDFORD: Well, we talked about this a bit earlier. I mean, this is a discussion that's going on right now. We know that the decision is getting closer and closer. I'd say people's minds are quite focused. I'm not sure that we're necessarily

talking about a lot of things that are different than what we've been talking about in the past year and a half because what we've been talking about has been Canada's commitment to environmental sustainability and Alberta's record with respect to production, but there's no doubt that there are a number of people that are very engaged right now knowing that there is a possibility of a decision coming. And so it's a great opportunity for us to be able to share as much information as possible in a very efficient way.

MR. EBINGER: Since the first rejection of the pipeline by the president last year --

MR. YERGIN: Postponement.

MS. REDFORD: Postponement.

MR. EBINGER: Postponement, excuse me.

MR. YERGIN: Technically.

MS. REDFORD: I was going to say that.

MR. EBINGER: Since the postponement of the pipeline last year, the boom in U.S. oil production has continued unabated with production estimated to continue rising at the fastest rate in the history this year. From your perspective, how has this surge in production south of the border affected the debate around Keystone, particularly when it comes to the energy security case for the pipeline?

MS. REDFORD: Well, you know, it's interesting because we know that the United States has always been a very loyal customer of Canada. As we've talked about before, you know, 30 percent of imports are coming here, our exports are coming here. From our perspective, I think it's really important that the United States has a conversation with respect to energy, security, and sustainability, but I just don't think that

anyone benefits from living in isolation. You know, if we take a look at production of resources, you see always at the very beginning increased escalation with respect to production, and then in some cases decline with respect to production. There are ups and downs. There are always new technologies. There are always different ways to discover resources. I know that there's a lot of talk about sort of energy self-sufficiency by 2020. We know that there's also the opportunity to continue to be integrated. You know, in terms of the work that we see going on in the United States, there's incredible activity around production, and I think you're going to continue to see upgrading and refining happening. But it's never been successful when it's been done only within national borders. We see in North American generally an integrated transportation system, an integrated refining system that really allows for much more economic opportunity. I just don't think anyone should live in isolation.

MR. YERGIN: In your remarks you talked about projects -- up till now I guess the oil has gone south to the United States. You talked about it going east, west, even north. Do those projects, I mean, can you give us a sense of where the discussion stands on those projects? And do they go ahead whether or not there's a Keystone?

MS. REDFORD: Well, one thing that's always fascinating to me about industry and markets is that industry will always find their markets. And we've seen in the last six or seven months tremendous innovation with respect to transporting product to market. As we talked about earlier, some of that's been by rail. We have pipeline projects that have been well on the go now for some time to the West Coast, to the East Coast. There's a pipeline right now that's almost fully built in Canada that takes our product -- will take our product to Tidewater through New Brunswick and Quebec. And that is a pipeline that's actually almost completely built. There's about a 100-mile section

that needs to be built, but provinces are very engaged in making that happen.

So we have both short-term, medium-term, and long-term opportunities to fill existing pipelines, some even going north possibly through Alaska or to our northern borders. So they're all at different stages. Keystone itself is a project that was expected to be able to ship for still a number of years, so there's still lots of opportunity for all of that product to get to market. But we've got projects that are all in different stages right now that would allow for further export of the product.

MR. EBINGER: We want to go to the floor in just a second, but let me ask another question if I may.

After the publication of the State Department's SEIS, their Environmental Review, which found that the pipeline would have minimal greenhouse gas impacts in the context of total U.S. emissions, environmental opponents are now focusing less on the quantitative impact of the pipeline and more on its symbolic dimension. They say that President Obama should block the pipeline to send a message that he is serious about climate change and to demonstrate to the rest of the world that the U.S. is taking some actions at emissions mitigation. How do you respond to that?

SPEAKER: They want to sell off the future of life on this planet. Let's get more creative. Create green jobs. It's easy. Just a little bit of subsidies and we can create green jobs.

MR. EBINGER: Excuse us for the interruption.

MS. REDFORD: Sorry?

MR. EBINGER: I said, excuse us for the interruption, but I think we see this is a passionate debate.

MS. REDFORD: It's a public debate.

MR. EBINGER: Right.

MS. REDFORD: It's an important part of public debate.

Sorry, but I missed the last part of the question.

MR. EBINGER: I'm sorry. The people are saying --

MS. REDFORD: Oh, yes. Yeah, yeah, yeah.

MR. YERGIN: The people are saying the president to show he's serious about climate change needs to take a bold and dramatic action.

MS. REDFORD: You know, I think that everyone needs to take action, and we're really proud of what we've been able to do. We know that in the United States that there has been action taken. I know just today on the Hill there are confirmation hearings with respect to possible new secretary of Energy, and these are exactly the sorts of questions that are being asked. You know, should there be a price on carbon? Should there be investment in carbon capture and storage? We think it's important for political leadership to take steps, and we've certainly see tremendous progress in the United States. I think that there could be more. I think even consumers can take different steps with respect to their commitment to public transit.

But I don't think that one particular project needs to symbolize the whole piece. It's a complicated business. It is important for us to be building technologies. It's important for us to be greening the energy economy. It's important for us to be investing in things like carbon capture and storage and to have a price on carbon. You can do all of those things, but you can still allow the pipe to go ahead because the pipe will have such a significant impact on economic development and growth in the United States. And in Alberta, certainly.

MR. EBINGER: So let me read you one of the questions from the floor.

“The recent draft environmental impact statement by the U.S. State Department notes that building the Keystone XL pipeline will only create 35 full-time jobs in the U.S. How do you rectify this number with the 75,000 jobs you cited? Have the economic benefits of Keystone been exaggerated?” And then the person concludes, “Thank you, Premier Redford.”

MS. REDFORD: Well, thank you. That is a number that's in the Environmental Impact Report. That's absolutely true, but that is the number that's associated with the people that would actually be operating the control room that would run the pipeline and monitor the pipeline. And I had actually thought the number was 100, so we could probably get some clarity with respect to the statistics.

But that doesn't speak to -- and this is important -- the construction jobs that you'd have as a result of this. In the Midwest and the refineries around Chicago, 90 percent of the volume going through those refineries is oil sands oil right now. That's a lot of jobs. This is not short-term, and this isn't isolated. This is about really a ripple effect on an economy that allows for people in communities right across the United States to have economic growth in employment, and it's certainly been the case in Alberta. You know, one in six jobs in Alberta is indirectly tied to the energy industry. And you've seen already in your own country with the development of what's going on in North Dakota just how much wealth and activity and economic growth there is as a result of these projects. And as I said, the pipeline also supports that activity, that growth, and getting that product to market and to refineries as well. So I think our numbers are closer to the truth in the long term, and we talk about what that means in the next 25 years because that is long-term economic growth.

MR. EBINGER: I'm not sure that this is true but the question is asking

you, "Can you confirm you are looking to raise the carbon levy in Alberta? If so, why now? And what do you think of the idea that the Canadian federal government should be taking tougher steps on the emissions from Alberta oil sands?"

MS. REDFORD: Well, we think that it's very important to have a price on carbon. We have a price on carbon, and we're very pleased with how that's worked and the way that we've been able to build the technology fund. You know, we continue to have dialogue. Probably Diane and I talk about this. It's essentially her job almost once a month to sit down with the federal government to make sure that we're creating a system that allows for real impact with respect to environmental sustainability and economic growth. We've taken leadership on that. We're working very closely right now with the federal government on a new set of oil and gas regulations that will deal with this. Part of that dialogue is talking about what our carbon price can do for technological development and economic growth, and from our perspective that's part of our ongoing conversation.

The second half of the question was which? I'm sorry.

MR. EBINGER: Whether the Canadian government, the federal government should be taking stronger actions.

MS. REDFORD: Our view is that the federal government is, and these are the discussions that we're having on a regular basis with the federal government around things like new oil and gas regulations on emissions. And so for us it is an evolving process. Again, I will say that I was getting reports of some of the confirmation hearings on the Hill, and one of the questions asked was should there be a price on carbon? And the discussion seemed to be going towards it not being considered right now. I don't know if it will or won't be considered in the United States but, you know,

everyone is having these discussions right now. We're having them and Washington is having them, and I think people right across this country are having them as well.

MR. YERGIN: There are several questions -- by the way, if others have questions, I guess what's the process? Just to hold up your card and somebody will come by and collect it if there are other questions, but there are several questions related to energy exports, i.e., one of the questions is "some of the Keystone XL's oil will be exported from the United States, why is the project in the national interest?" And that ties in also others have asked about the tradeoff between Canadian oil sands and Venezuela oil.

MS. REDFORD: Well, I won't speak more about the Venezuelan oil. I think I spoke to it in terms of our concerns with respect to how that resource is developed and the regulatory systems that are in place around that. I heard a radio ad this morning that talked about how Keystone was going to export oil to Venezuela, but I've got to think that's not likely when you're actually importing oil from Venezuela right now into refineries on the Gulf Coast. So again, a good example of factual inaccuracies.

But from our perspective, we think that the refineries that are currently in place that have been built as I talk about sort of historically to -- am I still on? Yes. -- to actually refine product, to refine the heavy oil that is produced out of Alberta, still have very long lives that will allow for continuing economic growth and activity. And there's no reason to presume that all of that would be exported. Perhaps some of it will if companies decide to make the decision to upgrade resources, some of which would be produced in the United States and upgraded and possibly exported. I guess that's a possibility but our experience is that what's been refined in the United States has partly been refined and the refineries have been built because of domestic consumption. So

whether that changes or not, I think it would be wrong to presume that it would, but the thing I do know right now is that those are refineries that will continue to be able to produce this resource, which is only supplied at the moment by the oil sands.

MR. EBINGER: This is perhaps an interesting question. "What prevents a large expansion of refining in Alberta in lieu of shipping the crude bitumen to Texas?"

MS. REDFORD: Well, part of it is going back again to the fact that we've always had an integrated energy economy. It's made a lot of sense for the private sector to build refineries in the United States, in communities where people have the skills and the interest in doing the work. We've found that in terms of how we develop our resources and export our resources, that that makes economic sense for us because it's the most effective way to transport the project -- or the product, I'm sorry. We do some refining and upgrading in Canada and we'll continue to do some of that, but our approach is that it's most important to be able to provide the product the customers have asked for. And what we're dealing with in the United States is tremendous demand for the heavy oil that's produced out of Alberta for the refineries, particularly along the Gulf Coast.

MR. YERGIN: You noted that there's been significant investment by Asian countries in Canadian oil sands. Obviously, that implies pipeline routes to the west, to the Pacific. Can you give us a sense of the nature of the kind of political discussion going on about pipelines and how you assess prospects and timing?

MS. REDFORD: Sure. Well, one thing I'll say just before that is don't make the assumption that we've got to pipe west to go to Asia. If you're actually exporting out of New Brunswick, it is a shorter distance to India than if you export out of the West Coast. I know that doesn't --

MR. YERGIN: Can we get a map?

MS. REDFORD: We checked it out. We've checked it out. It's absolutely true. And shipping east doesn't actually increase the cost to transportation to getting the product to Asia significantly at all.

But in terms of the West Coast pipeline, our sense is that there's a dialogue going on right now in British Columbia about gateway that is very different than it was a year ago. There's really an appreciation for the fact that there's been a regulatory process, that there have been hearings, that the information has been provided. We're still very optimistic that the project will get regulatory approval, and we do think that at that time that there's going to have to be, probably through the provincial election in British Columbia which will be in the next couple of months, much more public discussion in B.C. about the same issue that we're talking about here. But we do think that it's imperative that people are part of that conversation. And we think that this still goes ahead. Probably slightly delayed but there's still opportunity for that.

MR. EBINGER: If we had a pipeline to the West Coast, is there any prospect that's, ironically, that's similar to the opponents of the pipeline -- is there any possibility that some of that oil could then be shipped to the refineries in California which have the capability to process that heavy oil?

MS. REDFORD: Well, you know, I think anything is possible. I don't know if that would make sense for a company that's making commitments into a West Coast pipeline, and if they've made those commitments to go to Asian markets then they would. But I guess I wouldn't really want to go too far down the path because I think these are becoming sort of incredibly strange and complicated scenarios that don't really get us much further ahead, and I don't know if they even would make economic sense at the end of the day. I just don't know the answer to that.

MR. YERGIN: We're still thinking about the East Coast route to India being closer than the West Coast.

MS. REDFORD: I know. It's fascinating.

MR. YERGIN: We're trying to process that.

MR. REDFORD: Everyone is going to run out and get their atlases when they get home.

MR. YERGIN: Is the debate over Keystone affecting the pace of development? And will it affect the development of the oil sands? This is a question that's come up on a couple of the cards.

MS. REDFORD: Yeah. What we're seeing is a continuing growth in the oil sands. And one of the things that the State Department's report said is that if Keystone didn't go ahead we wouldn't really see much of a slowdown with respect to production. That's my sense in terms of, as you've mentioned, major investments that are being made in the oil sands right now. We see capacity ramping up 2020 to probably 3 million barrels, and we think that's going to continue. We don't see any reason why that is going to slow down. As we've said, we know that innovative private investors are able to get their products to market, and we see continuing global demand for the product. So we don't foresee any drop in production as a result of these discussions.

MR. EBINGER: We have several questions here, slightly different but they all relate to the question of how would rejection of the pipeline affect U.S. Canadian diplomatic relations and also relations between the business communities?

MS. REDFORD: Yeah. I don't know if I can answer that with the ambassador sitting in the front row.

MR. EBINGER: He's really interested in your answer actually.

MS. REDFORD: I'd make a couple of comments. And this is -- I'm glad that there's a second part of that question because something else to remember -- and I didn't talk about it in my speech -- is that a lot of the investment in oil sands are by American companies. I mean, there are economic opportunities in growth and profit that comes to the United States as a result of a lot of interest that U.S. companies have in the oil sands. And I think those are very tight relationships. I think that at a business level that everyone in the business community understands pretty completely what the opportunities are, and I think they work very closely together. So I don't see much of a change there.

I had someone describe to me what they thought a possible outcome could be if there was a decision not to proceed with Keystone. And they said, you know, we shouldn't make the assumption that if the decision was to not proceed with Keystone that that would simply mean that the matter fell off the table. You know, we've had experiences as trusted trading partners before on issues like softwood lumber where even though there wasn't direct dialogue going on with respect to the issue, it tended to come up again and again in other discussions, other bilateral discussions at the Canada-U.S. level. And I think you probably, Gary, were a premier during some of those discussions. So my sense is that it would be a lot more helpful to have this proceed because I think that if it didn't it would end up becoming a part of ongoing conversations and that would be disappointing because there's too many other issues that we need to discuss and be productive on, and it would be a shame to just let that sit in the middle of it.

MR. YERGIN: The world price may be over \$100 a barrel for oil but it isn't for Alberta.

MS. REDFORD: No.

MR. YERGIN: Or indeed for oil that's being produced in the center of the United States. And I think the term somebody has noted here is the bitumen bubble. What's been happening with your budget at home?

MS. REDFORD: Well, you know, we've had some challenging times, and we have coined the phrase, I think, the "bitumen bubble." And it's really had an impact on our revenues. You know, we've expected that probably this year alone that because of that differential that we're probably seeing about a \$6 billion drop in revenue, and that's why it is imperative for us.

MR. YERGIN: For the provincial government?

MS. REDFORD: Yes. So our annual budget this year is about \$38 billion. And so yeah, \$6 billion is quite significant for us. But you are right. It's about whether you're producing it in Alberta or whether you're producing it in the center of the United States, getting that to world market is very important and it'll be important for both of us.

MR. YERGIN: And I guess that goes back to the fact that you have these new centers of production and the logistics aren't connected, which is what Keystone is about.

MS. REDFORD: That's right. That's right.

What was your statistic about pipe in the ground? One hundred eighty?

MR. YERGIN: There are 180,000 miles of oil pipeline in the United States, and so Keystone would add about less than 1 percent to that.

MS. REDFORD: Less than 1 percent to the existing?

MR. YERGIN: In the United States.

MS. REDFORD: It's amazing.

MR. EBINGER: And there are a lot of gas pipelines, too.

SPEAKER: You all are responsible for these pipelines in the United States and for oil proliferation throughout our country. I'm not hurting anybody.

SPEAKER: Climate change means mass casualty flooding, mass casualty famines, mass casualty droughts.

MS. REDFORD: That's why we're doing something about it.

SPEAKER: Can you tell us about these facts regarding the climate change outside of the area?

MR. EBINGER: We would be delighted if you'd put a question in writing to her.

MR. YERGIN: I'd love to -- well, pass up your card and we'll be glad to ask the question.

MR. EBINGER: We'd be delighted to answer your question if you pass it up.

MR. YERGIN: Everybody else has passed up a card and perhaps you could do the same. Be polite about it. We'll be happy to ask your question.

MR. EBINGER: Here's one I think -- do we have one on the floor or do you want it?

MS. REDFORD: Sure.

MR. EBINGER: I mean, here's one I think that some of the people who may be opposed to the pipeline might enjoy hearing the premier's views on. It says, "You talk about shared solutions and shared priorities regarding the economic benefits of the pipeline project. What is the plan of action regarding the shared solutions for any

environmental damages that might occur both with the transportation of the oil and the export of the oil? Could you restate your priorities regarding conservation in light of these kinds of concerns?"

MS. REDFORD: Yeah. Well, I think this is very important. It's one of the reasons that the regulatory process and the approval process is so important, and we, in Alberta, certainly have very rigorous regulatory frameworks around how we expect industry to conduct themselves, how we expect them to build infrastructure, and how they need to be accountable for the consequences of adverse circumstances. We think that these are really the shared values that we already have with the United States. I mean, the United States also has very strong regulatory processes in place. That's one of the reasons we're going through all of this right now.

So in terms of shared priorities, I think they're already there. I think there's always work that we can do, and it's happening in Canada and in the United States about how to continue to enhance the response to cleanups when we need to. As I said, they don't happen often, but when they do we want to make sure that we're partnering on that and I know that when those circumstances have occurred that there are systems in place that have been developed in joint partnership, whether it's emergency response systems or industry approaches to deal with those issues.

MR. YERGIN: Industry. Tell us how industry is responding in particular - - I don't remember the name of it but the thing where people are pooling their intellectual property.

MS. REDFORD: Oh, yes. COSIA. The acronym that I never remember all the words for. What does it stand for? Canadian Oil Sands Innovation Fund. Thank you very much. And it's really interesting because it was something that started about

three and a half years ago. And industry came together and they said, look, we know that there are issues that we need to do with that we can't afford to be competitive on; that if we're talking about sustainable development, we don't want to be playing around with that and competing with each other around those technologies. So industry has come together and agreed to share their intellectual property with respect to the production and new approaches in techniques to sustainable development of conventional resources and the extraction of conventional resources so that we don't end up seeing industry competing against each other and having adverse impacts on the environment or having that in some way create a playing field that isn't level around environmental sustainability. So COSIA has been really dynamic actually, very important, and really was led by industry about I guess it was three or four years ago now.

MR. EBINGER: Before proceeding I'd just like to say something. The Brookings Institution and I, myself, personally, take great pride that we are a forum, whatever the subject matter that's being discussed, that all views should have an opportunity to be heard. We do not by any endorsement of any panel we have necessarily support or reject the views of our guest speakers, but we would hope that common courtesy would allow all people to submit legitimate questions on either side of this debate to us and we will try to get them aired in the remaining time.

Let me ask the next question. The questioner says, "I understand you are one of three premiers working on a Canadian Energy Strategy. Could you talk about what that might be? And how would this strategy best dovetail with what might be done in the United States?"

MS. REDFORD: Thanks. Well, it's interesting because, of course, in

Canada we have a different jurisdiction with respect to energy than in the United States. In Canada, each of our provinces has jurisdiction over energy. And so for us to come together as premiers to talk about energy is very important because, of course, as I've said before, I don't think that any jurisdiction can live in isolation when it comes to integrating an energy economy.

So about two years ago a lot of people, and I think some of the first meetings actually took place in Winnipeg, which is the ambassador's capital city and the city that he was formerly the premier of, where people came together to talk about what we were each doing in our provinces around a number of issues. Things like environmental sustainability, the green grid, how we work with hydro, how we develop our conventional resources, whether we can share technologies or research, and how we would deal with issues around environmental impact, so that we came together to develop what we think will be concrete examples of how to do a better job in connecting and partnering on energy.

For example, the premier of Saskatchewan and I are in very preliminary discussions with respect to how to create investment incentives that would allow for some very large industry players to come in and invest again in commercially viable carbon capture and storage projects. So that's important not only in terms of economic growth but in terms of what we want to do in terms of creating a greener economy.

But the challenge, I guess, in the United States from what I've seen, and I attend Western governors' Association meetings, is that of course, energy is more of a federal issue, a federal jurisdiction, than it is for states to deal with. But what I'm seeing from the Western Governors that I've talked to is a real drive towards wanting to have the same conversation and to try to have the same sorts of opportunities for policy

development. So I think regardless of who actually has jurisdiction over the resources, you've got to have both our federal government, your federal government, and also state or provincial jurisdictions at the table to talk about how to connect these pieces in a way that makes sense for people in our communities.

MR. YERGIN: As Charlie has said, Brookings is about reasoned discussion and debate and exchange of views and sharing and different perspectives with the emphasis on the word "reasoned," but within that context you laid out what I think to a lot of people here was not really well known. Not just the carbon tax but the extent of the rigor of the environmental regulation. Let's call it that word that exists in Alberta. Does that seem to you strange that that's not been part of -- does not seem to have been much part of the discussion on this topic?

MS. REDFORD: Well, you know, as we've seen, people get very emotional about these issues because they're very close to people's hearts. And usually when that happens we end up sort of reverting to the most simple information that we have. And so sometimes -- I remember once when I got involved in politics very early on someone who was helping me get ready for a debate told me that when you're asked a question you're never supposed to start answering it by saying, "Well, that's a complicated issue." But this is a complicated issue. And so all of the things --

(Laughter)

MR. YERGIN: Well, you didn't start -- we were already pretty far into it so it's okay.

MS. REDFORD: But all of the things that we're doing are part of what we have to do in order to make the economy grow and to make sure that people have jobs and to make sure that we're developing it in an environmentally sustainable way.

Even the woman who left who said green jobs are important, they are important. And in Alberta we are using our technology fund to develop alternatives and renewable and to work on wind and to work on solar. And frankly, even carbon capture and storage is money that's been invested by our province to try to find better solutions around these issues. So we are doing that, and they are all interconnected. And so we have to just keep using every opportunity that we have to talk about these issues.

MR. EBINGER: We have a question which asks beyond the impact on the U.S. and Canada, what is at stake for the rest of the world with respect to Keystone Pipeline and the oil sands development more generally?

MS. REDFORD: Well, I think one of the things we're talking about here is what the impact can be and will be on environmental sustainability. It's also about pretty important economic growth. I think that as North American citizens that we're very fortunate to live where we live; that we have obligations as leaders in the world to demonstrate that we can be thoughtful and forward-thinking on these issues. I also think that it's important in terms of our overall economic performance in the world. If you look at the contribution that we make as global citizens to other countries and the important roles that we play in diplomatic relations at the G-8 or the G-20, it's important for us to ensure that we have a growing and a thriving economy so that we can continue to play that role in the world. So that's a little esoteric, but it is a responsibility in terms of who we are as global citizens.

MR. YERGIN: The pipeline would carry not only Canadian oil sands; it would also pick up oil from the Bakken formation in the North Central United States where there's been such great growth. Do you have a dialogue with the governors from those states about this?

MS. REDFORD: Many of us do on different levels. I know Cal Dallas is here. He's our Minister of Intergovernmental Affairs and he spends more time traveling along the border than I do. But we are always involved in those discussions.

I was down here last time I guess about two months ago, a month and a half ago for Western Governors, and we had an opportunity to speak to most of those governors along the border in terms of not only Keystone but also in terms of pipelines to the east. I think there's a real sense of appreciation that that is a pretty notional border in terms of economic infrastructure, and so in some ways that north-south dialogue has probably been more predominant than even the east-west dialogue for some time.

MR. EBINGER: We have a question. I'll try to paraphrase it because it's a bit long, but I think it's essentially asking within the whole production of oil sands and the transport of oil sands and the refining of oil sands, do we have any estimates of kind of what most has contributed to climate change by those various processes?

MS. REDFORD: Well, we're starting to do some very good work on that, and it's an important question, and it's part of where the dialogue needs to go. It's one of the things that we've done in Alberta, and actually, the State Department's report referred to it -- is we've started to do work in Alberta with respect to integrated land use planning, which means that we're taking a global perspective on what's happening around impact on water, on land, and on air in the entire production region, which I talked about in my comments.

But, you know, if we look at sort of construction of projects along the path of the pipeline, I think that we need to ask those questions in the context of what regular industrial activity looks like. Again, it will have an impact. There's no doubt, but it's an impact that I think is far exceeded by the economic opportunities that we see in the long

run.

MR. YERGIN: I have a long question here that I'll just read the last line. I think you answered it in your speech, but how can Canada develop the tar sands and combat climate change at the same time?

MS. REDFORD: We are. We have addressed emissions. We're continuing to address emissions. We've set ambitious targets. We've put in place technology funds, a price on carbon. As I said, integrated land use planning. We're investing in carbon capture and storage to make sure that we are taking this matter very seriously. We are not only able to achieve it; we are taking action to do that. And we hope that other jurisdictions will do the same.

MR. EBINGER: You may not feel comfortable answering this because they may be confidential conversations, but we have a question saying "on your visit here and in your conversations with American officials, what do you hear are the remaining reasons for continued delay about making an assessment one way or the other on the pipeline?"

MS. REDFORD: Well, you know, we know that there's a regulatory process in place in the United States, and citizens are taking it seriously, governments are taking it seriously, and we're taking it seriously. And so we're here to have this kind of a dialogue, to make sure that the information is available. Quite honestly, from my perspective I don't sit down and have that sort of a detailed back and forth on those issues with the political representative that we're talking to because at the end of the day as I said, fundamentally this has to be a decision that's made by citizens of the United States and their elected officials. So from my perspective, I think it's very much around making sure that the process is respected, that voices are heard, and that all steps are

taken so that when this decision is made people can be satisfied with it one way or the other.

MR. YERGIN: Charlie, that's my questions.

MR. EBINGER: I think we've answered all the cards that have been given to us. I want to thank Premier Redford for her frank discussion with us today and for the good questions from the audience. And thank you all very much for coming.

MR. YERGIN: One more thing.

MR. EBINGER: One more thing. Right.

MR. YERGIN: Two more things actually. First, I don't know if you want any final words or if you've said everything you want to say today.

MS. REDFORD: I've enjoyed it. Thank you very much.

MR. YERGIN: Good. And I think the second thing is to ask all of you to remain seated while the premier leaves.

MR. EBINGER: While the premier exits, if you will remain seated for a few minutes.

(Applause)

* * * * *

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