



Legislative Assembly of Alberta

The 28th Legislature
First Session

Standing Committee
on
Resource Stewardship

Hydroelectric Energy Production
in Northern Alberta
Stakeholder Presentations

Monday, November 19, 2012
6:15 p.m.

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First Session**

Standing Committee on Resource Stewardship

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Rowe, Bruce, Olds-Didsbury-Three Hills (W), Deputy Chair
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Calahasen, Pearl, Lesser Slave Lake (PC)
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Standing Committee on Resource Stewardship

Participants

ATCO Group	RS-43
Siegfried Kiefer, Chief Operating Officer, Energy and Utilities	
Doug Tenney, Vice-president, Hydro Development	
TransCanada Corporation	RS-43
Geoff Murray, Vice-president, Western Power Growth	
Alex Pourbaix, President, Energy and Oil Pipelines	

6:15 p.m.

Monday, November 19, 2012

[Ms Kennedy-Glans in the chair]

The Chair: Okay. Let me welcome everyone this evening and thank our guests from ATCO and TransCanada for being here. It's very meaningful to us that you are here, and we're very grateful that you would have made the effort and brought such solid teams. Again, our sincere thanks.

I'm going to ask everybody just to go around the room and introduce themselves for the record very quickly. I'll start here with my vice-chair.

Mr. Rowe: I'm Bruce Rowe, MLA for Olds-Didsbury-Three Hills and deputy chair of this committee.

Mr. Hehr: Kent Hehr, MLA, Calgary-Buffalo.

Mr. Fraser: Rick Fraser, Calgary-South East.

Ms Calahasen: Pearl Calahasen, Lesser Slave Lake.

Ms Kubinec: Maureen Kubinec, Barrhead-Morinville-Westlock.

Mr. Bilous: Good evening. Deron Bilous, Edmonton-Beverly-Clareview.

Mr. Stier: Pat Stier, Livingstone-Macleod.

Mr. Webber: Hi. Len Webber, Calgary-Foothills.

Mr. Casey: Ron Casey, Banff-Cochrane.

Mr. Anglin: Joe Anglin, Rimbey-Rocky Mountain House-Sundre.

Mr. Hale: Jason Hale, Strathmore-Brooks.

Mr. Tenney: Doug Tenney with ATCO Group.

Mr. Kiefer: Siegfried Kiefer with ATCO.

Mr. Pourbaix: Alex Pourbaix with TransCanada.

Mr. Murray: Geoff Murray with TransCanada.

Mr. Barnes: Drew Barnes, MLA for Cypress-Medicine Hat.

Ms L. Johnson: Linda Johnson, Calgary-Glenmore.

Mr. Rodney: Dave Rodney, MLA for Calgary-Lougheed and Wellness minister. Welcome.

Mr. Cao: Wayne Cao, MLA for Calgary-Fort.

Ms Fenske: Jacquie Fenske, Fort Saskatchewan-Vegreville.

Dr. Massolin: Good evening. Philip Massolin, manager of research services.

Mrs. Leskiw: Genia Leskiw, Bonnyville-Cold Lake.

Mr. Sandhu: Good evening. Peter Sandhu, MLA, Edmonton-Manning.

Dr. Brown: Neil Brown, Calgary-Mackay-Nose Hill.

Mrs. Sawchuk: Karen Sawchuk, committee clerk.

The Chair: Ken Lemke, we have you on the phone. Is that right?

Mr. Lemke: Thank you very much, Donna.

Good evening, everyone. Ken Lemke, Stony Plain.

The Chair: Thank you.

Okay. Would someone like to move that the agenda for this evening's meeting be adopted as circulated? Peter Sandhu. All in favour? Any objections? It's carried.

The next thing we have to do is approve the minutes from the November 5 meeting. Can someone move that those be approved? Great. Thank you, Mr. Fraser. Moved that the minutes of the November 5 meeting of the Standing Committee on Resource Stewardship be adopted. All in favour? Anybody opposed? Again carried.

The most important part of our meeting is your presentation, gentlemen. As suggested, we'll start with ATCO Group and ask that you take 10 minutes to share the most salient parts. We have looked at the proposal. We have looked at a lot of background information, so I think you've got a fairly knowledgeable team here. Just point out the highlights, and then we will turn it over to the TransCanada team for a similar 10-minute presentation.

After that, just to get everybody primed, we will be starting with the Wildrose caucus with five minutes of questions. I understand, Mr. Anglin, that you will be speaking for the Wildrose caucus.

Then we will have the Progressive Conservative caucus speaking. We will have to sort that out because we've got a lot of people, but we'll figure that one out.

Then we will have the Liberal caucus. Kent, you're going to speak for the Liberal caucus.

Mr. Hehr: I'll figure something out.

The Chair: Then Mr. Bilous for the NDP caucus. Then we'll come back to the Wildrose, back to the PC. Let's see how much we can get in.

The last comment is a reminder that any questions we don't get to in tonight's meeting can be read into the record, and there can be follow-up. So if there is a question that you don't get to ask that you would like an answer to, please jot it down and provide it to Karen and myself at the end of the meeting.

Over to ATCO.

ATCO Group TransCanada Corporation

Mr. Kiefer: Well, good evening. Thank you, Donna, and thank you, committee members, for taking the time to hear what we have to say about hydro development here in Alberta. If I could start by offering Nancy Southern's regrets. She, unfortunately, became ill over the weekend. She wanted to be here to present to this committee but has sent myself and my colleague Doug Tenney, our vice-president of hydro development, to represent ATCO.

If I could turn your attention, there are two documents from ATCO that you have in front of you. One is a PowerPoint slide, which I intend to kind of review with you this evening. The other is a bit more of a prose on landscape form here. It's really just a little more detail around the points we want to make today. We thought it best if you had a bit of a take-away to remember, and that way you don't have to write feverishly what we're going to talk about and, rather, can pay attention and ask us your questions.

With that in mind, on page 2 of your PowerPoint our agenda tonight is really to just quickly go through the demand for power here in the province and give you some background why we believe hydro is a practical solution to the needs in this province, review at a high level the potential projects that we've been

looking at, talk about the economics of hydro, the benefits of hydro, and what we need to do together to try to make these projects come to fruition.

On page 3 what you see in front of you is the AESO's forecast for energy demand here in the province. You can see that it grows quite dramatically between now and 2030. There are a couple of salient points in there. One, the growth that's in there is 2 and a half per cent, 2 to 3 per cent growth per annum in terms of electricity demand. The only correlation that we have that is pretty much almost 100 per cent is that as your economy grows, your demand for electricity grows. That's true in almost every developed country that we can find the measurement for. So we take some confidence that the trend is correct provided we think the Alberta economy is going to continue to grow at the pace that it's growing today.

The other point I'd make to you is that the orange bar at the bottom of that graph really reflects the amount of that energy supply that's coming from coal-fired generation in this province. Today coal-fired generation makes up a good deal of the baseload of the province. As most of you are probably aware, the federal government has introduced greenhouse gas regulation that will see those plants having to perform on an emission basis as good as natural gas or be shut down by their age of 50. That's creating the big gap that you see at the far end on the right-hand side.

Now, that demand for electricity is coming from all quadrants of the province, not just one. The bulk of it is concentrated in the northeast quadrant of the province due to that heavy industrial load and focus that occurs both at Fort McMurray and at Fort Saskatchewan, but there are projects spread throughout the province that are bringing on demand. We've listed for you 12 of our larger new industrial load requirements that are coming on in the province. As you can see, they're spread throughout the ATCO electric service territory; they're not just concentrated in any one area.

Why is hydro a solution to that demand for electricity? Well, firstly, it's a long-term renewable source of power. It has zero emissions from its fuel. The reason it's long term is that as long as, I think, we walk on this planet, water is going to run downhill. So I'm pretty confident the technology will work for as long as we need it to work. The fact that it has a small footprint is important, but the other important aspect of hydro is that it is a baseload form of energy. There are lots of renewable forms of energy that can provide energy to the grid. Not very many of them are baseload. Wind only powers when the wind is blowing, solar only when the sun is shining. Nuclear is probably the lowest emitting baseloadable power, but it comes with its own environmental issues and refurbishment issues.

On page 6 you'll see just a quick snapshot of some of the hydro potential here in the province. In Alberta we have three major rivers that are yet to be tapped for hydroelectricity: the Slave River, the Athabasca River, and the Peace River. Those three rivers and that basin that runs out through the northeast quadrant of the province really account for 75 to 80 per cent of the water that leaves Alberta through that northeast quadrant and the Slave River. That's why we've put focus on projects in the Athabasca and the Slave.

On page 7 you'll see our view of a green energy corridor. That really is a view that would see Alberta take advantage of all of its generating capacity from north to south, hydro being concentrated in the northeast, but cogeneration really being concentrated where our heavy industrial projects are, Fort McMurray and Fort Saskatchewan, and wind to the south of the province. So we believe a north-south corridor to move that energy to where it's needed in the province is an important element in the provincial

energy strategy. We believe that's why the province made a commitment to build transmission to where the renewable sources of electricity exist in the province.

I'd like to turn it over to Doug, who's going to just run you quickly through the particulars of the projects we've been looking at.

6:25

Mr. Tenney: Thank you. It's probably quickest just to look at slide 9 that shows you the map of where we have a couple of sites on the Athabasca River. Both of those sites are storage facilities as opposed to run-of-river, and that is that they need a dam to store water to get the necessary head. It's got water flows, but it also needs the head. The two sites represent about 1,200 megawatts. The first site, which we refer to as site 6, is about 765 megawatts, where site 2 is about 580. Both of them have about a 58 per cent capacity factor. There are some other attributes of the Athabasca that come with the storage capability, and that's the water flow management opportunities that come with that. As you will notice, they are both upstream of Fort McMurray, so they certainly could provide some storage and water flow benefits to the oil sands industries as well as to the city of Fort McMurray itself for flooding and some ice jam issues that happen from time to time.

I think we could then flip over to the Slave River site. We've been looking at the Slave River site since about 2006 with TransCanada. We started in 2006; there have been studies on the Slave River for decades. The most recent large-scale study was in the early '80s with the Alberta government looking at it. It switched from then. ATCO and TransCanada are now looking at a run-of-river facility there. There are four sets of rapids with about a 35-metre drop, so it's ideally suited for large-scale. There would be minimal flooding.

It's probably best to flip to slide 11. There would be about 64 square kilometres of reservoir, but that would only result in about 27 square kilometres of new flooding. If you look on that map, the total blue area and the little gold line along the west bank would be 64 square kilometres. The new flooding is 27, and that's the darker blue. What it would do, however, is flood a portion of Smith's Landing First Nation reserve land. That's that gold- or orange-coloured line. That represents about one square kilometre over about a 20-kilometre section of the river, so pretty small in total. The Slave would require significant transmission because it's located a long way from the grid, but that does enable northern hydro development.

Mr. Kiefer: Thanks, Doug.

Turning to page 12, we thought we'd try to give the committee a bit of a view of the cost comparisons of hydro relative to other forms of baseload generation. When we compare it to natural gas, which today would be sort of in the sweet spot of new generation because of the low price of gas, you'll see that hydro comes out at about \$100 a megawatt hour compared to, depending on your assumption of natural gas, a price that could range from close to sort of \$60 up to close to \$90 or \$95 without the price of carbon included. If we include carbon, depending on your assumption of carbon, that would move the bar up.

The important thing to note when you look at these comparisons is that when you build a hydro facility, that facility will produce power for a hundred years. When you build a gas facility, that plant will last about 25 years. So for the same investment you end up with a facility that will last four times as long. The problem with doing all of these cost comparisons is that once you get out beyond 10 or 12 years on a net present value basis, none of that

counts. The numbers really aren't comparable. Hydro is a strategic investment.

If you look at other provinces that have invested in hydro, it just gets more and more competitive. Over time as the facility gets paid for, the capital costs go down. It continues to generate without any fuel cost. When you look at Canada in the lowest cost jurisdictions for electricity, all of them have long-standing hydro facilities backing up a good portion of that generation. That's why we call this a strategic investment here in Alberta.

What does it take to make hydro happen? It really is a lot of technical work, but a big part of it is partnering and having effective relationships with aboriginal peoples in the area that you're undertaking the project. They have a strong vested interest in the land surrounding and the waters flowing through those riverbeds. As a result, you need to develop those relationships both from the government to First Nations and aboriginal peoples and from the project proponents.

Just moving on. What does it take to work with government? I know my friends at TransCanada are going to expand on this point, but we really see three hurdle points that are important. I'm sure we'll get clarity on this, but it's really around regulatory certainty, around a commercial framework that will allow a long-standing, 100-year project to get built and financed, and around federal and provincial support for the aboriginal relationships. We think this is a once-in-a-generation opportunity. Excuse the pun.

With that, I think my time is complete.

The Chair: Thank you very much, gentlemen, and thank you for respecting our time frames.

Over to TransCanada.

Mr. Pourbaix: Thanks, Donna, and thanks to all the committee members for taking the time to hear ATCO and TransCanada give their story. In my presentation I'll just have you flip to slide 2. Siegfried hit a few of the points. I'll try to hit the high points here.

You know, it is very important. A lot of people think of Alberta as a relatively dry region. It is largely a dry region, with incredible hydro resources in the north of the province. As Siegfried said, 80 per cent of the water in this province leaves through the Slave River. If you have not been up to the Slave, I really encourage you to take a trip because it is, truly, an impressive sight.

As Siegfried said, similar projects were studied very extensively in the early '80s. At the time they were looking at a larger plant. It was about 1,800 megawatts, and it had very significant storage associated with it, so there was very significant inundation of the surrounding region. At the time the project didn't go ahead. There were a number of reasons. One of the biggest reasons, though, was that this was an 1,800-megawatt project in a market that – I can't remember – at the time was probably 4,000, 5,000 megawatts. It's almost impossible to integrate a project of that size into a market of this size. Now we're looking at a market that is close to 12,000 megawatts, and by the time this project would be built – I can't remember offhand – it would probably be a 16,000-megawatt market.

If you'd just flip to slide 3, TransCanada and ATCO have been working together on this opportunity since sort of the middle of the last decade. What we really wanted to do originally, as we got started, was to work together with the local communities and try to determine if there was a technical, an environmental, and a stakeholder case for this project to go ahead. After a bunch of work, we looked at a number of different configurations for the facility. There could easily still be some change in this, but right now we've sort of settled on about a 1,200-megawatt run-of-river facility for the time being. As Doug said, one of the benefits of

that is that it does not require a large dam and doesn't create a large deal of inundation.

You've already seen the numbers there. Our numbers are a little bit different from ATCO's. You see that \$3.5 billion to \$5 billion. That's not that we have different views on what this is going to cost. It's just what you add and what you don't add and if you're adding interest during construction and things like that.

If you take a look at slide 4, we did a preliminary feasibility study over about three years. We took a look at the work that had been done in the past, and we did a number of projects on our own at the time. As Siegfried said, it is very clear to all of us that for a project like this to go ahead, we have to have the engagement of the aboriginal communities. One of our first goals was to negotiate a study agreement with the local Smith's Landing band. We also talked to a number of other potentially involved First Nations, and we did a lot of work with the provincial government and the federal government.

Maybe we'll flip over to slide 5. Siegfried talked a little bit about some of the benefits. I'm just going to focus on a couple of them. One point about emissions reduction that I think shouldn't be lost is that 6,000, this number that we talked about for the reduction in greenhouse gas emissions. To give you an idea, that's about 15 per cent of the present-day emissions from the oil sands, of all of the bitumen that is being mined or produced from the oil sands. So we're talking about a very significant greenhouse gas reduction.

6:35

On top of that – and you saw Siegfried's comment about the coal plants retiring – Alberta has been in a very beneficial position for many decades because of this cheap, low-cost, and very reliable coal fleet that we've had. As you saw from that slide, we are getting towards the end of the usable life along with the federal legislation that has been enacted, and Alberta is going to need more baseload generation. One of the really attractive features of hydro is that it's very flexible. It has storage. You can actually to some degree dam water up and let it go intraday when you need it, and it makes it a lot more effective than, for example, other renewables such as solar or wind. It has a lot of flexibility, which is very, very attractive.

I think the other point, which Siegfried touched on and which bears repeating, is that in the event that a project like this were able to go ahead, it would be an extraordinary economic stimulus opportunity for northern Alberta. With this one project, you know, we're talking somewhere in the range of \$5 billion, \$6 billion, \$7 billion. With all of the multiplier effects of that, you'd be talking about \$10 billion or probably more of economic stimulus for northern Alberta and for other Alberta companies, and I think that's something that is really worth considering.

Before I leave off, I wanted to talk a little bit about what we call precursors to successful development. Siegfried also touched on these, and I'll maybe talk a little bit about the challenges and the solution. One of the challenges with hydro facilities is that compared to other baseload power generation like natural gas, right now it takes about 18 to 24 months to permit a natural gas facility, it takes about two and a half years to build that facility, so you can be in service in four or five years from the time you kind of get the notion. This kind of a project probably will take about five to six years to permit and take another five to six years to construct, so we're talking about sort of a 10- to 12-year period from start to finish, and that causes a lot of challenges.

I think we're going to have to look at market design, and potentially anyone who develops this project will have to have some form of revenue security in order to be able to finance that

project and withstand that very, very extensive development and construction period.

I want to talk a little bit about regulatory agencies and the permitting risks. I've met a number of you in this room, but I am also in charge of TransCanada's oil business, so I'm in charge of trying to get Keystone XL permitted. You can see by the scars on my back that it has been a challenge, and I think Siegfried would agree that it is not getting any easier to permit these large-scale energy infrastructure projects. It isn't fatal in the case of hydro, but one of the challenges with hydro is that because it is on a river, it is subject to federal jurisdiction in addition to provincial jurisdiction. In order for a project like this to go forward, there has to be very comprehensive provincial-federal co-operation along with the developers so that we're making sure that we're not repeating the process twice and facing double jeopardy as we go through this process.

Siegfried talked about the First Nations issue. I just think I'd probably want to end on that comment. When we originally looked at this project, as I said, it was very clear to us that we needed and wanted to have significant aboriginal involvement. When we originally proposed this project and we had negotiated this study agreement, the band at that time decided that, you know, they weren't willing to sign. It's important. This wasn't an agreement to decide who gets what and how people participate. This was purely an agreement just to look at what we were going to study in the region: the environmental issues, the ecological issues, and so on and so forth. At the time we were not able to reach agreement with the band in order to proceed. We felt so strongly that we needed aboriginal involvement and support in this project that we felt it was probably not the right time to proceed. Lots has changed even in the two years since that decision was made.

That's sort of my prepared comments. I see I'm close to the end of my time, too.

The Chair: Actually, the timer is just about to go off. That's quite astounding. Thank you. Thank you very much, all of you.

I will open up the floor. Joe, you've got a question or questions, then, from the Wildrose caucus?

Mr. Anglin: I have lots of questions.

The Chair: Yes. We know that, Joe. I like your questions.

Mr. Anglin: Everybody knows that, so I will prewarn you. If you could just keep that in mind, I can get more questions in.

The first question. This is really a private investment that we're looking at. You're not looking to partner with the government. This is a private investment with some sort of secure funding for this private investment. Is that correct?

Mr. Kiefer: Yeah. We're looking at the project as being owned by private enterprise, but we will need commercial arrangements with someone who has the ability to fund a long-term project like this, which typically would be government. The federal government has sort of put their foot in the sand by saying that they're prepared to assist in the debt portion of projects like this. They've helped out at Churchill Falls and on a number of other projects, so we would look for that and, beyond that, some help in getting through the development cycle, which, as Alex mentioned, is a long, five-year kind of term of spending money without a project.

Mr. Anglin: Now, would you agree with me that your chart on the comparison of the various types of produced electricity is a

little bit – I think you mentioned it – distorted because of the length of the life of a hydro dam? The real value is that hydro is actually far more economical when you take in the lifespan of coal and gas.

Mr. Kiefer: Absolutely. But when you do the math with net present values, you don't get any credit for the last 80 years of the life of this thing.

Mr. Anglin: Thank you very much. Now, the green corridor that you showed in your slide. You may or may not be aware, but we are also moving forward with the Redwater upgrader, and there are plans to bring a pipeline down to that upgrader. The proposal is that there be a transportation/utility corridor for that pipeline. Would it make sense, then, that the transmission lines would come down that same corridor parallel to the pipeline?

Mr. Kiefer: We're very much in favour of utility corridors being established early by governments. I think it's strategic to do that. It helps these linear projects proceed with certainty. It also gives the public and the landowners some certainty early on in the process as to what types of facilities are going to go where.

Mr. Anglin: Now, I'm not going to ask you to make a decision on this, but would it make sense that we employ HVDC technology to bring that technology down from the Slave River all the way down south?

Mr. Kiefer: I certainly think that if you're intent on making a main part of your portfolio hydro – in other words, expanding beyond the Slave to try and capitalize on some of those other hydro sites in the Northwest Territories – DC would make a lot more sense than AC. But if all you're going to do is the Slave, then I think either one is a viable option for you.

Mr. Anglin: Okay. The payback initially: now, when I first looked at figures, we were looking at basically a \$60 billion, layered type of investment. It could be higher, or it could be lower. The oil sands has indicated that there's an initial payback if that electricity is brought down to the oil sands for their use. Can you comment on that?

Mr. Kiefer: Well, I think Alex had mentioned whether or not some market reform might be required to bring a project like the Slave on. I think there are a number of ways to come at that framework. What you really need is offtakers, someone who is buying that power long term from you, to be able to take that to the bank and get financing for it.

The oil sands, in my mind, present a very unique situation in Alberta, where they're all long-term investments. These guys are going to be for the next 25 years, 30 years, 50 years extracting that resource. They all require energy to do that extraction. I think a unique proposal may include having oil sands subscribe or be obligated to subscribe a certain amount of their energy consumption to be purchased from renewable baseload facilities. If you did that, it would allow you to get the contractual backstop into the project without necessarily requiring as much government backstop in the purchase.

Mr. Anglin: One last question, if you could comment. When the oil sands were looking at the hydroelectric potential, what they first thought of was that it would free up a certain amount of bitumen that they burn as coke and also natural gas. Have you had a chance to look at those figures or even have an estimate of what

they think they would save that would be another fuel source that they would sell to the market rather than use internally?

Mr. Murray: You know, that's going to be something that we're going to have to take away and think about rather than an off-the-cuff answer for that, I think.

Doug, you wouldn't have anything, would you?

Mr. Anglin: Can I throw a \$48 billion figure to you?

6:45

Mr. Kiefer: Well, certainly, I think it's something worth looking at if you can avoid burning natural gas and sell it as an export product while at the same time having the energy to power your bitumen extraction. And to the extent that you don't use some of that bitumen in the process, I think that should be added to the economics of a hydro facility if it's fuelling oil sands extraction, Joe.

The Chair: Thank you, Mr. Anglin. Good questions.

PC caucus, we're going to start with Pearl Calahasen and then move to Ron Casey.

Ms Calahasen: Thank you very much, Madam Chair. Welcome. I'm really happy to see that you're bringing information to us that I hope will answer some of my questions. I want to start with relationships. Aboriginal involvement was a top priority when you first started and continues to be, I think, from what I gather, and it's for any project to go ahead in the area where it may or could or will impact the lifestyle of First Nations. It'll take a lot of trust to be involved with First Nations, especially Smith's Landing First Nation. My question is: what has been probably the most important step in building trust between your organizations and the aboriginal people in the area? What steps have you taken and what strategies have you got in place to be able to address that issue?

Mr. Kiefer: Doug has been on the front line of this. But just before he gets into the specifics, I think the biggest thing to build trust is time, getting to know the people and what their issues are and what challenges they face and what they're trying to resolve long before you come along with what project you want to impose or have them agree with.

Doug has been on the front line of this for many years now and is probably better qualified to talk to that.

Mr. Tenney: Sure. I agree with Siegfried that time is probably the best. It's such a trade-off. We didn't want to come back with 1982 all over again and say: here's the project. It didn't go so well from a community involvement point of view back then. We wanted to try something different, so we really came with no set project. That created its own challenges. Everybody thought you had a project that you weren't willing to share with them when, really, what we wanted to do, which is exactly what Alex said earlier, was to work with the communities to figure out if there could be something that would be acceptable from an environmental and a socioeconomic perspective as well as an economic perspective from the proponent standpoint.

It's been a real challenge. When we didn't have anything, they assumed there was something that wasn't really there. A lot of the stuff that you see now other than the negotiating committee that we work with is probably somewhat of news to the Smith's Landing First Nation and other communities up there. We didn't say that it was a 1,200-megawatt project at the time. We said we wanted to work together to develop a project.

Mr. Pourbaix: I was just going to say that when I described it as a 1,200-megawatt project – we looked at a number of options – it was very much that it could be configured in whatever way was most attractive to the communities up there. I just sort of used 1,200 as kind of a place mark for it.

I agree with Doug and Siegfried. Time is a big part. The last thing we wanted to do was get involved with the First Nations up in that area and start talking about what their participation would be. That's why we started with this issue of engaging them and trying to come up with an agreement as to the study work that we would do. We thought that would be a good base to build a better relationship on over time

Ms Calahasen: Would the difference between a run-of-river versus a dam kind of situation create more of an opening for the First Nations to see the potential for not only economic possibilities but availability of what could happen in terms of the positive rather than the negative?

Mr. Pourbaix: I'm not sure I – what were you thinking?

Ms Calahasen: Well, a run of river is different than a full dam.

Mr. Pourbaix: Yes.

Ms Calahasen: A dam is where they're always concerned about the potential impact of what could happen to them downstream. Was there any kind of warmth to that kind of an idea versus the full dam situation?

Mr. Pourbaix: I'll let my partner speak on this also. We certainly had some discussions about the various types of structures and how you could do this. I think Doug makes a very good comment. Because the band at the time decided that they didn't want to go even down the path of the study, the band members probably didn't get to see as much of both the risks and the upsides that are associated with the project as we would have liked to have been able to provide them with.

Ms Calahasen: Is that why you call it an uncertain process, in terms of the way that you did it, or is it because of the uncertain process in terms of the duty to consult?

Mr. Pourbaix: In fact, when I said uncertain process here, I was thinking both on the regulatory side but, yes, also on the duty to consult. What is the ultimate process to engage the First Nations was what I was thinking.

Ms Calahasen: Thank you.

The Chair: Thank you.

Mr. Hehr.

Mr. Hehr: Thank you. I've got three questions. The first one. You touched on, basically, the revenue security and some of the deals you made or guarantees you need from government. Do you think you could go into that in a little more detail than you did with Mr. Anglin, toss around some of the numbers – maybe you guys have been spitballing at this point in time – and what type of risk that holds?

The second thing. I'll just get these out of the way.

Mr. Pourbaix: Yeah. Sure.

Mr. Hehr: The second thing is on the transmission line that will be needed to run, I believe, the Slave River. Of course, that cost is covered by the Alberta user. Have you factored those numbers

into those projections that you have on the total cost of the entire project – they're going to have to be taken in somewhere, not by you guys but at least an end user – and what that cost would be to build that transmission line?

The third thing I was reading in the newspaper that ATCO, I think, had difficulties or walked away from a project in B.C., a run-of-river project, because of some issues. I'd like you to, if you could, tell me what those issues were, whether those concerns would be here in Alberta and whether you look at ways of getting around some of those difficulties that, at least, I read in the newspaper this weekend, if I'm referring to the right newspaper article.

Mr. Pourbaix: Why don't I take a shot at the financial security, and you guys can maybe talk to the other two.

On this issue of financial security, you know, your question was: did we have some ideas in mind on level of support? I think it's important that we're not necessarily seeking government support for this or provincial government support. What we're really highlighting is that to make a \$5 billion to \$7 billion investment with 10 years of investment before you start getting a return, it would be very, very difficult to make that on a fully merchant basis, hoping to get your return out of the wholesale power market in Alberta.

You heard Siegfried mention that just one of the ways you could do it is that the companies up in the oil sands could be asked to sign contracts for some portion. You know, potentially you could do that by thinking about contracting obligations for just all Alberta consumers.

So I didn't want to leave anyone with the view that this was sort of coming hat in hand. I think that it is attractive power, but just the economic realities of making such a massive investment in a megaproject – you have to have some certainty of cost recovery over the life of that project in order to do it. That's really, I think, the point that we were making.

I don't know, Sieg, if you . . .

Mr. Kiefer: No. I think that's correct. The way that I would sort of coin it out is that if you look at any large-scale hydro project built to date, it has typically been backstopped in one form or another by a government. So whether it ends up being private at the end of the day, through the construction process it's usually been backstopped or had some financial guarantees by government.

Your second question was around the transmission line. Those numbers we're showing you include the cost of the transmission line to make those generation options truly comparable. That's an all-in number that you're looking at.

Your third point was around ATCO walking away from a run-of-river project. What happened at that particular project was that there was a landslide in the area, and the actual land formations around where the penstock and the generation facility were going to be built were not stable enough to support a project there. So that's why we gave up our spot in the queue for that project.

Mr. Hehr: Have I still got time?

The Chair: You've got another minute.

Mr. Hehr: Okay. How much money are you boys going to be making out of this over the course of a hundred years?

Mr. Pourbaix: You know, we fully expect we would make a competitive return on this project given the risks that are inherent. At this point, so early in the process, it's really tough to even kind

of come up with a calculation as to what that would be because it would really depend on how much risk rests with the developers.

The Chair: That was a tough question.

Mr. Bilous.

6:55

Mr. Bilous: Thank you very much, Madam Chair. Thank you, gentlemen and your staff, for coming. I, too, have three questions. We're talking about a competitive return, which is a fair answer. Now, you answered a question earlier as far as being a private investment looking for some kind of public funding or alternative forms of funding. Would you consider either some kind of arrangement with government or a partnership or some sort of sharing as far as that competitive return goes?

Mr. Kiefer: I think that at this point we're quite open to any suggestion that solves the problem, which is really about how you get enough capital to build a strategic asset for the province that will last a hundred years. I don't think we've closed the door on any particular model. Our eyes are open to any form of suggestion that helps conquer that issue.

Mr. Bilous: Okay. The next question is just to follow up on what one of my colleagues had asked. Now, your documents are all focusing on First Nations, and I can appreciate that; that is on Slave Lake, the one band that's primary as far as reserve lands. What consultation has already existed not only with First Nations but also Métis and Inuit groups that will be affected, whether or not directly, from the dam, where it's built but also looking at long-term impacts further downriver?

Mr. Kiefer: We've had preliminary discussions with all aboriginal peoples along. I think we actually focused on using the term "aboriginal" rather than "First Nations" in our documentation with you because I think it is important that we have our discussions with all those people affected both downstream at the site as well as along the route of the transmission line, which traverses a good part of lands that are very important to many aboriginal people. So we've had consultations both along the transmission route downstream of the facility and, of course, with Smith's Landing to a limited extent in order to make this go forward.

You know, I think you're going to have to treat the project quite holistically in terms of its total impacts across all those people. They're different, and that's always a bit of a challenge in terms of how you look at impacts and how you compensate for those impacts when the impacts are different depending upon where you reside relative to the project. There's a lot of work to be done there yet in order to get to something that works for everyone.

Mr. Bilous: I have a couple of minutes?

The Chair: You do.

Mr. Bilous: Speaking of impacts, as well I'm assuming that your companies are looking at environmental impacts and, again, at these different stages, if you will, from site to downriver. Where in the process would this information start to come online? I mean, I know that you've done some in the past but as far as looking at, again, a shifting landscape, today's reality.

Mr. Pourbaix: Were this project to proceed through the development phase, there would be an extraordinarily detailed environmental review process that this project would participate in. That information would start being generated through the

development and the permitting process. When I said that there would be five or six years of permitting, that would kick off with a one- to two-year process of environmental studies, analyses, and impact studies, and all of that information would become available as we went through the permitting process.

Mr. Bilous: Okay. My last question is very short. You may have answered this already. Forgive me if you have. This dam project: the intention is to hook into the Alberta grid, that it's not being contemplated as just a source for power export. Is that correct?

Mr. Kiefer: Without connecting into the grid, I don't know if there is any load to use the power. So we would be connecting into the Alberta grid, probably at Fort McMurray, which is both a load and a generating centre here in the province, which then connects down through lines that are yet to be built, actually, some extra lines that are being looked at right now that would connect Fort McMurray to the heartland area here in Alberta.

Mr. Pourbaix: I get where you're going with your question: is this project intended for export? What I would say is that the Alberta market, as you heard Siegfried talk about, is one of the fastest growing power generation markets in all of North America. Although you could see a scenario where from time to time power is exported from Alberta, as it is today, I think the focus of all of us at this table would be looking at serving that very, very robust and growing load in the province.

Mr. Bilous: Thank you.

The Chair: Thank you.

We'll turn it back to the Wildrose caucus. I think Mr. Rowe is going to start, and if anybody else from the Wildrose caucus wants to follow him.

Mr. Rowe: Yeah. I'll just ask the first question, and then I'm sure one of my Wildrose colleagues will jump in.

To TransCanada: under your challenges, regulatory, you've got water rights. Could you just expand on what the challenges around water rights would be?

Mr. Pourbaix: I think the issue with water rights is that – and I kind of referred to this very long permitting and regulatory process – the way it works, as I understand it, in Alberta is that until you actually get through the regulatory process and get your permits, the developers do not own a water right in the project. From my perspective, that is the challenge. It will cost several hundred million dollars to go through the permitting process, and that is a concern for a developer, to go all the way through that process, expend that very significant amount of capital without even understanding: would you have the water rights at the end of it? That's just, really, the process idea.

I don't know if you had anything to add.

Mr. Kiefer: I think the only other comment I would make is that Alberta has yet to conclude its transboundary water agreements with the Northwest Territories and with British Columbia. As a result there's some uncertainty in terms of the implications of starting to place any kind of hydro or water flow control facility on any of the waterways that flow into the Northwest Territories and uncertainty that we're going to continue to receive the water flow at the right rate out of British Columbia. Those are very important elements in the steps towards relying more on hydro in this province, to make sure our source for the water and the exit for the water permit us to undertake these projects.

Mr. Rowe: Thank you.

The Chair: Mr. Anglin, we've got three more minutes here.

Mr. Anglin: I'm just going to make a comment, and I'm hoping you'll comment on it. You mentioned this a little bit, but I want you to reinforce it maybe if you could. This is really not something we're talking about that's an option. We need generation going forward to replace the generation that's going to be retiring, plus for our economic growth. Is that correct?

The second thing is that on that generation we have a choice here. What type of generation are we going to be looking for? We could be a single fuel source generator, which is gas, or we're going to be developing combined cycle gasification of coal, which is highly costly maintenance-wise, and then of course you're looking at nuclear. I'd just like you to expand upon the necessity of the fact that we've got to have some sort of generation plan going forward.

Mr. Pourbaix: Sure. As you saw in Siegfried's graph, our existing baseload generation is falling, really, off a cliff over the next 10 or 15 years, and on top of that, you have this never-ending 3 per cent per year increase in demand. So you're absolutely correct. One way or another Alberta is going to embark on a massive building of new generation. This province is already a leader in terms of renewables, but renewables have the limitations that I think everyone is aware of. You're not going to replace 6,000 megawatts or 5,000 megawatts of coal-fired generation with wind that's operating at a 32 per cent capacity factor.

I just want to make one other comment that Siegfried touched on. We do a lot of business in Quebec and Ontario, and every day I see the benefits that those provinces have gained by making these very long-dated strategic investments in hydro. Now, 30 years and 40 years after they made those investments, it's given them incredible competitive advantages in attracting and retaining industry in those provinces. It does take a bit of a strategic leap of faith, but if you're able to look at this in the long term, I mean, the benefits from hydro are just extraordinary.

7:05

Mr. Anglin: I would say that it's not faith. It's actually been proven.

Mr. Pourbaix: Absolutely. There's nothing unique about this technology.

Mr. Anglin: Okay. Thanks.

The Chair: All right. Then I'll turn it over to Mr. Casey for the PC caucus.

Mr. Casey: I just had a couple of quick ones here. One of the problems that Fort McMurray has faced all along with their environmental concerns around the Athabasca River is a lack of baseline data. Five to six years, while that's a nice number, isn't really much time if you're looking at trying to establish that baseline information that's so critical if you're trying to look at impacts down the road and determine if there are impacts. Has there been any work done on these rivers at this point? If not, I guess the question would be: why not? Five to six years isn't going to be enough time to get any kind of data that's scientifically credible enough to use, at least not to the environmental groups.

Mr. Kiefer: I would say that there is a certain amount of baseline data being collected on these rivers but not for the purposes of

evaluating the impact of a hydro facility. Therein lies a bit of the dilemma in terms of where you go from here. You need to kind of find a way to take what we do know and have established and then augment it with information that you can study in two or three years as to the implications of altering the flow or the flow rate over a period of time, and there will be some conjecture that needs to be put to that. That's why the permitting process takes so long, because quite often you can't get to where you have absolute certainty on every factor and every potential impact.

Mr. Casey: If I might, Madam Chair, just one other quick one here. This one is 1,200 megawatts. What we need is seven to eight times that. If it's going to be a major challenge to get the funding in place for this one and we need seven to eight of these in a row by 2033 according to your graphs to make this a solution for Alberta – otherwise, it ends up being a very small proportion of the solution – what is the long-term solution in this? Where do you see your role in providing that long-term solution, which is in that 10,000- to 12,000-megawatt potential?

Mr. Pourbaix: You know, I would say that when you look at it on the graph, maybe it looks like a relatively small part, but I can assure you that a \$5 billion project is very big to our two companies. I think it is an issue that a lot of people don't consider in Alberta. We do have a looming generation issue, and it is very, very significant. Tens of billions of dollars will be spent to solve this problem. The nice thing about this and, I think, one of the reasons why it's easy to focus on this is that it is pretty unique. It's emissions free. If we had six more rivers that had these characteristics and Alberta could be completely emissions free in their generation, that would be great. But I think this is a good start, and Alberta has lots of other resources: gas, coal with greenhouse gas remediation. You're correct. It's just going to be one part of it.

Mr. Kiefer: If I could just add to that, I think it's also terribly important that we don't squander any of the sites we do have. When you look at hydro potential in any one of these rivers, it's important that we optimize the resource with any facility that we put in place. You know, we have an example of that right now on the Peace River, where there's a current project proposed that's only 150 megawatts. That river has a potential of well over 1,000 megawatts, but that little 150-megawatt project will prevent that larger project from ever going ahead. So in that whole permitting process it's important to look at making sure we optimize the resource. If we're going to disrupt the flow of the river, let's get every bit of electricity out of it that we can.

The Chair: Mr. Fraser, we've got one minute left.

Mr. Fraser: Yeah, really quickly. You don't have to convince me. I think hydro is awesome. I think it's the way to go. However, have you guys factored in any of the studies around underground coal gasification, what's happening in places like South Africa? It sounds like they're making headway, but as the cost comes down, environmental impact and those studies – I mean, as we move along and we see our surface coal diminish, what's the potential there? Does it alleviate some of these issues? Obviously, we've got lots of coal too deep to mine, but underground coal gasification answers that. Has that been factored into these studies of what we need long term?

Mr. Pourbaix: Yeah. Our company and, I'm sure, ATCO also have looked at a lot of these technologies. You know, my general view, whether it's sort of in situ gasification of coal, whether it's gasification of pet coke, some of these other alternatives that you've seen, is that I think they're all very interesting technologies. I think they share a number of characteristics. The first one is that right now none of them are practical on what I would call an industrial-scale basis. They remain very, very expensive. Most of the projects that you're seeing doing this are more kind of pilot projects. I think there's lots of opportunity. The challenge is that Alberta needs new generation sources in the relatively near future. I would say that in that kind of 15- to 25-year period I'd hope to see a lot of those technologies reach commercial viability, but there's still a ways to go on most of those technologies.

The Chair: I'm going to have to close it, folks, in terms of the presentation. Excellent, excellent presentations. Absolutely what this committee needed. Thank you.

To wrap it up, if anyone has a written question, please provide it to Mrs. Sawchuk, and she will read it into the record.

There is a working group meeting this week. We will come back to the committee with recommendations for other presenters and for the idea of travel in February.

To confirm the next meetings: next Monday, November 26, TransAlta; December 3, the Environmental Law Centre; December 13, Manitoba Hydro.

Anything else from anybody? Okay. We're actually out of here early.

Thank you, gentlemen.

[The committee adjourned at 7:12 p.m.]

