



Legislative Assembly of Alberta

The 28th Legislature
First Session

Standing Committee
on
Resource Stewardship

Natural Gas Production
Stakeholder Presentation

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Standing Committee on Resource Stewardship

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Standing Committee on Resource Stewardship

Participant

Canadian Energy Research InstituteRS-400
Peter Howard, President and CEO

3:32 p.m.

Tuesday, September 10, 2013

[Ms Kennedy-Glans in the chair]

The Chair: All right, folks. I think I'm going to call this meeting to order. I would like to welcome everyone. I think the last time we met was the middle of summer. As you know, my name is Donna Kennedy-Glans. I'm chair of this committee and MLA for Calgary-Varsity.

I think we have six people connecting online today, so I'm going to start with the people who are physically here in the room. I'll start with Ms Johnson, and we'll go around the table. Introduce yourself, please. If you're substituting, please let us know who you're substituting for.

Ms L. Johnson: Good afternoon. Linda Johnson, MLA for Calgary-Glenmore.

Mr. Khan: Good afternoon. Stephen Khan, MLA, St. Albert.

Mr. Dorward: My name is David Dorward, and I'm the MLA for Edmonton-Gold Bar, substituting for MLA Mike Allen.

Mr. Casey: Ron Casey, MLA, Banff-Cochrane.

Ms Fenske: Hello. Jacque Fenske, MLA, Fort Saskatchewan-Vegreville.

Ms Zhang: Good afternoon. Nancy Zhang, legislative research officer.

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

Ms Dean: Good afternoon. Shannon Dean, Senior Parliamentary Counsel and director of House services.

Ms Kubinec: Good afternoon. Maureen Kubinec, Barrhead-Morinville-Westlock MLA.

Mr. Bilous: Good afternoon. Deron Bilous, MLA for Edmonton-Beverly-Clareview.

Mr. Tyrell: I'm Chris Tyrell, your committee clerk.

The Chair: All right. For the gentlemen who are on the phone, I'll just read your name, and if you're there, just confirm. Mr. Anglin.

Mr. Anglin: I'm here. Confirmed.

The Chair: All right. Mr. Lemke.

Mr. Lemke: Here.

The Chair: Mr. Barnes.

Mr. Barnes: Yes.

The Chair: Mr. Bikman.

Mr. Bikman: Yes.

The Chair: Mr. McDonald, substituting for Mr. Webber.

Mr. McDonald: I'm here. Thank you.

The Chair: And Mr. Hale.

Mr. Hale: Yes, I'm here.

The Chair: Okay. Thanks, everyone. Because your voices sound so similar on the phone, you'll have to make sure when you want to speak that if I'm not paying enough attention, you just yell out and say who you are.

We have one more person who has just arrived.

Ms Calahasen: Pearl Calahasen, Lesser Slave Lake.

The Chair: Okay. Just to remind you – I think everyone is familiar with this – that the *Hansard* staff would be happy if we remembered that the mikes are operated by them, not by us. Keep your cellphone below the table. All of these proceedings are streamed live on the Internet and recorded by *Hansard*. Apparently there are people who listen, so that's quite wonderful.

Mr. Sandhu has just arrived, and I'd love it if he would introduce himself as well.

Mr. Sandhu: Good afternoon. Peter Sandhu, MLA, Edmonton-Manning. Thank you.

The Chair: All right. Thank you.

Everybody has had a chance to look over the agenda. Would someone like to move that the agenda for the September 10, 2013, meeting of the Standing Committee on Resource Stewardship be adopted as circulated?

Ms L. Johnson: So moved.

The Chair: Thank you, Ms Johnson. All right. All in favour? Any objections? Carried.

Okay. Everyone has also had a chance to look at the minutes that our clerk posted. Are there any corrections to note?

Mr. Barnes: Madam Chair, I have a correction.

The Chair: Sure.

Mr. Barnes: On the committee members in attendance, third from the bottom, Rick Strankman actually was substituting for me and not for Jason Hale.

The Chair: Oh, thank you. Yes. We'll make note of that change.

Okay. Any other changes?

All right. If not, would somebody move that the minutes of the July 23, 2013, meeting of the Standing Committee on Resource Stewardship be adopted as revised?

Ms Kubinec: So moved.

The Chair: All in favour? Any objections? Is everybody on the phone happy? Okay. Carried.

Ms Blakeman, welcome. Would you like to introduce yourself?

Ms Blakeman: Thank you. My name is Laurie Blakeman. I'd like to welcome each and every one of you to my fabulous constituency of Edmonton-Centre.

Ms Calahasen: You're late like I was.

Ms Blakeman: Yeah. I'm perennially late at this point. Thank you.

The Chair: Well, we're glad to see you. If you could hold the weather in this constituency, we would be really happy with that, Ms Blakeman.

Ms Blakeman: I'll work on that. Thanks.

The Chair: All right. Actually, have we got everybody here? Good show, you guys. This is really fantastic, a full committee meeting here.

We have a presenter today, Mr. Peter Howard, who is with the Canadian Energy Research Institute. We welcome you to our table, Mr. Howard.

As you can tell from the research that was conducted by Dr. Massolin and Ms Zhang, there is an awful lot to say about natural gas in the province of Alberta. Just to frame the issues, we thought we would invite somebody to the table who could give us a really big, wide frame. We have shared with Mr. Howard the scope of work as it is presently being explored, and we just invite Mr. Howard to speak generally for about 20 minutes on gas in the province of Alberta and our quest to try to elevate the discussion and look at the possibilities of how to monetize that natural gas.

Mr. Howard, I know you've got a presentation, and we'll have about 10 minutes afterwards for questions. I welcome you and really thank you for taking the time to be here.

Canadian Energy Research Institute

Mr. Howard: Thank you very much for the invitation. It's my pleasure to be here. I'm going to be talking about natural gas. I must admit up front that I won't be able to address all of the questions that were listed on your memo there, but I think I'll be able to address some of them.

In order to talk about natural gas, especially in Alberta, you have to start in North America. What I hope to do is give you an idea of what's going on in North America, bring it back to what's going on in Alberta, and bring it back to where Alberta could possibly move with regard to natural gas production.

Before I get into that, this is a quick introduction of who CERI is. The one point I'd like to make is that CERI is a fully funded institute, and the government of Alberta is one of those funders, so thank you to the government for that. In exchange for that funding all of the research that CERI does is made public through our website at www.ceri.ca. I will make mention of several reports that are available on that website should you choose to go and read them or enjoy them on a Sunday afternoon when it's raining like it was this past Sunday.

Here are some examples of some of the reports I'll be referring to. The very first one is called Global LNG: Now, Never, or Later? That will make more sense a little later. Basically, what it does is that it talks about LNG in the Pacific basin. The middle one there is just some work that we did with regard to the potential economic impacts of developing shale gas in Quebec. Then the bottom one is where a lot of my comments are drafted from. It's called North American Natural Gas Pathways. This was just released about 10 days ago. That report is available on our website also.

Very simply put, where do we sit in North America? Too much gas and not enough demand. Guess what? Prices fall. In order to kind of encapsulate this, really what we have going on is basically a tale of two countries. Alberta at one time drilled close to 16,000 gas wells, back in 2006. In 2012 that has dropped to 1,187. In 2013 we will be very lucky if we can break the 1,000 wells mark.

3:40

In competition to that is the Marcellus, which is the largest shale gas deposit in North America, which sits in West Virginia. That particular resource in 2005 was less than 2 billion cubic feet a day. Currently it is approaching the 8 billion cubic feet a day

level, on its way up to anywhere from 16 billion to 23 billion cubic feet. That's the potential.

This is what Alberta looked like in 2008. This is what it looks like this year. So these are the current licences right up to the end of August of this year. You can see that we have now narrowed down the focus with regard to our drilling exercises. I realize the map in the background is very difficult to read. Basically, the Montney formation straddles both British Columbia and Alberta. Inside Alberta you've probably heard mention of the Duvernay, the Wilrich, the Notikewin, the Glauconitic, the Milk River, and Medicine Hat. These are resources that are currently being drilled, and they are being drilled because of the liquids content in those resources.

Why liquids? Here's a very simple example. The B.C. Montney as we sit here today is the most cost-effective resource in Canada. On a very simple basis to drill a horizontal well, the supply cost, which is the full life cycle supply cost, would be about \$3.80. What that means is that, basically, B.C. and a lot of Alberta wells would be unable to be drilled and to produce if in fact they were dry gas wells. What makes things work today is the liquids content within those wells.

Just to give you an example, if we were to drill a well – and these are wells that are available in Alberta where we brought up 60 barrels per million cubic feet of gas – the gas component of that supply cost would be less than \$1.70, so that's why those wells work. In order to analyze this, we undertook a study, which was just finished, and that's the report that I talk about, about natural gas pathways. Basically, what we wanted to do was that by using narratives, we wanted to investigate what North America could possibly look like in the 10- and 25-year window. As far as critical uncertainties we came up with two of them, one being power generation, especially in the United States, and the other one being LNG exports. I'll just delve into these very briefly.

With regard to power generation in the United States 42 per cent of the power in 2011 was generated from coal. That's the equivalent of 220,000 megawatts of power. That's a lot of power. In Canada that works out to about 5,000 megawatts. So you can see that the United States is the focus with regard to changing out coal plants. I apologize if there's anybody here from Wabamun, which is where coal plants exist.

Anyway, in the United States as of today the Department of Energy has a list of close to 32 gigawatts, or 32,000 megawatts, of coal plants that are scheduled to be shut down in the next six years. To replace that, they also have on the books 35 gigawatts, or 35,000 megawatts, of solar and wind power to come on.

So the question is: where does natural gas fit? Natural gas fits in two environments. First of all, natural gas power generation in the United States right now runs at about a 30 per cent load factor. Our analysis would suggest that they could move that up to a 50 per cent load factor without building any more gas-fired plants and basically play trade-off with the rest of the market. But the coal industry in the United States is an aging industry.

Just to give you an example, this graph here shows you the grouping of plants from when they came on stream in five-year blocks. What it suggests is that 87 per cent of all the coal plants in the United States are 25 years of age or older. Of more interest is that 22 per cent, or almost a quarter of those plants, are 45 years of age or older. In my previous life, when I was a consultant, we basically said: 40 years of commercial life and you tear the thing down. These plants are operating past that.

What does that mean in a natural gas sense? The current market in the United States is about a 20 billion cubic feet per day market. Roughly one and a half times Canada's total production would feed those plants. On a go-forward basis, depending on which one

of our narratives you'd like to believe, on the low case it would stay roughly at that 20, but on the high case it could grow to 52 billion cubic feet per day.

In the other critical uncertainty, that being LNG exports from North America, competition is the word of the day. So in the Pacific Rim basin LNG is delivered today from three major sources, first of all from Qatar. Roughly half of their supply ends up in the Asia Pacific basin, which is primarily Korea, Japan, and the emerging China economy plus India with regard to some of it.

The other competition of significance is coming out of Australia. As we sit here today, Australia has 3.2 billion cubic feet per day online and producing under long-term contract to Japan. I emphasize the words "long-term contract" because that's what makes a lot of their projects work. They are looking for 20-year contracts in order to pay for them. On a go-forward basis Australia has 8.1 billion cubic feet per day of projects which are currently under construction. These are due to come online in the next three to four years. In addition to that, there are 4.6 billion cubic feet per day of planned projects which could come online if the economics continue.

This particular graph here shows you what we refer to as "LNG: Now, Never, or Later?" I'll just go through the bars. The bottom bars are the Middle East, or the Qatar, flow. The blue bars are the Australian volumes, including on stream and under construction but none of the planned volumes. Basically, this is what it is. The green area in the middle there is actually gas which is supposed to come from Mozambique, which is currently scheduled. Mozambique is a high-potential source of LNG, but some of the political work there may not bring it on in its full value, so we've allocated only a little bit. The kind of purple bars and the brown bars: I'll come back to those in a minute. Those are basically the North American LNG projects which we have estimated in our work.

The interesting point about this graph is that green line that seems to bend over before it goes upright. What is going on there is that you would expect that LNG demand in the Pacific basin would continue upwards at a normal growth curve. What is happening, though: Russia is entering the game, and they are going to build one pipeline into the heart of China, one pipeline into Korea. What that does is that it will push back LNG out of that market for a period of time.

The net result is that we end up with this thing which we refer to as the Asia Pacific LNG pinch point. That is about 7 billion cubic feet per day, and when you look at our analysis, we are suggesting that North America could deliver close to 12 billion cubic feet per day into this market. What you take out of that is that it means that some of these projects can go ahead now, and post 2023 the other projects will be able to continue. After that point demand continues to climb.

This is just a very simple graph. The point I'm trying to make here is that for the Kitimat LNG project, which is the Chevron project, previously the EnCana project, the price estimate on it was done at \$500 per tonne. LNG Canada, which is the Shell project, is currently cost estimated at a thousand dollars a tonne. If you look at the green bars across there, those are other projects around the world which are actually under construction, and those projects are costing anywhere up to \$1,800 per tonne. The point I'm trying to make here is that the two B.C. projects, those two which we think are high potential to go ahead, probably in all likelihood will suffer some cost overruns before they actually come on stream. That will affect their economics.

This is a very simple case here about how the Horn River and Kitimat LNG projects look. In its simplest form, in order to bring Horn River on with an LNG project, including the pipelines,

terminal operations, et cetera, to run with two trains at 1.7 billion cubic feet per day, that's \$52 billion worth of capital investment over a 20-year period. Not for the faint of heart.

What I want to do now is just bring this into context about Canadian gas going to the United States, and I refer to this as lost markets. The picture on the right is a look at North America. Basically, Canadian gas is delivered through four pipelines: Alliance Pipeline, Northern Border, Iroquois, and the Niagara connection into the New England states right down to and including New York. That's the Marcellus, the blue area there, in its current state. We think that that will grow to a point where the supply will actually take over the entire New England states, all of New York, all the way down to Washington. It will enter the Chicago market, the net result being that the Iroquois pipeline carrying Canadian gas will go to zero, and the Niagara Peninsula will turn around, sending gas into Ontario. That's a Canadian market. Western Canada gas is getting backed out of that market. Our two pipelines which feed the Chicago market will probably suffer significantly.

3:50

The last pipeline, which is the GTN, or Gas Transmission Northwest, pipeline, which feeds California, is going to get pushed out of that market by the Rockies, the Wisconsin gas, which is cheap coal-bed methane gas. It's already connected through the Ruby pipeline. Basically, the point that I'm trying to get at is that our exports of gas are going to suffer.

This is basically the same picture. A couple of things to take away from here. In the very top bar you can see the TransCanada northern pipeline. Basically, the flow in that pipeline goes to zero, hence the reason why TransCanada wants to take two of the pipes in that corridor and convert them to oil.

What does this all mean? In our analysis we developed four scenarios. The grey squares at the bottom we refer to as "Nowhere Fast," the green bars are "Full Speed Ahead," and then the other two are various combinations of with or without LNG exports or with or without power generation. One of the not so interesting things you can take away from here is that in response to price, gas developments in the United States can bring on 60 per cent more gas than they are today whereas Canada, because of the differential between Henry hub and the Alberta basis, can only bring on a 30 per cent increase in gas flows.

When you're talking about net exports, in two of the scenarios Canada becomes a net importer of natural gas. What that means is that western Canada gas gets backed out of the Ontario and Quebec markets. Marcellus gas moves into that market, and basically British Columbia and Alberta are left to feed our domestic economies plus the oil sands if the oil sands grow.

If you want to talk about prices, here are some very simple prices. You can see that in our estimation gas prices – these are Henry hub prices – are not going back to \$10, to \$12, to \$15. They are going to stay sub \$8 and in two of the cases sub \$4. What that means to Alberta is: subtract about \$1.10 to \$1.25. That becomes Alberta's price. We have to drill and complete wells against that value.

What does it mean for Alberta as far as a production point of view? Depending on which scenario you want to look at, basically we're looking at bottoming out and being very flat. British Columbia is a little different, and in the very last slide I will explain that. Basically, British Columbia, in our perception, will benefit from the LNG projects. They will get to drill the wells and connect the pipes and build the projects.

As far as pipelines are concerned, these are our main export pipelines. The very top one is talking about TransCanada, and you

can see, basically, that under all four narratives the best they're going to do is about 3 billion cubic feet per day. That is roughly half the capacity of those pipelines. On a worst-case scenario they'll be down at a billion a day, which puts it at around 15 per cent of the capacity.

Northern Border is one of those pipelines that feeds Chicago. You can see that under two of the narratives it starts to run into the same difficulty.

This is just a picture of western Canada, and you can see that Alberta, which is the blue area, based on this narrative continues to wander downwards as far as its production is concerned. The black line is the ERCB estimate of production. You can see that basically ourselves and the ERCB – sorry; the Alberta Energy Regulator now – have similar forecasts with regard to that.

This brings me back to – good; I've got five minutes to talk about this – what we're ending up with, which is a northeast British Columbia versus a northwest Alberta situation. What I'm getting at there: I come back to this diagram here, and I'll use the Montney as the example. The Montney straddles both provinces, but in actual fact the Montney in the British Columbia area is actually getting more attention from the producers. There are more wells being drilled in there than there are in Alberta. The other resources, the Duvernay and the Notikewin, et cetera, are too far away from the pipes that connect the two provinces. Any development in there will replace volumes that are lost from existing wells that are on decline and about to be shut in.

Here are some very simple metrics, if you want to use that term. In Alberta as of the end of August we had 851 licences issued, and as I said, we'll be lucky if we make a thousand. Two-thirds of those licences are held by nine producers – and you can see the nine producers there – with EnCana leading the charge at 221. Several years ago EnCana drilled 3,500 wells, so you can see where we are today. In British Columbia they are currently at 509. They may make the 600-well level. Seventy-three per cent of those wells are drilled by five producers. I want to make this point. Shell, Progress Energy, EnCana, CNR to a lesser extent, and ARC Resources are all directing their drilling activity hoping to hook onto one of the LNG projects. They are not looking at sending this gas to eastern Canada.

Here's what, basically, the LNG situation looks like. We have on the pipeline side about 7 billion cubic feet of pipelines that are suggested could be built. We do not think that will happen. We think two of them will get built. On the coast we see the Prince Rupert and Kitimat areas totalling something like I think it's around 11 billion cubic feet per day of gas of LNG projects. We suggest half of them will get built, and I'll explain that.

This is what we think will happen. You can take this to heart or disregard it, whatever. The Montney will be the significant player in connecting to the LNG projects. There is a current pipeline called the Groundbirch pipeline, which connects Alberta to British Columbia. That's that orange one. We do think that some of the Montney gas in Alberta will actually connect into that pipeline and actually flow to the LNG projects, but the bigger component is going to come from the Montney play in British Columbia.

The reason we say that is primarily based on two things. First of all, the Shell project, which is the LNG Canada project in Kitimat, is going to start at 1.6 and eventually end up at 3.2 BCF per day. They are directly linked to the Coastal GasLink pipeline, which TransCanada is going to build, and you'll notice that it's sized at 3.2 billion cubic feet per day also.

If you talk to anybody from Shell, they will tell you two things. They want their B.C. gas going to the LNG project, and they want their liquids out of those gas streams to be within their control.

What that means is that they don't want low-heating-value Alberta gas mixing with the stream so that they have no control over the heating value going into the LNG project. They want that control. We think the Pacific Rupert gas transmission, which is 2 billion cubic feet, is going to do exactly the same thing for Progress Energy in its project called Pacific NorthWest LNG at 1.6 BCF per day. You'll notice the pipeline is a little bigger than what they need. That's where we think Alberta gas will fit into, so roughly about half a billion cubic feet per day.

There is another pipeline, proposed by BG Group, but at this point in time we have not heard of any contracts. We don't know how it's going to line up, and we honestly don't think it's going to get built.

I leave you with this slide here. I've got 10 minutes. There are four very simple points here. Alberta gas could be excluded by the B.C. LNG projects if, first of all, whoever gets there first will sign the contracts and be in the market for a short period if not a medium term. B.C. Montney supply costs are currently more competitive than Alberta supply costs, hence the reason why Shell and Progress are drilling them. LNG proponents, as I indicated, want control over their liquids. This is a key point. They don't want mixing with other streams. Shell is actually going to build a private pipeline to connect into the TransCanada pipeline downstream of the header so that it goes right to the plant. The other thing is that that particular pipeline is virtually one hundred per cent contracted by Shell. What's left probably will be used for peaking gas.

On the bottom point there, future Alberta gas developments could become challenged if – and I double emphasize the word "if" – the Marcellus and other U.S. shale gas developments exceed what we have estimated. They could actually take Alberta gas totally out of the export market in any narrative we come up with.

4:00

We are currently drilling wells that contain liquids in them. Those liquids – and I'm speaking specifically of the propane and butane – are headed downward as far as North American prices are concerned. If they continue that downward trend, the uptick value of those liquids will disappear. That will mean, basically, that propane and butane can go back into the gas stream because it's not going to market. That would affect the economics of those wells.

Future oil sands projects would not proceed, reducing the need for natural gas. What that means is that if we don't build pipe, we're not moving forward with the oil sands.

Demand for additional ethane disappears. We currently have about 30,000 barrels of space left at the three ethane crackers that we have in the province, and then we will be maxed out. There is a theory that they actually could operate at 10 to 15 per cent above that – yet to be seen – but what it does say is that on a go-forward basis we won't need any more ethane. It will go back into the gas stream unless something else happens.

Then one of the big ones here is that as the flow on Northern Border and Alliance falls off, the net result is that the tolls on those lines increase, very much like TransCanada. The net result is that the Alberta market price crashes.

With that, I think I'll run for the door. Thank you.

The Chair: Thank you, Mr. Howard. If we ever questioned the need to look at this issue, I think you've just convinced us again that this is an absolutely pivotal question for Alberta to be considering.

Mr. Howard: May I add one more comment?

The Chair: Absolutely.

Mr. Howard: The report that I referred to, Global LNG: Now, Never, or Later?, is on our website. I will forward the link to Chris, and he can add it to your site.

The Chair: Wonderful.

Mr. Howard: North American Natural Gas Pathways: this is actually the detailed discussion of the four narratives. Again, if you're not doing anything on a Sunday afternoon, an excellent read.

This one here was put on your website. I did not talk about it because there's just not enough time. It's Heavy-Duty Diesel Vehicles: Their Carbon-Constrained Future Role Within The North American Economy. It's interesting reading. It does not come to any definitive conclusions, but it gives you some background on why the diesel trucks are not buying into the LNG game.

With that, any questions?

The Chair: Thank you.

We'll open up the floor to questions. We'll start with you, Mr. Dorward, and I'll make a list here if anybody else has got any more questions.

Mr. Dorward: Where is the Shell LNG project?

Mr. Howard: It's in Kitimat. It's the LNG Canada project.

Mr. Dorward: The other reference you had is that same one, right?

Mr. Howard: Yeah.

Mr. Dorward: The whole package of things that you've been telling us about sounds like a person coming into Alberta interested in doing some polypropylene or other type of work should be pretty confident relative to pricing. Would that be a fair analysis?

Mr. Howard: Look at it this way. With propane prices declining, for someone coming into British Columbia looking to build an LPG terminal and pick up propane out of western Canada and ship it by rail, it's a good business because it's at a declining price and they've got a captive market. For someone who wants to take propane and actually convert it to polypropylene, that's a different issue. Now you're in the plastics business, so your uptick on that is different. Yes, it's a good business.

Mr. Dorward: But source of supply and pricing are pretty much looked after. I mean, the upside of this is that there's opportunity on that side which is only strengthening. Is that a fair analysis?

Mr. Howard: Yes.

Mr. Dorward: I take it that the work you do – you haven't done a study that takes us into that world, or does it touch on that in this report at all?

Mr. Howard: If you invite me back in the fall, I can talk about that.

Mr. Dorward: Okay. I'm still on slide 3, and I'd like you to repeat from slides 3 to 28, let alone discuss that. I might be in your Calgary office sometime. Would that be okay?

Mr. Howard: Absolutely.

Mr. Dorward: Thank you.
Thanks, Chair.

Mr. Howard: And I leave that with anybody. If you want to send me an e-mail, phone me, or drop by the office, I'd be more than happy to go through all of this stuff with you.

The Chair: Thank you.
Ms Calahasen.

Ms Calahasen: Thank you very much, Madam Chair. Welcome, first of all. I'm impressed with the information you do have. Thank you for the research that you guys are doing.

I do have a question. You say that the Montney is important. If it is that important, then when we're talking about building pipelines, the pipelines should be going west rather than south.

Mr. Howard: Yes. There's no market south of us.

Ms Calahasen: Then in your opinion, what's the best way to ensure that small and mid-size companies benefit from the LNG similar to large, integrated LNG players?

Mr. Howard: That's a problem. The two pipelines that I mentioned, Coastal GasLink and Pacific Rim, are dedicated – I can't use the term "dedicated," but they appear to be fully contracted by three producers, so they've basically captured that game. The pipeline that I mentioned called British Gas – I forget the other part of it – is a 4 billion cubic feet per day pipeline. It's a merchant pipeline, which means that small companies could get into that. The problem is that when you enter the Asian market, the first two projects along with the Gulf of Mexico projects would probably fill out the need for LNG in the Asia Pacific basin. So that BG pipeline may not get built. If it does not get built, then the small producers, whether they're in British Columbia or Alberta, cannot enter that LNG system in any magnitude. There may be some little space up top in the pipeline but not to any magnitude.

Ms Calahasen: Thank you. I'll come back later.

The Chair: Ms Johnson.

Ms L. Johnson: Thank you. Thank you for this very informative presentation. I feel like I need to rewind and play it slowly. I'm looking at slide 17 and the pinch point, projects that can go ahead. Could you explain that slide again?

Mr. Howard: Very easily. Okay. Starting at the bottom . . .

Mr. Dorward: Is there any way we can get it up on the screen?

Mr. Howard: It's coming. There it is.

Okay. Starting at the bottom, the purple bars are the LNG supply which is coming out of primarily Qatar. There are a couple of others, but primarily it's Qatari gas, LNG, and that is 50 per cent of their supply, that goes into the Asia Pacific basin. The other 50 per cent goes to Europe.

The blue bars, just the next set of bars up, are the Australian supply. This is the part which is on-stream today and the projects which are under construction. Now, Australia has gone on the

record that they want firm contracts, and they have managed to secure firm contracts for all of this supply. What that means is that they're going to sell this in Japan because Japan is paying for it. It's not going to get bumped out of the market. So up to that point everything is pretty much firm.

I didn't mention this when I was talking, but the green vertical bars on the left-hand side are the gas supply which is coming from Trinidad and South America and which goes around Africa into the Asia Pacific basin. That LNG supply is going to get bumped out of that market basically on price. It will end up going to Europe. In its place we will supply from three different sources. Assuming the American government doesn't step in and say, "We're not going to do it," right now the Gulf of Mexico could deliver up to 10 billion cubic feet, and we think that Canada could deliver up to 5 billion cubic feet and that Mozambique can deliver up to 2 billion cubic feet into this market.

If that green line had continued on up just as a natural growth, everything would have worked fine. Along came the Russians, and they are in the process of negotiating a pipeline which will enter the centre of China and basically reduce their need for LNG. There's another pipeline which is going to enter Korea, and it will reduce their need for LNG for a period of time. That's the reason why that green bar curves over.

The net result in its very simplest form is that between western Canada and the Gulf of Mexico in the 2019 and 2020 time frame there's room for 6 billion cubic feet of LNG. Well, let's say for the sake of argument that's one terminal from western Canada and two terminals from the Gulf of Mexico. After 2021 Canada could come on with another terminal, and the Gulf of Mexico could come on with another four terminals, totalling 15 billion cubic feet of LNG.

4:10

What that means is that the BG pipeline, which you brought up, won't fit into this market until sometime post 2024. So it could get built, but it's a long way off. Unfortunately, I think a lot of things are going to be different by the time we get there. I'll be retired by that time.

The Chair: But we'll still be asking you questions.

Does anyone else have a question?

Mr. Dorward: Could you just describe that Korean one a little bit more? Is that coming from Russia all the way down to Korea?

Mr. Howard: Coming from Russia to South Korea.

Mr. Dorward: Will that provide all the LNG that South Korea needs?

Mr. Howard: No.

Mr. Dorward: So South Korea is still going to be a market?

Mr. Howard: It will still be a market, but if they are taking 6 billion cubic feet per day, that'll go in half, so it'll be 3 billion cubic feet per day in four years' time.

Mr. Dorward: Are there a lot of players in Korea, or are we talking two nationalized companies? Are you aware of that market?

Mr. Howard: Well, you've got the Mitsubishis of the world, you've got the shipbuilding construction, and you've got the government co-gas, stuff like that, so a bunch of different players,

different reasons. I actually had conversations with a couple of Korean companies that are in the chemicals business, and they are actually doing exactly what you suggested. They're coming to see whether they can build an LPG terminal in Kitimat and actually get the liquids shipped over to Korea. So a bunch of different players.

The Chair: So we could invite you back several times.

Mr. Bilous has a question.

Mr. Bilous: Just to start off, thank you for coming today and for your presentation. You're focusing almost exclusively on the export of natural gas, which is fine, but in your presentation – correct me if I'm wrong – you talked a little bit about the coal generation of power in the province and how several of our coal plants are coming to term, the end of their life expectancy, so to speak. You know, I guess I'm just thinking of what role natural gas can play in replacing those facilities that are coming to the end of their term. I'll let you answer that first, and then I'll give you a follow-up.

Mr. Howard: Yeah. Again, it's buried in the report. I didn't talk about it. In its very simplest form, we have I think it's three brand new supercritical coal-fired generators that came online in the last three years. They're not going to be shut down for many years to come. They're going to be with us until 2025. But there are a couple of others that are nearing the end of their life. They could be replaced by gas-fired generators. I absolutely agree with that. Alberta is going to continue to grow as an economy. We could look at distributed cogeneration and small turbines all over the province. I absolutely agree with that. The fact that we've got pipe holding us from washing into the sea – we've got pipe all over this province. We can deliver gas to virtually any place in this province and put a gas-fired generator on the end of it. So I absolutely agree with that.

Now, unfortunately, does that move the needle a lot? Not a lot. Bringing on an oil sands plant adds about 100 million cubic feet per day of demand. Bringing on a gas-fired power-generating station of the size of one of the coal plants is about 30 million cubic feet, about a third the size. So it does move it but not a big movement there. If you're looking at the United States, you're not talking about shutting down one 300-megawatt unit. You're talking about shutting down, you know, a thousand of those things. It's a different game.

Mr. Bilous: Just a follow-up if I may. Would there be a significant impact if, say, there was one or two upgraders that were built in the province and also moving to supplying domestic needs? Would that move the needle significantly?

Mr. Howard: Upgraders? You're talking oil sands upgraders?

Mr. Bilous: Yeah.

Mr. Howard: Oh, absolutely. The energy that's needed to build the mines, build the SAGD operations, build the upgraders: there's a significant amount of energy in there, and it contributes to our greenhouse gases and all that kind of stuff. But as I emphasized, if we do not get pipes built, we won't build those upgraders; we won't build those oil sands projects. We are full now as far as our pipelines are concerned. Rail is assisting a little bit, but even rail has a maximum amount they can move. At some point, if we don't build pipe, we're going to be stopped.

The Chair: I'm just going to check in with the people on the phone to see if anybody who is teleconferencing in has a question, and then we'll go back to Mr. Bilous. Has anybody got a question? Gentlemen? Okay.

Mr. Bilous: It's just one quick one.

The Chair: Sure. Okay.

Fellows, if you do have a question and you're teleconferencing in, just as soon as Mr. Bilous has finished his next question, then pop in, okay?

Mr. Bilous: Okay. Correct me if I'm wrong in my understanding. Now, you're saying that we're at capacity right now with the current pipelines. However, if we're talking about upgrading a product, then that would replace the existing raw form of bitumen that's being shipped through our pipelines, would it not?

Mr. Howard: Yes. Look at it this way. If we're moving bitumen in a pipeline, it takes a hundred units of power to move it a mile. If that gets upgraded to SCO, synthetic crude oil, it takes 70 units of power. So we actually can move more volume. Yes, that is absolutely right. But if we went down that road in a very significant form, eventually it would come right back up to that level again.

Mr. Bilous: Okay. Thank you.

The Chair: Okay. Any questions from the teleconferencers?

Mr. Anglin: Yes. The only question I have is: can we have contact information passed around? There's so much information here to chew on. I certainly would like to talk to the presenter at length about a whole bunch of things.

Mr. Howard: I left a bunch of my business cards with Chris.

The Chair: Our clerk, I am sure, will put all of this information on the website. I think he already has, so that's certainly a yes. The answer is yes.

Mr. Anglin: I'm just looking at it. Absolutely. That's the only question I had.

The Chair: Mr. Sandhu has a question and then Ms Calahasen.

Mr. Sandhu: Thank you very much for your study. I've got a question. Have you ever studied the structural difference between Alberta and B.C. gas processing and marketing? Are there lessons to be learned?

Mr. Howard: Processing? Gas processing? Well, in its very simplest form, Alberta has a whole lot more plants than British Columbia does. In that northeast-northwest environment we have three deep-cut gas plant facilities, which means they're taking everything from the ethane out of there. British Columbia at the Solex plant is doing exactly the same.

On a go-forward basis, especially if you look at the Shell project, they will build a brand new processing plant, which will take everything from the ethane through pentanes plus out of the stream. The ethane molecules, I think, will come to Alberta to the petrochemical business. Propane, I think, will get spiked back into the gas stream to get the heat content up. Butane should in all likelihood go to the refineries, and then pentanes plus is a diluent for oil. When all of this thing works out, that one plant will, I think,

probably be a state-of-the-art plant. But as it exists today, the plants in Alberta are more efficient than the plants in British Columbia.

Mr. Sandhu: Thank you.

The Chair: Thank you.

Ms Calahasen and then Mr. Dorward. I think I'm going to have to cut questions off at that point in time, regrettably.

Ms Calahasen: Your concluding comments are really interesting because if you look at this, then it's all up in the air.

Mr. Howard: Yes.

Ms Calahasen: As we plan to see what we can do to make sure that we address the issue of gas and the production of gas, all of this kind of doesn't give us any kind of definitive direction. I guess my question is: with LNG exports seemingly poised to boom in North America, what is the best way to ensure transfer pricing issues don't constrain profits to nonintegrated LNG players and royalties to the Crown?

Mr. Howard: You're talking about elements within our control?

Ms Calahasen: Yeah, I would think so.

4:20

Mr. Howard: That's a difficult question. I'm not sure I can give you a definitive answer to that. Part of the reason is that the whole issue of producers, pipeliners, demand, and all of that kind of stuff is within their corporate environment. If Shell wants to build a project which uses 100 per cent of the capacity on a pipeline and dedicate that to one of their projects, you can't do anything about it. It's not that they're running a private pipeline. They're basically just saying: it's an open pipeline, but we're contracting 95 per cent of it.

I would suggest that, again, if pipelines on the oil side get built, then gas utilization or gas demand in the oil sands environment would go up significantly. That would help increase the requirement for gas.

This is an interesting picture here. Driving up from Calgary, I probably counted 500 trucks. I'll bet you one of them was an LNG truck. I only know that because it was a Ferus truck, and Ferus is converting their trucks to LNG. They're the only ones I know that are doing it. If you could promote this, heavy transportation – and I think the way you could promote it is by building the refuelling stations.

Ms Calahasen: That's a constraint even in northern Alberta. If you don't have refuelling stations, there's no point in having to convert to something where you can't access the gas or the resource.

Mr. Howard: Surprisingly enough, Ferus has an agreement with EnCana, who has the LNG facility in Strathmore. They have a pup trailer that sits in the parking lot fully loaded, and if one of the Ferus trucks runs into trouble, they haul that up and meet the truck on the highway and fill it up. That's how sensitive that refuelling is.

The Chair: We see an opportunity here.

Actually, your answers are provoking more questions, which is really healthy. Mr. Dorward has a question, and I'm going to let Ms Kubinec ask her question, and then I will cut this off. Okay?

Mr. Dorward: For the Chevron and the Shell – I apologize if I missed that – what were the earliest on-stream dates for those ones roughly?

Mr. Howard: I've got a big spreadsheet that's got that. The Shell, I think, is 2018, and the Chevron, which is actually the EnCana project, is 2015. Is it going to make it? I kind of doubt that.

Mr. Dorward: It's under construction, but Shell is not?

Mr. Howard: No, no. Neither one of these has started. The Progress plant, I think, probably will be the Chevron project, and it's the one in Prince Rupert.

Mr. Dorward: Slide 14. If I wanted to learn more about your narratives there, is that in this report?

Mr. Howard: Yes, it is.

Mr. Dorward: It's in here? All right. Thanks.

Mr. Howard: If you look at the appendix in there, the narratives are all using English displayed.

Mr. Dorward: All right. Thanks.

The Chair: Thank you.
Ms Kubinec.

Ms Kubinec: Yes. Thank you very much. A very interesting presentation. I'm learning more about natural gas than I thought I would ever need to know. In my school board days part of our bus fleet converted to propane, and we ended up having to convert back because of some of the issues. Can you tell me whether or not the LNG is going to be better than what happened with propane? We weren't the only school division who tried to do that. Is there a way to address some of those issues?

Mr. Howard: Propane is a volatile fluid, much more so than methane. The biggest concern about it, especially in school buses, was that if a bus got hit in the back and it ruptured the tank, it's basically a bomb. That's what really killed that process.

Now, if you're using compressed natural gas – that basically means you've put natural gas in, and it's in there under 3,000 pounds of pressure – it's a very similar situation. You've got basically a bomb sitting there. Don't record that. But if it's running on LNG, which is a supercooled gas, it is nonexplosive. So in order to get the bus or whatever you're running to work, it actually has to go through a flash vaporizer to get to the vapour phase.

I can tell you a story. In the United States they actually fired a gun at an LNG tank, and they could not get it to explode. It leaked, and it started leaking LNG all over the place, but it didn't explode.

So will school buses run on LNG? Honestly, I can't tell you if they will or will not, but I think it is the better fluid to be in there. It's got handling issues – you've got to wear gloves and all that kind of stuff – and refuelling issues, but I think it's a safer fluid. Now, that being said, the city of Calgary – I don't know about the city of Edmonton – is converting its bus fleet over to compressed natural gas.

Ms Kubinec: Okay. Thank you.

The Chair: Thank you, folks. This has been really helpful. You've certainly whet our appetite. I am sure many of us will read your materials. It may well be that this group invites you back.

You're an absolute wealth of information. Thank you for taking the time to prepare and come to us.

Mr. Howard: Thank you very much.

The Chair: Folks, we have one hour more to go through where we are today. In front of you is the proposed scope of review. We've had one suggestion for a minor amendment to it. I'll just put that on the table now so that we can think about it. Mr. Dorward, our guest for today, suggested that we were too tentative by saying "that in the interest of encouraging broader and higher-value use of natural gas both domestically and abroad, the committee undertake a study of possible public policy tools to," and then the list goes on. He's suggesting that we delete the word "possible" because it sounds too tentative. I'll let you think about that.

We're going to attempt today to have Ms Zhang go through the research that was done. It was extensive research. I'm sure you spent a lot of August doing this research. I just want to touch on the high points because we've all had a chance to review it. Then what I'd like to do is for us as a group to finalize, if we can, the scope of the review – I will need a motion on that – and then start to plan how we want to spend our time as a committee.

We have budget estimates that will again start after the budget. We have a six-month clock that starts from the time that we confirm our scope of review, and we need a month for Dr. Massolin to write the report and for us to review it and sign off on it. I'd like to get a sense of where people feel comfortable, where we want to delve into having presenters. We don't need to decide all the presenters today. We did have a presenters document prepared by research. Names were added by people on this committee, and they can continue to be added as we sort through what we want our road map to look like.

But leaving today, as chair it would be my great hope that we resolve what we want to review – you know, put the edges around this frame – and maybe decide on what the next two presentations will look like. Maybe a field trip. We've been invited to do a field trip out to Williams Energy. There are other possibilities for field trips. While the weather is good and we're not sitting in the Leg., it might be a good time to do that. What presenters do we want to have in front of us at the front end of this review so that our clerk can get going on inviting people because we have to give people some time? Then we can throw some of this back to the working group to work out. We've got quite a bit of road map working to do today.

After that long introduction I'm going to suggest that we invite Ms Zhang to review quickly the research that was done. We'll have any questions, and then let's start looking at the planning phase. So over to you. Thank you for all of your work, both you and Dr. Massolin. That's an awful lot of work. It's a big topic.

Ms Zhang: Thank you, Madam Chair. Research services prepared a document providing some background information on natural gas and some of the issues that surround the use of natural gas. This document looks at some of the things that were mentioned in this motion, which is securing market access for Alberta producers to liquefied natural gas terminals, converting heavy-duty transport vehicles from diesel to natural gas, and other consumer uses such as natural gas appliances and cogeneration. The purpose of this document is to provide the committee with some background information on each of these topics so that you can narrow the scope of your review.

The document begins with the description of natural gas, both conventional and unconventional, and where it can be found. It

then goes on to describe the surplus of natural gas on the market thanks to the rise in the production of shale gas in the United States. This increase in U.S. shale production has created a glut of natural gas on the market, prompting Canada, who exports natural gas exclusively to the U.S., to search for other markets to export such as Asia, for example, where there is growing demand. Furthermore, there's a higher price for natural gas on the Asia Pacific market compared to the Alberta market, leading to the potential for significant profits to be made.

4:30

The document gives an example of what's happening in British Columbia, who due to its large reserves of natural gas has begun planning LNG terminals at Kitimat and Prince Rupert. The province has developed a natural gas strategy which outlines some of the B.C. government's policy initiatives proposed to address issues that arise with natural gas development, including addressing significant economic and sociocultural issues associated with development. The government in the strategy has also planned to attract more global investment to the province to promote the use of natural gas as a transportation fuel, to plan a future power supply for LNG terminals, and to improve the efficiency of provincial and federal environmental assessments. They're described in this report as examples that Alberta could potentially draw from in its own policy-making.

There also exists an option for Alberta to promote natural gas use domestically in the form of natural gas vehicles, where natural gas can be compressed into CNG or liquefied into LNG to be used as a transportation fuel. According to some studies heavy-duty trucks were found to be the most suitable candidate for the conversion to natural gas and where the most cost savings can be obtained. The impact on the supply of natural gas, not just in Alberta but for natural gas supplies across Canada, would be significant.

One study found that if 10 per cent of the trucking industry activity was converted from diesel to natural gas as a transportation fuel, trucking would account for just over 3 per cent of natural gas consumption in Canada. If 50 per cent of trucking activity was converted to natural gas use, that share of total consumption would rise to more than 16 per cent. However, as you heard from Mr. Howard's presentation, this may not necessarily be the reality for diesel truck conversion.

Natural gas vehicles reportedly decrease the amount of greenhouse gas emissions produced and offer significant fuel savings due to the relatively low price of natural gas. Added to that, natural gas is not taxed in Canada like diesel and gasoline are, and this, therefore, accounts for a large portion of the cost savings.

Since its introduction to the market other barriers have limited the wide acceptance of natural gas as a transportation fuel. This includes the high cost of conversion of vehicles from diesel to natural gas; the lower energy density of CNG and LNG as fuel, requiring more frequent refueling; and the lack of refueling infrastructure, which limits the routes that these vehicles can take.

As examples, natural gas has been used by several countries as transportation fuel, including Pakistan, Argentina, India, and the United States. To address the barriers that I just mentioned, in all of these countries governments have implemented policies in order to encourage the conversion and use of natural gas as a fuel. This includes exemptions on import duties and sales tax on CNG equipment, subsidies for the construction of refueling stations, excise tax credits for CNG or LNG use, and cost-sharing projects, just to name a few. If the committee were to choose this topic, addressing some of these barriers would be important.

The report also goes on to describe other uses for natural gas, including natural gas appliances such as dryers and cogeneration, which have been supported by other provinces to reduce greenhouse gas emissions and improve energy efficiency.

Provinces such as B.C. and Ontario have offered programs to streamline the process for developers to sell electricity to the larger grid and offer them savings on electricity delivery costs.

Finally, this report looks at some but not all of the environmental issues surrounding natural gas. This includes the point that natural gas offers a life cycle reduction in greenhouse gas emissions when used in heavy-duty fleets compared with other fuels. However, it also raised other environmental issues such as with fracking, the use of water, and the potential contamination of aquifers.

This report attempted to provide some information on natural gas and issues that the committee may wish to consider when narrowing the scope of its review. At the time when you decide the topic for this review, then research services can provide a more in-depth look at whatever issue you choose.

Thank you.

The Chair: Thank you very much. Again, that's a mammoth undertaking.

Any questions from the committee?

All right. Well, thank you. It's a good start, very much.

I'd like to talk a little bit about the scope of work which is in front of you, the scope of the review. Maybe we can just talk about whether this still is the scope of work that we want to tackle and if we're comfortable today firming that up. The points that have been enumerated by Ms Zhang are consumer use, the CNG/LNG vehicle, the LNG exports, government fleet vehicles. Then we've got a bucket at the end of our proposal that says: "Share information on natural gas use, market experience, and best practices across Canada and abroad." That pretty much lets us introduce themes like the upgrade that we talked about or the propane to plastics that we talked about. We can pursue certain best practices, upgrading here in the province or whatever we wish, cogeneration, in that kind of a bucket clause.

Any discussion on how people are feeling about the proposed scope of review?

Ms Calahasen: I'm looking at the prospective list of stakeholders, first of all. I think sometimes that will determine it, right?

The Chair: Well, it's kind of a chicken-and-egg problem. We actually talked about that a little bit in the planning for this meeting. We were going to go through the stakeholder list and then talk about the process, but really your stakeholder list falls out of what we decide to look at. If you'd like to talk about the stakeholder list, I'm comfortable with that.

Ms Calahasen: No. That's fine. I think I'm fine if we go the other direction as well.

The Chair: Okay. Ms Fenske.

Ms Fenske: Well, thank you. I think based on what we heard today, we should certainly investigate the second bullet on encouraging the heavy-duty transport. Consumer use of natural gas is something that every Albertan might be able to make use of. I certainly would like to know about the best practices. I think that that's important. Who knows where this will take us? We need to know what some of those best practices are because that would lead us perhaps in directions that we haven't explored here in Alberta. So those are areas that I would certainly like to look at,

which leaves two more bullets there, which I'm sure would be acceptable. I don't want to do everything for everyone. I want us to get some basic information and then policy could perhaps be driven from that.

Mr. Casey: The only one I'm stumbling on a little bit is the fourth bullet down, not that it's inconsistent but just that it's, I would say, more specific. The other bullets to the scope there are fairly broad in nature – they take in a whole segment – where the fourth bullet is specifically government fleet vehicles converting to natural gas. That to me is a specific recommendation, not so much a public policy tool. So I'm just stumbling a little bit on bullet 4. I'm okay with it being there, but I just think that it may be an end result of something we do or it might end up being a recommendation of something we do. It seems like more of a recommendation than it does a term in the scope.

The Chair: We're going to turn you into a lawyer after all, Mr. Casey.

Mr. Casey: Oh, God. I hope not.

The Chair: It's an excellent point. My sense is that this committee has never hesitated to make recommendations. I suspect that if at the end of this review we decided that that was one of the recommendations, it would be well within our mandate to make that recommendation, and it could well fit under the bucket of share information on natural gas use and best practices.

Any other comments on that? Yes, Mr. Khan.

4:40

Mr. Khan: Thank you, Madam Chair, and thank you to your team of researchers for their outstanding work. This is more of just a comment and an observation about our scope of work. I do agree with Mr. Casey, but even if we tightened it up and just focused on the first three bullets, that in and of itself given the presentation that we've received today is an enormous, enormous topic. Given sort of the limited time that we have to work with – again, more of an observation and more of a question than a statement – might we be better served by tightening our focus on the scope?

The Chair: We actually talked about that before. We talked about that when we looked at hydroelectricity, too. It may be that for buckets like the consumer use of natural gas, where we thought, frankly, at the beginning of this that we were quite a bit behind some of the other provinces, the initial research suggests we're farther ahead, which is interesting. I think what we're trying to do is leave ourselves enough flexibility that if we chose, for example – and I keep going back to this example – to look at cogeneration or upgrading in province, if we stayed with the first three lines there, we wouldn't be able to look at it within the scope of this review.

One of our challenges as a group – and I think it's a great opportunity, to have a six-month window here – is that we can say: "Okay. Let's start with, you know, these base understandings, and let's delve into these questions and have these presenters and then at the end of, say, one month revisit where we want to spend our time." Just because we have it in here doesn't mean we need to spend a certain period of time on it.

Mr. Khan: That's what I mean. Out of that framework, it sounds like we've certainly got some exciting work ahead of us, and I'm looking forward to the task at hand.

Thank you.

The Chair: Was there a comment from somebody on teleconference? I thought I heard somebody.

Mr. Dorward: Firstly, my apologies for having to step out. My phone has gone completely tizzy, and I'm trying to get that fixed.

I'm backtracking. I assume you discussed the word "possible"?

The Chair: Yes.

Mr. Dorward: Could I also have the committee consider a couple of other words? In the first bullet, eliminating barriers "of" the use of natural gas instead of "on" the use of natural gas. I think that's more appropriate.

Then in the second bullet, encourage heavy duty transport vehicles and off-grid power generation "to use" compressed natural gas, not "using." It's the wrong tense, isn't it?

Mr. Casey: He's a closet English major.

The Chair: That's a compliment, by the way.

Mr. Dorward: Yeah. Then because I missed the complimenter – *Hansard* can play with that one – did a bullet get added which talks about, you know, the further products that can be developed inside Alberta with the gas products, or do we want to stay away from that?

The Chair: No. Actually, what we were talking about was deleting the fourth bullet because it's too specific and relying on the final bullet to address things like the conversion of fleet vehicles. You know, that could be a best practice. Also, cogeneration and upgrading, as you suggested, could all be considered under that bucket of the last paragraph.

Mr. Dorward: Great. Thank you.

The Chair: Ms Johnson, and then Mr. Casey.

Ms L. Johnson: Thank you, Madam Chair. I'm struggling with bullet two, "encourage heavy duty transport vehicles and off-grid power" use. To me, those are completely different things. In the first section, that's one industry. You know, you go to the Alberta Motor Transport Association. They're going to have a position on that. It's a matter that has been coming up in the industry for the last 20, 25 years. Pick a number. The off-grid power generation, to me, is more the use by manufacturers, by our oil sands upgraders, by electricity producers that are presently coal generated. Do they become natural gas generated? So if we can cover that spectrum, which is if our transport vehicle people come in and say: we've been asked to do this every eight years for the last 20 years; we still don't see a benefit in conversion.

The Chair: I think that when we talk about CNG and LNG, we talk about the heavy-duty transport vehicles. Also, often when people talk about CNG and LNG, they talk about power generation, which probably would be different presenters. Then the idea of cogeneration will be captured under the bucket clause.

Ms L. Johnson: Okay.

The Chair: The bucket clause.

Ms L. Johnson: The bucket clause.

The Chair: But you're right about CNG and LNG. We would probably have different presenters with different expertise.

Ms L. Johnson: Yeah. Thank you. I just wanted to clarify.

Mr. Casey: I was just going to ask if during the development of the scope here whether research and development – so if we're talking about public policy. Because that's really what the first part of this is about: that the committee is going to undertake a study of possible public policy. Well, public policy can also be directed at postsecondary to encourage research and development around, you know, expanding the market of natural gas. We're not mentioning education here anywhere or research and development. We have a huge opportunity, I think, with our universities and colleges that we have in place to build on that given where Alberta is going with education and postsecondary in today's world. We don't seem to be mentioning that anywhere, so I'm just wondering whether that was considered.

The Chair: But it would be too specific. I'm teasing.

Mr. Casey: Ouch.

The Chair: It's an excellent point. Actually, we haven't focused on that in our stakeholder list, and something really important to note is how we tie innovation and economic development through postsecondaries or even through corporate. I think we've tended to focus more on private sector in our stakeholder list. Would you be comfortable if we beefed up our stakeholder list to include postsecondary education institutions, research institutes as part of that innovation and not just the private sector as we seem to have done so far?

Mr. Casey: Well, I just think that would be good information for us to have because those people are going to be looking at the future, not where we've been and so on. I mean, I think having that information would be really useful if for nothing else other than to make a judgment call on some of these other things.

The Chair: I think it would fit within the final bullet. It's a good reminder to all of us, I think, when we get to the final stages of this review in one month's time to go back, to revisit what our aspirations were here in terms of things that we've thought of now and make sure we hit them all.

Any other comments?

Mr. Anglin: Yeah. Can you hear me?

The Chair: Yes. Go ahead, Mr. Anglin.

Mr. Anglin: Okay. On bullet 1, where you put home-scale cogeneration, the more appropriate term would be large microgenerators and small microgenerators. This province breaks out microgeneration into two classifications. It's what we normally use, and either one could be used in the home. I know the definition fairly clearly. A small microgenerator is 150 kilowatts and under, and a large microgenerator is 150 kilowatts up to one megawatt. So they would fit in that. That would be a more appropriate way to describe it, and it would take in exactly, I think, what you're trying to do there by using the word "home-scale."

Mr. Dorward: Mr. Anglin, the words "home-scale cogeneration," then, really should be wholly replaced by saying large and small microgenerators?

Mr. Anglin: That's correct.

Mr. Dorward: Okay. It's better to have the common terminology in use.

4:50

The Chair: Okay. Any other comments?

All right. Well, I'm going to read it out.

Ms Kubinec. I'm sorry.

Ms Kubinec: Actually, I was going to make the motion.

The Chair: Oh, wonderful. Do you want me to read it out, or do you have it captured?

Ms Kubinec: No. You go ahead.

The Chair: Okay. Ms Kubinec would like to make a motion that in the interest of encouraging broader and higher value use of natural gas both domestically and abroad, the committee undertake a study of public policy tools to

- encourage the consumer use of natural gas by eliminating barriers on the use of natural gas for powering personal vehicles, large and small microgenerators, and home appliances: stoves, clothes dryers, et cetera,
- encourage heavy-duty transport vehicles and off-grid power generation to using compressed natural gas, CNG, and liquefied natural gas, LNG, including in Canada's north,
- secure market access for Alberta producers to liquefied natural gas terminals which could distribute the resource at world prices, and
- share information on natural gas use, market experience, and best practices across Canada and abroad.

Ms Kubinec: So moved.

The Chair: Okay. All in favour? Any objections? The motion is carried. We have a new scope of work. Wonderful.

Mr. Dorward: Those should be semicolons, by the way.

The Chair: Mr. Dorward is prevailing as the English major here.

All right. Would the group like to talk about the first presenters that you would like to hear from given that scope of work, perhaps for the next month, or would you like to have a quick review of the stakeholder list before we do that? Any feedback on that question?

Okay. Well, let's start with a quick review of the stakeholder list if you will, Dr. Massolin.

Dr. Massolin: Sure. You all have the stakeholders list before you. You can look at the table of contents on page 2 to see the categories of associations and groups and individuals that we thought the committee would want to consult, including section 10, which is stakeholders that were suggested by the members of this committee and added to the list.

We tried to, like I said, hit the marks of this proposed motion and include, you know, natural gas producers, suppliers, pipeline companies, and also to include some of the groups that you mentioned, Madam Chair, that were referred to in terms of the academics because there are lots of think tanks. Alberta Innovates is included in this list and another group as well. There are postsecondary economics researchers in this as well. Perhaps we can bolster that list, but there are some that are at the beginnings of that type of approach.

The Chair: That's a fair comment. You're absolutely right.

Dr. Massolin: So there you have it. Any questions?

The Chair: Let's think about what we need in order to get enough information so that we're all starting in a place where we're comfortable. In the hydroelectric study we started with people who understood how to build those plants. We started with economists. Where would you like to start on this project? We could also do a site tour. We've been invited to the upgrading facility by Williams Energy, which is about a 45-minute drive from Edmonton. I note that Ms Dean is relieved that we're not trying to fly out of the province or something. It's a feasible visit to look at a site and see how upgrading happens.

We could go to gas plants which are close to Edmonton. There are lots of things we can do. We could, you know, bring in an economist. The Ziff group knows the gas plant facility rationalization, but that might be something we should do after we understand what a gas plant looks like. There are several economists. There's one in particular at the University of Calgary who has got a good sense of this and would be an academic who could give us some information. We could put groups together much like we did, especially at the end, cluster groups, sort of a panel, have some producer groups.

EnCana is obviously a leader in this field with the number of wells that they have drilled in the past and what they're doing for the future. There are bundles like having Shell come because they're doing the CNG and LNG work. Westport Innovations is a group that does a lot of that technical work. Jim Gray and Cequence Energy do a lot of work. They're actually looking at railcars, converting railcars to LNG and CNG.

So what do you want to see first? Then we can kind of regroup.

Ms Kubinec: I think the idea of looking at what a gas plant looks like may be a good starting point so that we kind of have an idea of what we're talking about. I think it would be a good place to start, and then maybe have the economist and someone from the university come and do a presentation.

The Chair: So who's in for a road trip?

Ms Fenske: Sure. It's far closer to home.

The Chair: Yeah. You could host us there, Ms Fenske. We'll come to your house for dinner. Okay?

Ms L. Johnson: Pies.

The Chair: Pies. Yeah, that's good.

Any feedback from the folks on the phone?

Okay. Well, with your permission, then, would it be appropriate for us to ask our clerk to contact Williams Energy and see what a convenient schedule might look like and get back to you? Who else? I mean, I would like to have a couple of groups here so that we can keep this ball rolling and then, you know, in a couple meetings sit down again and figure out what we want to do.

Mr. Casey: I think Maureen had the second point, being to have the economists come in and talk to us about the overall market on this. I mean, for us to go anywhere with this, we really need to understand that piece in way more detail than, certainly, I do.

The Chair: The professor at U of C that comes very well recommended – and I hope I don't ruin his name – is Ron Schlenker, something to that effect. It's in our list.

Ms Calahasen: Page 27.

The Chair: Yes.

Ms Calahasen: Madam Chair, I think that's a really good point, but I also suggest that if we're going to get somebody from the economic side from Calgary, we should get somebody from Edmonton just so that we get two perspectives like we always do.

The Chair: Do they have different perspectives in Calgary and Edmonton?

Ms Calahasen: I think so. They do.

The Chair: We will try to balance that out.

Ms Calahasen: And they do look different. But I understand Calgary is always right.

The Chair: I'm not going there with you.

Ms L. Johnson: This is moving down into the detail, representatives of the transportation industry, so the Alberta Motor Transportation Association and the people that would have to build the infrastructure for refuelling. It's just the 500 trucks that I passed as well driving to Edmonton today. Let's hear why the industry, which is a very cost-conscious industry, hasn't adopted this idea. So both sides.

The Chair: Would you like to, then, perhaps on the same day in a three-hour meeting or something, maybe two hours, hear from Shell, who's doing that work, from Westport Innovations, from Alberta Transportation, or from somebody in the trucking sector?

Ms L. Johnson: Not the Department of Transportation, the Alberta Motor Transportation Association. I was just on their website. I'll admit that my husband worked for a major trucking company for 20, 25 years, so I know the issue has come up several times in their boardroom.

The Chair: Okay.

Ms L. Johnson: He's no longer there, so I don't have a conflict of interest.

The Chair: Are you comfortable with the clerk, then, proceeding to find out more details about a field trip to Williams Energy and to find out if the professor at U of C is available and somebody from elsewhere, the U of A if we can find somebody or another economist, and bundle that together?

I'd also suggest, like we did last time, that if you can pick up the themes – and this is very helpful – then I can work with the working group to identify maybe some rough ideas of whom we could present along those themes and come back to you with a discussion document perhaps for our next meeting.

Mr. Casey.

5:00

Mr. Casey: Yeah. We've sort of got two pieces here, at least as I see it. We have an Alberta piece, which is the domestic market here, whether that is generation of power or vehicles, appliances, whatever. We've got this domestic market that we're talking about, this Alberta market, that maybe expands a little bit into B.C. and Saskatchewan. We've got this domestic piece. Then we've got our third bullet, which is, really, an international piece, so two quite different conversations, in fact completely different conversations.

I think that as we're looking at presenters here, we may have to think about slotting our presenters into doing a segment on maybe

the first two bullets or something that looks at the domestic piece, and once we've got a handle on the domestic piece, then look at that international piece and say: "Okay. Knowing that we can't use what we are producing domestically, then what's this international piece look like? What kind of volumes are we looking at that we could potentially export at the end of the day, after we maximize the domestic market?"

The Chair: The only piece that we'll have to think about is that an economist perspective may be like today's perspective, where it's really looking at both of those.

Mr. Casey: Sure.

The Chair: As long as you're comfortable with that.

Mr. Casey: I think the economist will, but I think that as we start to delve into these as far as presenters go, you know, the presenters that will talk about both those segments, really, are different people. I think that just as we're working through this, we may find we have to expand that presenters list a little bit, maybe specifically on that securing the market one, on the third bullet, or we may find it the other way around.

The Chair: The other thing I'm going to throw out is something that was raised at the last meeting and has been raised in the interim, the gas-to-liquids technology and Sasol. Mr. Khan, you've raised that before. Is that a group we would like to hear from?

Mr. Khan: I certainly would, yes. To further Mr. Casey's sentiment – and I agree with Ron – I think it does, very much. Our scope of work, if you will, is breaking down into sort of a domestic Alberta issue and more of a commodity issue and if we're going to examine the commodity issue, I think we certainly should take a very close look at the company, whether it's Sasol or a Sasol-like company, and see what their interests are in Alberta and how they can commoditize this abundant resource that we have.

The Chair: Bring it into the second, the export market, the export from Alberta market?

Mr. Khan: Yes.

The Chair: Okay. Good. That's good.

The cogen piece, the industrial cogen: MEG is kind of leading that. Is that something people want to hear about?

Ms Fenske: Could we go on a field trip there, too?

The Chair: Ms Fenske wants to go on another field trip. Can we do a double-header? Their cogen facilities are up in Fort McMurray-Conklin, aren't they? It would have to be two separate field trips, then.

Ms Fenske: Or a long drive.

The Chair: Or a long drive, yeah.

Any other thoughts? Any other things that you really, really want to hear about or hear from?

Mr. Anglin: I noticed that on the list of stakeholders we have the Alberta Utilities Commission but not the Alberta Electric System Operator. One or the other is sufficient, but regardless of what we

do with the off grid or on grid, we still have to be in compliance with all their rules and regulations, and it might be better to have the AESO on that list versus the AUC, depending on what kinds of questions we have dealing with the generation aspect.

The Chair: You're talking about the home?

Mr. Anglin: Yes. Even if you do a home microgeneration, there are all these rules and regulations that you have to meet. It is important that you do that. Even if you want to stay off the grid, you have to get your permits from the AESO.

The Chair: So why don't we add them as a stakeholder? Then I think, just going back to our hydroelectricity review, it may be the case where we can ask somebody a question for a written submission. That's an option, too.

Mr. Anglin: Absolutely. For a small microgenerator, like any one of us who would want to do this at our home, in order to invest that money, one of the things we have to make sure of is that we are in compliance, and to do that, we want to make sure that we meet the regulatory requirements. So there's that side of the equation that makes it an advantage to do it or not. It's a question that anybody who is going to do it will have to answer before they proceed with the project.

The Chair: Okay. Well, let's put their name on the list, then.

Just as before, this is a list that's not cast in stone, and it's not complete today – that is for certain – because we will learn lots as we go, and I suspect we'll have names to add to the list. If people continue to have names, please direct them to me, as you have in the past, and we'll get them on the list.

Any other thoughts? Any other recommendations? Otherwise, I think we should move forward with a couple of motions to firm up how we approach the next two meetings and instructions to our clerk and also with guidance on how you turn over to me, in consultation with the working group, the creation of the stakeholder list to propose to you.

Ms Calahasen: Before we go there, I was just thinking that on the U of A research, I would suggest Mike Percy, economist, Madam Chair.

The Chair: Thank you.

All right. Any other comments? Okay. Well, we need a couple of motions, and we don't have them crafted, so maybe I can just give you some rough wording here. If someone would like to move that the Standing Committee on Resource Stewardship agree to invite an economist from the U of C and from the University of Alberta and as well to contact Williams Energy to follow up on their invitation for a field trip for the next two committee meetings – so that would cover the next two – and that if there is a need to reschedule, the committee clerk work in consultation with the chair to find dates and times that are suitable.

That really doesn't work, so I'm going to have to start again. This is where my legal and English skills are not coming together very well. If someone would move that

the Standing Committee on Resource Stewardship agree to invite two economists, one from the south and one from the north, to make oral presentations on the current topic under review by the committee at the next committee meeting, date to be determined, and as well agree to follow up on the invitation by Williams Energy to visit their facility, at a date to be determined and recommended to the committee, and that the committee clerk work in consultation with the chair to find

dates and times that are suitable to the presenters and to the committee.

All right. Mr. Casey, are you going to move that?

Mr. Casey: Certainly.

The Chair: All in favour? Any objections? Anybody on the phone? The motion is carried. Thank you.

5:10

The second point, actually, beyond those two first commitments, is to work on a schedule for the recommendation to you for stakeholder presentations. Let me have a go at this again. I need somebody to move that

the Standing Committee on Resource Stewardship authorize the chair, in consultation with the working group members, to prepare a schedule of presenters and time frames to submit to this committee for review.

Moved by Mr. Sandhu. Thank you. All in favour? Any objections? All right. Carried. Thank you.

We have one more question here. Dr. Massolin, do you have any comments on the research requests that have come forward?

Dr. Massolin: Well, I just would like to point out to the committee that we're available to put together any research that you'd like at this point and, of course, later on. So if there's anything we can do, please let us know.

Mr. Casey: Here's one for you. I wouldn't mind knowing the level of microgeneration, small-scale generation, that is going on in the province today – I have no concept of that whatsoever – and in individual units. The total megawatts is sort of significant, but the number of individual smaller scale units is what I would like to get a sense of.

Dr. Massolin: Okay.

The Chair: Our very effective clerk is recommending that we have a motion on that. Do you want to turn that into a motion, Mr. Casey?

Mr. Casey: I certainly can.

The Chair: You've seen me do it twice now. I think it's time for somebody else to do it.

Mr. Casey: I think I can handle it. I move that we direct research to compile a list of the current small-scale generation facilities within the province of Alberta.

Mr. Anglin: Could I make a comment before we vote?

The Chair: Absolutely.

Mr. Anglin: What is the definition of small scale in Alberta?

Mr. Casey: I don't know. You were the one that put in small scale, Joe, so what did you mean by small scale?

Mr. Anglin: Okay. In Alberta it's referred to as microgeneration, and I would leave it broad enough for research to use both large and small, and if you want to narrow it, just use small microgeneration. If you're talking just about the home, then let's just call it small microgeneration. That's 150 kilowatts or less, and it would be your homeowners that would do that.

Mr. Casey: I'm happy to leave it at micro. I was just trying to copy what we had in our scope.

Mr. Anglin: If I could make a friendly amendment, just to change that one portion to micro, I think that would do the trick.

Mr. Casey: I think that's a friendly one. And that's coming from me, Joe, by the way.

Mr. Anglin: I've got to say that that's a first, and I want that documented.

The Chair: Okay. All in favour of the amendment to the motion? Anybody not in favour? So moved.

Do you want to vote on the amended motion? All in favour? Any opposed? Carried. Thank you.

Ms Calahasen: Thank you, Madam Chair. You were excellent.

Mr. Dorward: We're not done yet.

Ms Calahasen: Are we not done?

The Chair: Okay. Is there any other business?

Ms Calahasen: No.

The Chair: Are you sure, Ms Calahasen? Are you sure?

The dates for the next meeting. Our committee clerk will be in contact with you regarding the next committee meeting dates.

Would anybody like to move a motion to adjourn?

Ms Fenske: Yes.

The Chair: Ms Fenske. All in favour? Any objections? Thank you. The motion is carried.

[The committee adjourned at 5:15 p.m.]

