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The 28th Legislature
First Session

Standing Committee on Resource Stewardship

Natural Gas Production Stakeholder Presentations

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Standing Committee on Resource Stewardship

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Standing Committee on Resource Stewardship

Participants

10:05 a.m. Wednesday, October 23, 2013

[Ms Kennedy-Glans in the chair]

The Chair: Good morning, everyone, and thanks to everyone who's here in the room and to everybody who's phoned in. As you know, I'm Donna Kennedy-Glans, chair of this committee and the MLA for Calgary-Varsity.

I'd like to start by asking everybody here at the table to let us know who you are for the record. If you're substituting for somebody, please make note of that. Then I'm going to go to the phones. Thank you.

We'll start with you, Mr. Webber.

Mr. Webber: Certainly. Len Webber, MLA, Calgary-Foothills. Good morning.

Ms Calahasen: Pearl Calahasen, Lesser Slave Lake.

Mr. Bilous: Deron Bilous, MLA, Edmonton-Beverly-Clareview.

The Chair: Gentlemen, we'll have you introduce yourselves while we're doing this as well. Thank you.

Mr. Keys: Certainly. Patrick Keys. I'm with TransCanada PipeLines Limited.

Mr. Ronsky: Dan Ronsky with TransCanada.

Mr. Lemke: Ken Lemke, Stony Plain.

Ms Fenske: Jacquie Fenske, MLA, Fort Saskatchewan-Vegreville.

Ms Zhang: Nancy Zhang, legislative research officer.

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

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

Mr. Tyrell: Chris Tyrell, committee clerk.

The Chair: Wonderful. We also have some others here on the phone. I'll just call out the names of the people that I think are there, and if you can confirm that you're there. If you are substituting, make note of it.

Ian Donovan.

Mr. Donovan: Yes, I'm here, and I'm substituting for Joe Anglin.

The Chair: Gary Bikman.

Mr. Bikman: Yes, I'm here.

The Chair: : Do you want to elaborate, Gary?

Mr. Bikman: I'm from Cardston-Taber-Warner, and I'm representing myself, the one and only.

The Chair: Thank you.

Jason Hale.

Mr. Hale: Yes. Jason Hale, MLA, Strathmore-Brooks.

The Chair: We may have a few other people joining our committee.

Mr. Sandhu, I'll just get you to introduce yourself for the record.

Mr. Sandhu: Good morning. Peter Sandhu, Edmonton-Manning.

The Chair: Okay. Thanks.

We'll allow the video conferencers to introduce themselves as well.

Mr. Kist: Hi. My name is Greg Kist, and I'm the president of Pacific NorthWest LNG in Vancouver.

Mr. Barke: I'm Wilf Barke, and I'm head of commercial for Pacific NorthWest LNG in Vancouver as well.

The Chair: Wonderful. Welcome to our committee. We're looking forward to it today. Thank you for being here.

Mr. Barnes, do you want to introduce yourself and where you're from?

Mr. Barnes: Thank you. Drew Barnes, MLA, Cypress-Medicine Hat.

The Chair: All right. Everybody knows the drill here. *Hansard* runs the microphones, and everything is recorded, so try not to turn it on and off. If you can keep your phone under the table, we'll keep the interference down to a dull roar here.

Everyone has had a chance, I'm sure, to look at the agenda. If somebody would move that the agenda for the October 23, 2013, meeting of the Standing Committee on Resource Stewardship be adopted as circulated. Thank you, Mr. Lemke. All in favour? Any opposed? Passed.

The next thing we have to do is approve the minutes of the last two meetings. We've got two sets of minutes to catch up on. Would someone move that the minutes of the October 9, 2013, meeting of the Standing Committee on Resource Stewardship be adopted as circulated? Mr. Sandhu. All in favour? Any objections? Carried.

Secondly, we need a motion that the minutes of the October 16, 2013, meeting of the Standing Committee on Resource Stewardship be adopted as circulated. Ms Calahasen. All in favour? Any objections? Carried.

Okay. Now to the more fun stuff. We've had introductions from the four people who are presenting today. There's so much to cover on gas that we've decided that we would try to thematically dedicate meetings to particular issues, and today is, obviously, the issue of LNG export. What I would like to do – and I know you've had a discussion with Mr. Tyrell already. If you've got a presentation in the range of, you know, 15 minutes – if you go past 20, I'll probably call you out, but if you go up to 20, you're fine – where both companies present on what you're doing with LNG exports. We have a lot of questions, and we'll be asking you questions after your presentation. If there is a need later to follow up on questions that weren't answered, if you need to get back to us, or if we have further questions, you're now stuck with us. This is a relationship.

Anyway, I will turn it over to Mr. Keys. I know you have a PowerPoint, and everyone should have a copy. The folks on the phone: you should have a copy as well.

TransCanada Corporation

Mr. Keys: Well, thank you very much. We appreciate the opportunity to be here today and provide some remarks about TransCanada's activities related to LNG opportunities. As the slide deck before you shows, my role at TransCanada is as vice-president of commercial west in our Canadian and eastern U.S. pipelines group. I have commercial accountability for all of

TransCanada's gas pipeline assets in operation today in western Canada, and I'll give you a quick overview of those assets.

With me is Mr. Dan Ronsky, and he's our director of strategy and collaboration.

I will loosely follow the slide deck that we handed out. Some slides I will go through very quickly; others I'll dwell on a little longer. Three primary areas I'd like to talk about with you today. First, I'd like to give you a bit of background on TransCanada, just to give you some context for where we're at in the world of pipeline infrastructure for LNG. In particular, I'll give you a bit of a dive down on our NOVA Gas Transmission Ltd. system, or NGTL system as we call it. Lastly, I'll talk a bit about global LNG drivers, particularly export markets, recognizing that we're only in the infrastructure business for transmission at TransCanada, and then talk specifically about the opportunities TransCanada is publicly pursuing right now and has proposed for transmission infrastructure that connects west coast LNG projects in particular.

If I can flip you to the second slide, I'll apologize. Our legal department requires us to include this in most of our discussions. Certainly, I won't be reading it, but if I paraphrase it, it very lightly says that I may make forward-looking statements, and to the extent those come true or not, don't rely necessarily on what I say, particularly if you'd like to invest in TransCanada.

If I flip to the next slide here, I just want to give you a very high-level overview of TransCanada's overall North American businesses to give you a grounding. Primarily, the business lines consist of three divisions: our pipelines, both oil and gas, our power generation, and our gas storage. In relation to the pipelines, in terms of gas pipelines, it's one of the largest networks in North America, almost 70,000 kilometres of high-pressure transmission pipelines. We move an average of about 14 billion cubic feet per day, which is about 20 per cent of the continental demand overall.

I won't get into the oil pipeline details. There are some here, and no doubt any of you that have read the paper in the last week will have read the words "Keystone XL" more often than you care to, I'm sure, but that's part of TransCanada's portfolio in addition to its existing Keystone system.

Gas storage: we're now the third-largest operator in North America, with over 400 bcf of capacity in both Michigan and Alberta. We're now the largest private-sector power generator in Canada, with over 12,000 megawatts.

I'd like to flip to slide 4 now and provide you some context for how our infrastructure fits into west coast B.C. LNG projects. This is a simplified representation of what we call the NOVA Gas Transmission system, or NGTL system. It may be familiar to many of you. We've been operating here in Alberta, with this system particularly, for over 50 years. The system, using the combined assets of TransCanada and ATCO Pipelines, is now over 32,000 kilometres of high-pressure, large-diameter lines. It connects pretty much every producing area within the WCSB basin to the system and now transports over 75 per cent of total WCSB production. We have about a thousand receipt points and a thousand delivery points onto this system, over 400 tcf of storage for the WCSB as a whole. That brown outline, by the way, on the map: that's the graphical representation of the western Canadian sedimentary basin. The coloured representations, if you're not familiar with some of those names like Horn River, Montney, Deep Basin, and Duvernay, are mostly unconventional shale plays within the basin. It just gives you some sense of where they are geographically.

In the system as a whole we move about 10 and a half billion cubic feet a day onto the system in terms of receipts, and we're moving about 4 billion cubic feet a day within interbasin markets, mostly industrials like the oil sands, for example, and residential markets. We're moving about 5.5 billion to 6 billion cubic feet a day for export outside of the basin.

10:15

If we flip to the next page, one of the drivers that's associated with the NGTL system, that's fairly highly valued for some of the LNG proposals that are being advanced on the west coast, is what we call the NOVA inventory transfer hub, or NIT. Some of you may have heard of it. It's one of the largest liquid-trading points for commercial transactions with gas now on the continent. It functionally is a consequence of the commercial, contractual structure for these transportation services on the NGTL system. People take a contract to put gas on the system somewhere at a receipt point, and they take a contract to get gas off the system. They pay tolls, pipeline tolls, for that purpose.

But as soon as they actually put gas on the system and contact it somewhere, it goes into what we call the NIT energy hub. Think of that as a giant bank account that's encompassed by the entire pipeline system. It doesn't matter where they put that gas on the system. It could be in northeast B.C., it could be down at Waterton, it could be Zama Lake, for example. As soon as it touches the system, it's available for commercial transaction, for delivery anywhere off the system. It's analogous in some senses to banks, for example, and ATMs. If you put $100 in in Fort McMurray, you can go to an ATM, if you want, in Lethbridge and take $100 out. That's exactly how our NIT transfer account works. There's no charge for that account.

Right now that trading hub moves, as you'll see in the smaller graphic there, about six to seven times on a commercial basis what the actual physical volume is. We put about 10 bcf a day onto the system, it trades in the order of about 60 billion to 70 billion cubic feet, and then it is nominated off the system somewhere, either to an interbasin market, say the oil sands, or maybe to an export market at the Alberta-B.C. border, heading down to Kingsgate, for example, or perhaps Empress, going down to eastern Canada or U.S. northeast markets.

The reason I'm dwelling on this for some time is because this feature, we understand, is highly valued by many of the LNG project proponents because it gives them access functionally to all WCSB supply. Regardless of where it comes on the system, it can be delivered off and can be used to provide a supply base or to provide incremental supply for LNG markets.

If I take you to the next slide, I just want to have a brief illustration here in these two graphics of the supply potential before I discuss LNG particularly. What you see on the left is a graphic representation, again, of some of the natural gas plays that straddle Alberta and B.C. that are of particular interest to many of the LNG export players. I think you'll hear from Pacific NorthWest about their project, following me, and what they're doing in the Montney in particular.

I won't go through the statistics that you see on this graph, but the message I'll leave with you on the graph on the left is that there are massive amounts of unconventional supplies within the WCSB. I'm sure that's not a surprise to you, and you've probably heard that from many other presenters over the last months. At the end of the day there's more than enough supply to meet demand for most of these projects within the basin. Really, the question is: what's the price at which it's going to be produced and under what circumstances?

The graphic on the right there is meant to give you a sense of where we were about five, six, seven years ago before we got into horizontal drilling and fracking technology for some of the unconventional gas plays. As you can see, we had basically conventional and coal-bed methane – that's the CBM acronym –

reserves somewhere in the order of about 175 tcf, but with the advent of technology and the horizontal fracking that's been occurring in some of these plays, we're now looking at remaining resource potential that is well in excess of 500 tcf of gas. That's the combination, as you can see, of some of the unconventional activities that have been occurring. So the message there is that there is a lot of gas in the basin, and that gas can and does touch the NGTL system and becomes available through that system for export markets, including LNG.

If I flip to the next slide, this is a fairly busy slide. I apologize for that. What it's showing, fairly simplistically, are the announced greenfield and brownfield LNG projects in North America. In blue are the prominent projects that have been proposed in Canada particularly. You'll see there's just the one, Goldboro, on the east coast, but there are a large number of them on the west coast, centred around Prince Rupert and Kitimat predominantly. Many of the names are probably familiar to you. Pacific NorthWest LNG, of course, are the folks on the phone that will be speaking with you next. Some of the others in the list: Kitimat LNG, the Chevron Apache project; LNG Canada, the Shell-sponsored project, with its coventurers, Kogas, Mitsubishi, and PetroChina.

In terms of these proposed projects, as you'll see from the bullets on the right, the total capacity is far in excess of 20 bcf a day. Just to put that into context, as I said, we're only producing in the basin today about 12 and a half, 13 bcf. Obviously, not all of those western Canadian projects are going to go ahead. Lots of factors will determine which succeed and which do not. At the end of the day most of those projects right now are looking at in-service dates between about late '17 and 2022.

If we talk about the next slide here, number 8, about some LNG drivers – and perhaps our friends from Pacific NorthWest are more familiar with some of these metrics – right now almost two-thirds of global LNG demand comes from three Asian countries. Japan is about 37 per cent of global demand right now. Korea is a very larger player at about 15, 16 per cent of global demand. China is growing at a fairly rapid rate but about 6 per cent today. Current world LNG demand today in terms of bcf rather than metric tons is about 30 or 31 bcf per day. Right now the prognosticators, the forecasters, are suggesting that by 2030 that's going to double to about 70 billion cubic feet per day, so staggering volumes on a global basis.

A lot of dynamics are happening right now around the world. In a lot of the countries that had I'll call them traditional historic reserves supplying global LNG markets, those reserves are dwindling – countries like Indonesia and Malaysia, for example – whereas other countries like Canada, the U.S., Russia, Australia have entered the race and are all competing quite vigorously to secure the next tranche of contracts on a global basis. That tranche of contracts is coming up in the sort of 2016 to 2018, 2019 time frame both as some existing long-term contracts on the world stage expire and are up for renewal and as some of the short-term contracts that are turning over here about eight bcf a day are looking for new supply arrangements.

All of these projects in North America are chasing those markets right now. Buyers are looking for diversity of supply, and North America right now is an attractive market for a number of different reasons, everything from some of the economics of production, either on the Gulf coast or west coast of Canada, to the reliable markets, the stable political climates, and other factors that drive those projects.

If I can take you to the next slide now and drill down into some of the publicly proposed infrastructure that TransCanada is advocating. This is, again, a fairly simple graphic, but it represents four primary physical projects sponsored by TransCanada that are LNG related.

10:25

The next slide, if you're able to flip back and forth between the two, actually has the project metrics for each of the projects here. What you see on the slide – I'll just rotate through them. First off, on the bottom in the green is the Coastal GasLink Pipeline project. Again, this is the one for the proposed LNG Canada terminal on the west coast of B.C. That's Shell and its coventurers. I won't go into the metrics in detail on the next page. They're there if you'd like to peruse through them. The length of that pipeline is about 650 kilometres. Large dollars are involved, in 2011 dollars about $4 billion. It's looking to be in service around the end of the decade.

The next one up, the Prince Rupert gas transmission pipeline, is the one that will feed Pacific NorthWest LNG, our friends on the phone. The metrics, again, for that are similar to Coastal GasLink, a little longer, about 750 kilometres, and that length is pending their final determination of some of the coastal routing, that you see in the dotted, pink-orange colours on the west coast there, as they evaluate the feasibility of some of those routes. Again, it's a large-diameter pipeline, 48 inches, looking to commence construction in 2015 with a target of in-service around 2018. Cost in 2012 dollars is about $5 billion.

Both of these pipelines are private, merchant pipelines. They're subject to B.C. provincial jurisdiction on a primary regulatory basis. When I say that they're merchant pipelines, what I mean by that is that they don't provide utility service; they privately negotiate the contracts for service through the pipeline sponsors and the ultimate backers of those infrastructure facilities. They're not open access in terms of utilities that you might be familiar with.

If I shift to the next two projects, that you'll see on the map in the dotted blue, the north Montney main line and the Merrick main line, these are proposed extensions of the NGTL system. Both are to provide access to potential LNG projects. If I start with the north Montney main line project, our friends, again, on the phone from Progress Energy are the functional anchor shippers on that project. It's about 300 kilometres in length, a large-diameter pipeline again, 42-inch. The cost of that pipeline is about $1.65 billion. It's changed slightly from the numbers that you see there on the slide. This being an NGTL-system extension, it's not a private, merchant pipeline. It's part of the open-access utility system of NGTL, meaning that anybody that seeks service on that facility can apply for service through NGTL, and if they meet the terms and conditions of NGTL's tariff of services, it's available to them.

The last one on that graphic on slide 9 – the first portion parallels the CGL, or Coastal GasLink, pipeline – is the proposed Merrick pipeline. It's in the early development stages right now, in the assessment phase. NGTL has simply been asked by certain customers to assess the feasibility of proposing services on a pipeline that would terminate in the Summit Lake area of B.C., where you see the end of the dotted line on the graphic. Again, it's similar to the metrics for some of the other pipelines. It'll be between 42 and 48 inches, between 2 and 4 bcf of capacity a day, have similar costs, and a similar in-service date towards the end of 2018.

Then I'll flip to slide 11, mindful here of my time. At the end of the day there are many unknowns right now as to whether LNG is going to proceed or whether it won't. The next 12, 16 to 24 months are going to be fairly critical in terms of making determinations ultimately on final investment decisions for the proponents of these projects, and that will ultimately drive, of

course, whether or not a lot of this pipeline infrastructure is required and what will or will not be built to take supply to the west coast.

At the end of the day, these projects are going to materially impact the WCSB in many, many different ways. I've listed just some of the very superficial ones here on the slide, everything from development of supply and what's available within the basin not only for export but for intrabasin use, the price of the commodity within the basin and for export, the infrastructure, of course, everything from developing the resource in the fields – Progress, for example, is drilling at a furious pace right now on its lands – right through to the pipeline infrastructure and, obviously, the infrastructure on the west coast for the liquefaction plants themselves.

It's going to affect pipeline tolls, for example, in the NGTL system because of the large volumes that will move through the system – or not, if LNG doesn't proceed – right down to a subject you're all familiar with, of course, things like royalties for the provincial governments. In that context the governments will play a very significant role in the ultimate development of west coast LNG, everything from environmental regulation, infrastructure regulation, right through to things like taxes and royalty schemes that affect the production itself.

We believe at TransCanada – and we certainly are biased – that the NGTL system is really an energy hub. It can connect all aspects of the WCSB, whether it's unconventional or conventional gas, to export markets but particularly to premium markets once they're developed through west coast LNG and, in that fashion, can not only provide a stable, secure source of supply for the projects themselves but also offer potential opportunities for broader basin participants that aren't sponsoring particular projects to actually participate in the benefits of it as well.

The sign that I have there comes to what I like to call a hard left or a hard right on LNG development. Really, if it goes, again, significant impacts on the basin from top to bottom. If it doesn't, we've got the same significant incomes but under a much gloomier scenario for the basin as a whole. All of those reserves that are there in the WCSB may not be developed and may not be developed for a very long time, and it can affect infrastructure, prices, everything.

That concludes my remarks. I'm happy to answer questions at the appropriate time.

The Chair: Thank you very much. It's very helpful, and I know that the folks on the phone, who aren't here in person, will really appreciate the slide deck as well.

We're going to hold off on questions until after we hear our second presentation, and then we'll have questions. I'm already getting some hands up, so I'll give a call out for questions at the end of the second presentation.

I'll turn it over to our colleagues on the phone. I'm glad that our technology is working here. I'm sure you are, too.

Mr. Kist: Yeah, we absolutely are. Thank you very much.

The Chair: You've got about 20 minutes, and we are attentively listening here.

Pacific NorthWest LNG

Mr. Kist: Excellent. Hopefully, you can all hear me very well. Wilf and I are coming to you from sunny Vancouver. It's a beautiful day in Vancouver, and it's a pleasure to have an opportunity, Madam Chairman and committee members, to present the Pacific NorthWest LNG story to you.

As I said earlier, my name is Greg Kist. I am the president of Pacific NorthWest LNG, and Wilf Barke, who is here with me, heads up the commercial aspects of our entire LNG development.

It's really my intention today to go through a fairly short presentation that talks specifically of our project. We can certainly get into a long discussion about LNG supply and demand worldwide, but suffice it to say that Petronas, our parent company, is one of the leaders in the LNG phase and, obviously, very keen to see LNG developed in western Canada. I'll quickly go through a presentation that, hopefully, you all have in hand, and then we can open it up for questions at the end.

On slide 2 in your deck you can see that Pacific NorthWest LNG is owned by Petronas, which is the national energy company of Malaysia. It also owns our sister company in the upstream business, which is known as Progress Energy Canada. You may know that it is Petronas's plan to bring other partners into this project as well. Those will ultimately be fully integrated LNG partners in the entire LNG value chain. As you can see in the lower left-hand side of that particular slide . . .

Mr. Barke: I think they're just handing out the presentations.

10:35

Mr. Kist: Okay. If they're just being handed out, I'll wait till everyone's got a copy.

We're on slide 2 right now. You can see just a very simple chart showing Petronas, the national energy company of Malaysia, the two sister companies here in Canada, Pacific NorthWest LNG and Progress Energy Canada. Then Japex is a Japanese company that is a fully integrated, 10 per cent partner of the entire project. That means that they are actually, physically an offtaker, so they actually have a need for the LNG themselves in Japan, and they actually own 10 per cent of the reserves in the upstream business and, obviously, 10 per cent of the LNG facility as well.

On slide 3, just very quickly, just to take you back in a brief history, Progress Energy Resources was a mid-size, Calgary-based natural gas producer that entered into a joint venture with Petronas to develop three of Progress's north Montney properties in northeast British Columbia back in 2011. That joint venture moved along very well to the point that ultimately Petronas chose to acquire the entire company, which it did in June of 2012, as you may know, went through the Industry Canada process and ultimately was approved by Industry Canada at the end of 2012. As we formalized the initial work we were doing with the LNG project and during that joint venture, we created Pacific NorthWest LNG, which is the business that's in Vancouver and which is managed by myself and Wilf Barke and a number of other senior members here in Vancouver. So the structure of Petronas's business today in Canada is through an LNG business and the upstream business as well.

Just turning to slide 4, this just gives you a very quick look at all of the current NEB export licence applications that have either been approved or are in process right now. Certainly, there are big aspirations on the part of Canadian players to the point that if you would in fact see all of those LNG developments happen as planned, we would be exporting 15 bcf a day, essentially equivalent to what Canada produces today. If that happens, we would certainly be one of the largest LNG suppliers world-wide. We certainly don't believe all of those projects will happen, and we certainly won't go through them to define why some will and some won't. We just want to give you some insight today into what really makes a successful LNG project and, ultimately, why we think we're going to be successful in hitting a final investment decision currently planned for the end of 2014.

If you turn to slide 5, this really is a look at all of the key components that really have to come together for you to have a viable LNG project. It starts in the upper left-hand side of that particular graph with the upstream natural gas resources. In our particular case Progress Energy has a significant land base in the north Montney, which the TransCanada guys have talked about, with plans to deliver two bcf a day from the north Montney field to our LNG facility. Those plans are under way. I think Pat indicated that Progress Energy is very aggressively drilling today. In fact, they have 25 rigs operating in northeast British Columbia currently, which represents about 45 per cent of all of the drilling activity in British Columbia. So you can see that Progress-Petronas is very active in currently proving up the reserves to support this project.

The second component is moving that gas to the west coast. As TransCanada talked about, that's through a pipeline that's being developed by TransCanada for us. That will take the gas from northeast British Columbia right to our facility planned for the Prince Rupert region on the west coast. I'll talk a little about the LNG plant here in a moment as well and the size and the timing of when they will be coming on.

Then the next component is the shipping. Albeit the cargos will likely be sold at the outlet of the LNG facility, meaning that all of our offtake partners will arrange all of their own shipping, it's good to know that Petronas actually has one of the largest LNG carrier fleets in the world, so a very experienced player in the LNG shipping world, which I'll talk about here in a few minutes as well.

The last component on the lower left-hand side is LNG offtake. In fact, probably the most key aspect of this whole thing is actually, physically having buyers, physically having offtakers for your LNG project. Our project here isn't intending to sell spot LNG. Our project here is to fully integrate partners through the entire value chain, so owning the reserves right through to being an offtake partner. Certainly, Petronas's plans are to continue to invite additional offtake partners into the project, where you could ultimately see Petronas owning 50 per cent of the entire project and the other 50 per cent being held by an amalgam of three or four other potential LNG partners in that chain as well.

I'll quickly turn to slide 7 – I won't dwell a whole lot on this – just to point out that TransCanada Corporation was selected to design, own, and operate the Prince Rupert gas transmission project, and they're working very aggressively to make that happen, with ultimate plans to initially ship two billion cubic feet a day by late 2018, early 2019 to the west coast, and then with expansion capability we plan to expand our facility as well.

Slide 8, just quickly, shows you the original conceptual route map that we have been using. The important part – and I think the guys from TransCanada indicated that to you as well – is the interconnect back into the NGTL system. We think that's a real key aspect here and a really strong risk-mitigation tool both from a plant operability standpoint and also to access on-grid gas, which, in our view, is a very important aspect of, as I say, mitigating any risk in terms of production or reserve showing up for the party. A key aspect of our project here is that not only will our reserves be tied directly in, but we'll also have access to on-grid gases as we may choose to access that in our project.

Slide 9. As I mentioned, Petronas has one of the largest LNG carrier fleets in the world. They have about 30 carriers. They're currently in the process of ordering in another eight LNG carriers. Some of those will service the LNG project planned for the west coast. Petronas has been a long-time player in the shipping space as well, so we expect that many of the ships that will actually come to the port will likely be Petronas ships. Certainly, the track record of Petronas and, frankly, the shipping industry and the LNG industry is a phenomenal safety record. I think that as an industry, certainly as a shipping industry, Petronas, you know, very much likes to point out an incredible safety record of the industry and of Petronas themselves.

I'll quickly turn to the plant, which is slide 11. The site is situated in the Prince Rupert Port Authority's boundaries. Prince Rupert Port Authority manages an industrial port on the west coast of British Columbia, right approximate to Prince Rupert. We are planning to build our facility on something called Lelu Island, which is just south of Ridley Island, which is where most of the current development is within the Prince Rupert Port Authority. Our initial plans are to have two liquefaction trains, both capable of six million tonnes per annum, effectively each taking about a bcf a day of gas. Those would be some of the largest trains in the world today at six million tonnes per annum, so it certainly is a very large development. As well, because it is an island, we'll have to build a bridge back to the mainland. It'll be a very short bridge given that the distance between Lelu Island and the mainland is actually very short, but we currently have plans to build a fairly long jetty to reach out to the deeper water. I think you can see a bit of that in terms of the layout there on the slide.

10:45

If you turn to slide 12, you'll see a little picture there of Lelu Island, just a graphic design of what the plot would look like, showing you two plus one trains, so basically two trains as part of the initial development and then expansion capacity for a third train, along with two plus one LNG tanks, and then all of the other ancillary offices, office building, and material off-loading facility given that a lot of the materials, the modules, that have come to the site will likely be ocean bound. That's our current plan in terms of what the plot looks like.

If you turn to slide 13, that will just give you an indication of our timelines here. It is a fairly aggressive timeline. The regulatory process is slated to see us through to the end of 2014. Because we are in a federal port, the CEAA 2012 regulations take the lead, but the B.C. environmental assessment office is working right alongside the B.C. EAO in the environmental assessment process. At the same time we are doing the front-end engineering and design work. That work is actually being conducted for us in the U.K. and in Rome. It's a triple FEED process. Effectively, what that means is that we've got three engineering companies designing it, it'll be a competitive process, and all of those three engineering companies will ultimately submit a bid for the engineering procurement and construction of the facility themselves.

That's all planned to come together at the end of 2014 with a final investment decision. A final investment decision is the key milestone in any LNG project. It's the bringing together of the reserves certification, underpinning a 20-year agreement; your pipeline is approved and ready to be constructed; your plant is approved, ready to be constructed; and all of your offtake is lined up. When you've got all of those pieces together, you've likely got a bankable project as well, which is obviously what we would hope to be able to do as well as to secure project financing in and around that time, so a very aggressive timeline. We're effectively 12 months away from a final investment decision, but all of the pieces are coming together very nicely to lead us to that point.

The later construction would typically run about 48 to 52 months in time, so that effectively would lead us to an end of 2018, early 2019 first cargo shipping from northwest British Columbia, again, a fairly aggressive timeline, but I think that if you compare that to some of the other projects, amongst, say, ourselves and LNG Canada, which is Shell, and probably the

Chevron project, we're probably all in a not dissimilar time frame in terms of driving towards the finish line.

Slide 14 indicates to you here, just very quickly, that we do have to pass a very rigorous environmental assessment process that takes a look at both the land and the marine sides of things. As I indicated, because we're in a federal port, it means we're under the Canadian Environmental Assessment Act, but we're obviously working with the B.C. environmental assessment office as well.

One of the unique aspects is that this is the first LNG export facility to undergo a CEAA 2012 environmental assessment process. The other one that went through an environmental assessment process, the Kitimat project, was a B.C. process. So it's a bit of a new test of the CEAA processes, but that process is working out very well. CEAA has statutory timelines associated with their environmental assessment process, so that's what gives us confidence that we're going to hit our timelines at the end of 2014.

Slide 15. Just to very quickly touch on the First Nations side of it, it's a very critical and important aspect of our development. Within the Prince Rupert Port Authority there are five First Nations aboriginal groups that we are consulting with as part of our project. As you know, these are nontreaty areas, so obviously there's a significant amount of work. We've been doing work, negotiations and engagements, with those First Nations groups for the better part of the last two years, actually since our joint venture program started. It's very interesting, in our minds, you know. All of the developments going on out here: the First Nations are certainly supportive of seeing these developments. Obviously, they have lots of questions and things that they want addressed around airsheds, what the development will do in terms of how busy the area gets, what that means in terms of social impact. Those are all things that are being assessed as far as the environmental assessment process, which does look at social impact as well.

I'll take you to slide 17 now and just quickly talk. In addition to the First Nations, there are a significant number of stakeholder groups that we are having engagements with. We just listed some numbers out there, right down to individual landowners. We actually get out, and we actually meet with these particular landowners. We talk with the fishermen groups that are out in that particular area and try to fully understand any concerns that they may have and any challenges and, again, try and ensure that we're addressing all of those through the environmental assessment process.

Then slide 18 just gives you a bit of a graphic as to all of the groups that are within that area, starting with the city of Prince Rupert and the district of Port Edward. Port Edward is a little town of about 500 people, which is just immediately adjacent to our island, right on the mainland, so it's certainly one of the key stakeholders that we continue to engage with. You can see from that chart there's just a whole amalgam of different groups that we are continually in engagements with.

That's just very quickly a bit of a look at our particular project. We think we have all of the pieces to bring together a successful LNG project. Our parent, Petronas, is a long-time supplier of LNG and, in fact, has been supplying LNG to the Japanese market since 1983, when Petronas shipped their first LNG cargo out of their facility on the island of Borneo in Malaysia. So a long-time supplier, a very well respected player in the LNG space. They're very eager, obviously, to see this development happen in Canada given that they've invested approximately $6 billion initially through the acquisition of Progress Energy. As you probably saw in the announcement last week by the Prime Minister of Malaysia, the plan is basically a $36 billion investment in British Columbia and western Canada to make this LNG project happen.

So that's just very quickly a brief intro to our project, and I'd be happy to turn this back over to the chair.

The Chair: Thank you very much, gentlemen. That was really helpful.

A couple of colleagues have joined us here, so I'll ask Mr. Casey and Ms Johnson to introduce themselves. If there's anybody else on the phone, I'll follow up with that.

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

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

The Chair: Anybody else show up on the phone? Okay.

I've got a question list here, and if you can direct your questions to whomever you would like to have answer them.

Ms Fenske, you're first on the list, and I'll just take questions from there. I will come to you guys on the phone after this first question is asked and get your names on the list as well.

Ms Fenske: Well, thank you very much for both presentations. I believe that my question should be directed to Mr. Keys, but, Mr. Kist, if there's something that you'd like to add, please feel free at the end. I represent an area that is looking to establish a petrochemical cluster, certainly to add value to all of our natural resources before they leave our country. There are three parts to the question. I will ask it, and then I'm sure you can sort of weave the things together.

What I'm looking at is whether or not there's an opportunity to bring some of that liquid natural gas from B.C. back to Alberta's Industrial Heartland or even anywhere else to be able to strip it and to be able to use some of the chemicals that are necessary before all of this LNG leaves the country. You know, I guess what we're looking at is to have some of that stripped. Does it have to be as wet as it is for you to sell it to the buyers that you are courting currently? What do we as a government need to do to be able to encourage that? I don't think it's just Albertans who are looking for extra value for their natural resources. It certainly could be part of the natural energy strategy that Premier Redford is looking to sit down on with the other provinces. I just want to keep things at home, and then we can sell them after we do some chemical changes.

10:55

The Chair: Mr. Keys, if you please.

Mr. Keys: Sure. Perhaps I'll start with some comments, and then if Mr. Kist has something to add, he can jump in. As you're no doubt aware, there is existing infrastructure today – straddle plants, extraction facilities – in Alberta particularly, many of them straddling the NGTL system to extract the liquids from the gas before it moves to market.

I know that at TransCanada we're continually looking at ways to try and maximize the extracted liquids from those volumes before they're sent to markets, particularly markets today like oil sands, as an example, that don't value liquids-rich, high-heat-content gas but can burn and, in fact, have a preference to burn low-liquid-content gas.

There are a number of facilities being proposed. You may be familiar with some in the province as well. To the extent that gas comes on, for example, to the NGTL system in an area of the province where it can access those existing or proposed straddle facilities, they may indeed be stripped and the liquids extracted

before gas is moved to export delivery points, whether it's LNG or otherwise.

In terms of the LNG projects themselves, each of them is looking at different heat-content requirements for the projects. Some are higher; some are lower, depending on the ultimate end-use market. For example, my understanding is that Japan requires a higher heat content in LNG than some of the other markets do. For those project proponents: they make decisions as to whether or not they do want to strip out the liquids in the province first or whether or not they want to move higher heat value gas to the export points. Again, Mr. Kist may have some thoughts about Pacific NorthWest LNG in particular.

I did want to come back to your very first question, though. I'm assuming you're asking about the liquids that are entrained within the gas streams now as opposed to the actual liquefied natural gas products coming back from the west coast.

Ms Fenske: Yes. Sorry.

Mr. Keys: Okay. My understanding is that it would be uneconomical to try and bring that liquefied natural gas from the liquefaction facilities back into an interior market of some kind. Instead, the economics that drive smaller liquefaction projects – and there are some in Alberta for things like trucking and whatnot. You may be familiar with those, where they liquefy the gas now and actually distribute it in that LNG form.

The Chair: Maybe just to be clear, though, the question is around the rich gas versus the lean gas and where the liquids get stripped out. I think that's a pretty big question. Do you want to add more to that? Or maybe we'll turn it over to Mr. Kist and see if you want to add more after he speaks if you wish.

Mr. Keys: Sure.

The Chair: Any comments there in response to that question, Mr. Kist?

Mr. Kist: Yeah. Absolutely. You know, clearly, we want to maximize the value of the resource, so in our particular case our initial plans are to try to leave that gas as rich as we can, as rich as can be processed through the facility, because obviously the premier LNG markets like a very hot stream. But when you work that back up into the upstream, clearly the condensates will be pulled out and likely sent back to Alberta given that that's a premier market for that. We'll likely try and leave as much of, you know, that heating value entrained in the stream because that allows us, ultimately, to access the premier LNG markets. To the extent we can do that, we're going to obviously attract premium pricing for our LNG product, which, ultimately, in our view, is to the benefit of the resource owner, certainly in the case of British Columbia.

I don't know how helpful that was, but that's the way we look at it.

The Chair: Thank you.

Any further response there, or do you want to continue on?

Ms Fenske: To that, part of my question is: what do we as a government need to do to be able to encourage that some of that premium product continues to be used here in Canada?

Ms Calahasen: In Alberta.

Ms Fenske: In Alberta specifically, yes.

Mr. Keys: You know, one of the things I mentioned before is that there are proposals for additional extraction facilities in Alberta right now. An example: we're dealing with entities that are in the pet-chem business here in Alberta – I can't disclose exactly who they are – who are looking at opportunities to put extraction facilities on some of the infrastructure coming across from northwest Alberta to oil sands specifically.

As you develop resources in the unconventional plays up in northwest Alberta and northeast B.C., a lot of that physical gas will ultimately flow to intra-Alberta markets, oil sands being about 3 and a half bcf a day right now, and there are opportunities to strip the liquids out of that gas, as an example. To the extent that the fundamental economics are there, individual private entities will probably pursue that.

In terms of government initiatives to try and encourage that development, as a pipeline company we really don't choose sides in that respect. We try and provide that transportation service, at the end of the day, to those parties that both request and qualify for it. My expectation is that there are policies around ethane extraction or liquids extraction – royalties, that kind of thing – that the government, particularly in Alberta, has historically explored that would probably be useful in encouraging those kinds of new facilities being constructed.

The Chair: Thank you.

On my question list here I've got Mr. Sandhu, Mr. Bilous, Ms Calahasen, and Mr. Lemke, but I will go to the phones and just ask if any of you gentlemen want to have your name put on this list right now.

Okay. We will continue.

Mr. Sandhu: My question to Mr. Kist: do you foresee shipping any Alberta gas while you're in LNG development?

The Chair: Mr. Kist, do you envision taking any Alberta gas in your LNG export project?

Mr. Kist: That's absolutely a possibility. I think that's, you know, the importance of the interconnect, in our view a seamless interconnect, back into the NGTL system, as TransCanada indicated. Certainly, our initial plans are to develop our north Montney resource in northeast British Columbia with the hope and plan that that would fully satisfy our needs. In our view, connecting back into the NIT system just provides us with a whole lot of tools, first off from an operations standpoint but potentially from an economic standpoint as well. Obviously, it would give you the flexibility to decide to drill or actually purchase gas on the system, so it will give you that flexibility, ultimately, to make an economic decision as well. It's very possible that we could see Alberta gas flowing out to our facility. That's a possibility.

The Chair: TransCanada, any further comments to that point?

Mr. Keys: No. I don't think I have anything to add other than that, perhaps from a pipeline perspective, we don't colour-code the molecules, B.C. versus Alberta. They get commingled into the NGTL system, and then they're just physical flows that are delivered based on area supplies. But the commercial constructs may not follow the physical constructs, where the molecules go.

Mr. Bilous: I just have a fairly quick question for Mr. Kist, not so much about Pacific NorthWest LNG but about your parent company, Petronas. Is that a state-owned company?

Mr. Kist: Yes, it is a state-owned enterprise, the difference being that the management of the company reports to an independent board of directors. Yes, they're primarily Malaysian. They basically pay a dividend back to the country of Malaysia, but they don't go back to the state for capital funding. They access their own financing, their own funding, through their own cash flows and through their own other sources. Yes, they are a state-owned enterprise, but they very much operate as an independent type of company.

Mr. Bilous: That's what I thought, but I wanted to just note and for my colleagues to note as well that Petronas has a unique set-up or governance structure but is a very, very successful and highly profitable company.

11:05

Mr. Kist: Yeah. You know, if you just looked at the pure numbers, I think they rank about 70th on the Fortune 500, but more importantly they're about the 20th most profitable company on the Fortune 500.

Another distinction to be made in our project here is that the two Canadian companies, Pacific NorthWest LNG and Progress Energy Canada, are structured as corporate entities, which means we actually have independent Canadian directors on both boards as well. That's a bit of the oversight that Petronas committed to Industry Canada and, obviously, to Canada, to manage ourselves in a way that includes independent voices. As an example, with our particular company, Pacific NorthWest LNG, our two independent directors are Jackie Sheppard, who was formerly with Talisman, and Jack Crawford, a long time with Amoco, who was in fact involved in one of the very first LNG projects that was ever proposed in British Columbia. They act as an independent voice as well on our boards.

The Chair: Thank you.

Ms Calahasen: Well, I'm going to take a different tack. Thank you very much, first of all, for coming to present to us. We appreciate any and all information we can get about what needs to be done in terms of making sure that we make the resource available to Albertans and Canadians but also to be able to look at other markets. Thank you very, very much.

There are a few questions that I do have, Madam Minister. I mean Madam Chair. Gee, I just promoted her.

The Chair: Thanks for the promotion.

Ms Calahasen: She should be promoted.

As you know, there's been some real concern about pipelines across both Alberta and B.C. and wherever else. I know that there have been different tacks that have been taken by various companies to address the issue of not only safety but also environmental concerns. I'm just wondering. Can either one of you, whether it's TransCanada or Pacific NorthWest, tell me, when you say offtakers looking for long-term contracts and political stability, what that political stability entails in terms of offtakers and looking towards what could not allow them to be involved in this and what you're doing in terms of pipelines?

Mr. Kist: If you could repeat the question. I wasn't able to hear it all that clearly here.

Ms Calahasen: Okay. Let me see if I can restate it. It is my own question; it's not a written question. As you know, there are all sorts of concerns across Alberta and even B.C. as well as across Canada about pipelines and moving the petroleum or oil or gas or LNG to markets. Some of the concerns have been not only with safety but also environmental concerns. On page 9 you indicated: "Offtakers looking for long term contracts and political stability." If they're talking about political stability, what does that entail in terms of making sure that we address those concerns that those offtakers would be concerned about? I guess that's a different way of putting it.

Mr. Kist: Well, if I can just try and take a run at that, I think that's one of the key aspects in our particular project here, where you've got a full integration of all of the interests of all of the offtakers. I know we've talked about 20-year-type agreements. These would be 20-year-type agreements in every aspect obviously – our pipeline agreements, the agreements pinning our pipeline with TransCanada, the offtake as well – but it's actually beyond that. These are offtake partners that are thinking 20, 40, even 60 years out. The reason that they're investing in Canada or looking at Canada is because of their belief, first off, that the scope and scale of the resource is sufficient to meet their needs but also that we're politically and fiscally stable and that we have an ability to actually make these projects happen and ensure that that supply is available to them over the life of these particular projects.

Canada is a higher cost jurisdiction, but when you look at a fully risk-adjusted project, security of supply for Japan, as you can imagine, for Korea, Taiwan, key LNG markets, is a critical aspect. The reason they want to partner with us is because they can see us fully integrating all of these aspects of this project over, as I say, a 20-, 40-, 60-year-type agreement.

The safety aspect of it, the environmental aspect of it. Obviously, from our perspective, we're going through a very, very rigorous environmental assessment process, but even before that, we actually ourselves are concerned about the environment, like everyone else. What we've asked our FEED contractors to do is to actually design an LNG facility that is the lowest emission facility anywhere in the world. Those are the sorts of things that we're doing right off the bat to try and demonstrate, obviously, that, you know, we're focused on ensuring that we act not just as a good corporate citizen but actually act as a citizen that will be here for the long term to the benefit of the communities that we're in.

Ms Calahasen: Going further, you know you're dealing with some First Nations no matter where you go in developing pipelines and trying to move this resource. Could you tell me what strategies both TransCanada as well as LNG are utilizing to be able to address the issue of First Nations as you move across?

Mr. Kist: I'll take a run at that from our side, and then I think I'll let Patrick touch on it from the TCPL side. We're working very closely with the First Nations, recognizing that for us a significant part of the population – ultimately, we believe our plant operators, our people actually physically working in our facility, are going to be First Nations. We're working very closely with the First Nations. Not only is there an impact benefit agreement that ultimately will be in place, but also, you know, when people talk about capacity building, we're looking at it right down to, "We need technical operators in our facility," and those will likely be First Nations folks. What we're doing today is working closely with those First Nations to determine, first off: what do they have in terms of a workforce, and what skills and training are necessary to get them up to speed to work in our facility?

When you look at the whole spectrum of working with the First Nations, engaging with the First Nations, yes, it starts with impact benefit agreements, but I would say that it goes much deeper,

through procurement opportunities that we're creating for all First Nations in northeast and northwest British Columbia, not just the Coast Tsimshian, whom the Crown has the obligation to consult with and accommodate, but right down to looking at our training needs. In fact, we're assessing that today. Even though my plant isn't going to start for another six years, I need to think about who I'm going to hire today and how we get them trained to operate an LNG facility. Nobody has operated an LNG facility in Canada before. The First Nations are absolutely key, frankly, to our success in the Prince Rupert area. Part of what we're doing today is working closely with them to determine, you know, what they can in fact provide for us.

Mr. Keys: I agree with what Mr. Kist says. The First Nations communities across Canada are significant and substantive stakeholders in a lot of these linear infrastructure projects at the end of the day. For pipelines in particular, TransCanada, as you saw from the map, has fairly extensive holdings in Canada, so we interact and have interacted for a very long time with about 140 to 150 First Nation communities across Canada that touch or are affected by our infrastructure.

One of the things that we try to do with pipeline projects in B.C. specifically is to initiate early and maintain extensive engagement and interaction with the First Nation communities. That's for everything from learning how our projects might potentially impact them right through to seeking a sharing of information on things like traditional knowledge, for example, and participation in environmental studies and whatnot that we'll conduct.

Mr. Kist also mentioned something that's fairly significant for TransCanada in the projects we do, and that's capacity building within the First Nation communities. A lot of the time that is attained through benefits agreements of some form with those communities, whether it's to assist in infrastructure in the community itself that might be related to a project or whether it's to provide a certain level of job opportunities for those communities in the projects that we do and funding to build the capacity for that participation.

11:15

Ms Calahasen: Thank you.

The Chair: Thank you.

Next on my speaker list is Mr. Lemke.

Before we turn it over to Mr. Lemke, I'm going to ask David Swann to introduce himself for the record.

Dr. Swann: Thanks very much, Donna. David Swann, Calgary-Mountain View. Sorry I'm late for the meeting.

The Chair: All right. We're glad you're here.

Is there is anybody on the phone who has a question?

Dr. Swann, do you want to be put on the list?

Dr. Swann: Not at this time, thanks.

The Chair: Okay. Mr. Lemke.

Mr. Lemke: Thank you, Madam Chair. I have a couple of questions. It was in my constituency that CN had a train derailment on early Saturday morning, and I learned just enough to be dangerous. One of the things that was discussed at our first briefing on Saturday morning with CN, Transport Canada, and ASERT was the fact that we were lucky. I don't remember who brought it up – this is getting back to my colleague's question about stripping. Whoever it was mentioned that we were very fortunate – this was liquid propane, of course, not LNG – that there wasn't very much condensate in the material because of air quality, I assume.

That leads me to the question: is it much safer if when you're doing pipeline transmission, liquid natural gas is stripped of condensate? In the event of a spill or an explosion does it make it safer if it's shipped after being stripped, or not?

Mr. Keys: Recognizing that I'm a commercial guy, not a technical guy, I'll take a shot at that. From a pipeline perspective, most of the heavy ends of natural gas are stripped out in processing plants in the field. Some C_3s but certainly C_4 plusses are stripped out and generally put into either oil pipelines or condensate pipelines of some kind, sometimes trucked, for example, or taken by rail. Those heavier ends generally don't move through sweet natural gas transmission systems because they're not considered to be pipeline quality spec, or specification, gas in the first place. Some of the concerns that I think you referred to simply wouldn't be an issue for high-pressure gas transmission lines.

Even when you are carrying some entrained liquids though at pipeline spec, most of the time if there is some form of an incident with a pipeline, you'll get either of two outcomes. One will be a line rupture, where there's no ignition and it's vented to the atmosphere. Generally that's a very short-lived event because most transmission pipelines have fairly extensive safety features.

For example, our system will have block valves along the line in various locations. When there's a loss of pressure, those valves close, basically isolating a section of line that might have an incident on it. The gas will vent generally to the atmosphere very quickly and, hopefully, with no impact to people or public property and whatnot. If there's an actual ignition at that kind of a line rupture or incident of some kind – again, that happens very quickly with natural gas – it burns off in a very short period of time. It's not, as I understand, like the incident that they're still struggling with in Gainford, where those propane cars continue to burn days after the initial accident.

Mr. Lemke: Thank you.

The Chair: You said that you had a couple of questions.

Mr. Lemke: Yes. My next question has to do with – during your presentation, Patrick, you mentioned two different scenarios. One, I believe you talked about a time frame of a year and a half to two years, where if these projects were to go ahead, the opportunity would look very rosy. Then you indicated that if they didn't go ahead, it could look pretty gloomy. I'm assuming that the world needs natural gas. So if these projects don't go ahead – you also indicated Russia and Australia were major players in the market – if we're not supplying it, then I'm assuming that they are, that people are buying their natural gas from them rather than us. Is that correct?

Mr. Keys: The short answer to that is yes.

Mr. Lemke: Okay. So when you talk about a time frame of a year and a half to two years, is that looking at the possibility that Australia and Russia are doing something now that may make our market here less desirable?

Mr. Keys: Again, the short answer is yes, and I can elaborate on that. That time frame, from my remarks, in any event, relates primarily to final investment decisions, as Mr. Kist was referring to for their project. They're expected to be taken sort of in the time frame of late 2014 into mid-2015 by many of these projects.

In order for them to make that decision, as Mr. Kist said, they're looking to line up all the constituent components of their projects.

Part of that, of course, is pipeline approvals, and we're trying to secure approvals for projects like the north Montney main line on the NGTL system that will hook in the Prince Rupert pipeline to feed Pacific NorthWest LNG's facility. We're trying to get those regulatory approvals in that same time frame, so that's why the time frame itself is critical in terms of making those final investment decisions.

But on a global basis other countries are also competing quite heavily. Russia is one. Australia is building several LNG projects right now and competing for additional markets. The U.S. is another prime example. The U.S. Gulf coast has a lot of brownfield facilities right now that are vying quite competitively to get in on the world market as well.

The U.S. in the last half a dozen years has experienced the same shale wave as Canada has through places like Barnett, in Texas, or Marcellus, as you've probably heard about, or Utica. They're also largely awash in additional gas and are moving at various locations in the States now to get authorizations through their federal regulators to export LNG, the same as Canada is trying to do. Different project economics are associated with, for example, Gulf coast, and driven by things like transit distance, for example, on boats, versus construction of liquefaction facilities, that kind of thing.

But it's all a fairly intensive competition right now on a global scale. Russia is in the same boat. East Africa has been emerging in the last couple of years as a potential supplier of LNG as they begin to develop offshore reserves themselves. So that's part of the competitive race that Canada is in to land, ultimately, those end-use markets on a long-term basis and ensure that all the pieces of an LNG puzzle can be put together, from secure supply through the transportation corridor right through to liquefaction.

Thank you.

Mr. Lemke: Do you have anything to add, Mr. Kist?

The Chair: Mr. Kist, do you want to comment?

Mr. Kist: The only thing I would add is just a bit of a matter from our perspective. Again, Patrick said that this is global competition and, you know, Canada certainly has some unique attributes that the buyers and LNG users would identify as kind of key, obviously. I talked about political fiscal stability. When you compare that to east Africa, which will obviously be a place we're in competition with; Russia, the same thing – those are our competitors, and time is of the essence. We effectively see growth in LNG demand, which currently, in our view, is a 2017 to 2020 time frame.

There really is a shortage of cargos in terms of the demand, and we really want to fill that time. If we can, we will actually capture premium markets. It's not that we wouldn't be successful beyond the 2020 time frame. It's just, again, you're going to be competing against more cargos, and hence your overall returns will be challenged in that environment. I think that when you move into that environment, your project economics become more marginal. Hence, you know, as I talked about, initially a $36 billion investment before we ship the first cargo of LNG – we want to ensure we're securing the premium markets to protect that investment.

11:25

Mr. Lemke: Thank you, gentlemen. Thank you, Madam Chair.

The Chair: Thank you.

Mr. Webber.

Mr. Webber: Thank you, Madam Chair. I didn't realize I was up so quick. I would like to ask you, Patrick or Dan, a question regarding your presentation. It's asking you a little bit about some forward-looking information, and I won't put undue reliance on your comments there. I'd like to ask you a bit about your graph here on page 6 with regard to the huge increase in shale production since 2005, mainly due to the horizontal drilling and the fracking technology that has been developed.

Then I look at your page 8 slide here, which looks at the global drivers. Places like Japan, Korea, and China are in huge demand for natural gas. With respect to, you know, places like Russia, Australia, U.S.A., they're all world players now in natural gas. Is it mainly due to the technology that has been developed within the last few years in fracking and in horizontal drilling? If so, are there opportunities for Japan, Korea, and China to develop that technology as well and increase their local supply of natural gas? Do you foresee that happening in the future? I know it's hard to look into a magic glass ball. Maybe just your thoughts on that, both Patrick and Dan.

Mr. Keys: Sure. I can start. On a very macro basis the answer to your question is yes. The significant increase in reserves that we've seen in the last half a dozen years in North America is functionally attributable to new technology in order to unlock those unconventional reserves through fracking and horizontal drilling predominantly. There are other areas in the world that have those kinds of unconventional plays accessible to them. Some areas will develop them; some won't. There are political issues around fracking, as I'm sure everybody's aware, not just in Canada and the U.S. but in Europe. For example, various EU countries are either instituting or have instituted banning on fracking and some fracking techniques. Until some of those political climates change, they may not develop those reserves.

Countries like China do have a lot of unconventional shales, but my understanding is that they're in very remote areas right now in China that aren't easily accessible in terms of infrastructure and development, right down to things like water, for example. Fracking requires very large quantities of fluids. China is not expected, I understand, to be developing those reserves in any appreciable volumes for at least half a dozen to 10 or more years. As a consequence, as Mr. Kist was saying, that sweet-spot window, between about '17 and '20, for attaining longer term contracts will come and go long before some countries like China have the opportunity to actually materially develop their own resources.

Mr. Webber: All right. Thank you, then.

Thank you, Chair.

The Chair: Does anyone else on the phone have questions? Okay. I see no more questions, but I have two questions, so I hope you'll indulge me.

You're not agnostic as a transmission company, and I understand that. I appreciate it. We're politicians in Alberta, and we are not agnostic. One of the biggest concerns I've got, looking at all the facts that this committee has seen, is: what's the impact on gas that is produced in Alberta, and what's the benefit to Albertans who own that resource if there is no tie-line from Alberta into B.C. to connect to these gas pipelines?

I see great progress being made on the gas pipelines intra-B.C. I understand that. But sitting here in Alberta, which we are, we are accountable to the people of Alberta. What's the impact of what's going on for Albertans? You know, it looks like we're on deck. We're not the primary source of gas for LNG. I think we need to talk about that more. I would ask your views on that.

Mr. Keys: Certainly.

The Chair: You're an Albertan, aren't you?

Mr. Keys: I am. I live in Calgary. I'll share a few different thoughts in that context. You're right. As TransCanada we don't colour code the molecules, as I said before. They're molecules that are produced from the basin, and they touch the system, whether it's infrastructure in B.C. that we have as part of the NGTL system or infrastructure in Alberta. They enter into this big NIT hub, as I was talking about before. Fundamentally what drives that production is not pipeline tolls per se – they play a small part of it – but it's often regimes for exploration and production within the provincial areas that are being developed. That's where some of the oil and gas exploration production companies decide to invest their dollars. It's not just, of course, Alberta, B.C. Many of the companies now are global players and have access to different plays across North America.

In terms of TransCanada's infrastructure we see the connection of I'll call it molecules that are actually drilled and produced in B.C.; for example, some of the plays that Progress is pursuing in the north Montney area. When they contact the NGTL system, they go into that NIT mix, as I was talking about, and because of the way we determine pipeline tolls on the system, at a very simplistic level it's basically the throughput on the system in terms of volume divided by the costs of the system, and it gives you a unit toll.

At the end of the day the more volume you put through on the system, if your costs are otherwise stable, the unit toll will go down. To the extent that the majority of markets in Alberta, for example, are served off the NGTL system, including all of the residential or local distribution company markets, a reduction overall in unit tolls on the system benefits all users of that system within Alberta. So the connection of volumes that may come from northeast B.C. and might ultimately commercially be destined for a west coast LNG project will still maintain throughput on the NGTL system and provide aggregate benefits to the system users as a whole.

Beyond that, the simple addition of supply to the system as well increases that liquidity that I was talking about before. So when we talk about 10 bcf a day coming onto the system in terms of physical gas, as I mentioned, every single day that trades about six to seven times on a commercial basis before somebody asks for us to deliver a physical molecule that day off the system. Adding those additional production volumes onto the system, whether they come from B.C. or Alberta, increases the size of that market, increases the liquidity, ensures price transparency, and ensures a market price for the commodity now in Alberta that Albertans, from residential to industrial users, will ultimately pay.

From our perspective – and, again, we are biased towards our system – the connection of supply, whether it's in B.C. or Alberta and whether it's associated with an oil sands project for a market heading down east, for example in eastern Canada, as it's traditionally done, or whether it goes to the west coast of B.C., simply the aggregation of it in the system benefits all the users of that system. Today a significant number of Albertans ultimately have gas delivered to their burner tips, their furnaces, through the NGTL system and one of the local distribution companies.

The Chair: Thank you.

My second question, Mr. Kist. I'll begin with my Alberta hat on. The smaller junior mid-cap energy producer, gas producer here in Alberta: is it feasible for that company's production to be relevant to you? I guess my bigger question is: how are you as a company acquiring the gas molecules you need to provide the feedstock for this LNG export? Are you going to do it through the drill bit? Are you going to acquire other companies? Are you going to acquire smaller companies? Are you going to joint venture? One of the questions we have is: what's the role of a small player in LNG export?

11:35

Mr. Kist: Thank you. That's a very good question. Obviously, you know, we as a mid-cap producer ourselves had all those questions when we originally talked about doing a joint venture, which we initially started to investigate in early 2010. For us, at the time the key was to access a joint-venture partner who could give us exposure in the international arena. I think the difference and the reason that we were able to accomplish what we have with Petronas is because the scale of the resource that we happened to have is clearly a world-class resource. What that did was gave Petronas visibility to the supply of gas for an LNG facility over a very, very long period of time. That's kind of a key aspect for any offtake partner or any player who is going to be playing in the LNG space's visibility. In other words, they want to see a reserved certification underpinning the long-term supply of those particular reserves.

In our particular case it would be an order of preference. We've obviously got a significant land base with a very significant resource underlying that. To the extent that it's within British Columbia, you know, our best economic choice to drill for that gas on our land – we'll make that choice. Ultimately, where, if you will, the smaller player or the smaller producer comes in, they have access to the NIT system, the NGTL system, so they're seamlessly connected, which is good from our perspective. We'll be able to access their gas to the extent that it's a better economic choice for us to buy gas off the grid. But in terms of how the smaller player plays into it, at the end of the day you've got to be able to demonstrate a resource that has got staying power, that's got longevity.

When we are structuring our LNG sale and purchase agreements, one of the key terms in there is that the offtaker wants to see a reserve certification underpinning the quality of those reserves. That's an aspect of it that may make it difficult for the smaller player. But having said that, again, being fully and seamlessly interconnected into LNG through the NGTL system means that smaller players are going to be able to get their gas on the system. It's likely that for us as an LNG player it's not going to be easy to balance all of our LNG plant needs with all of our gas, so we will probably be into the market fairly regularly, buying gas off the grid, whether it's an on the spot basis or whether it's on a term basis. I think that's ultimately how the players are going to play in the LNG space.

The Chair: Thank you. That's helpful.

Final questions?

Ms Calahasen: I just heard a comment in terms of smaller companies. Will there be any space allocated for smaller companies on any proposed pipelines?

Mr. Keys: I can start. From an NGTL system perspective, because it's what we call open access, any party can come forward and request service under the terms and conditions of the tariff that governs pipeline service. Yes is the answer to your question. They can. In terms of the pipelines TransCanada is developing for the projects in B.C., Coastal GasLink and the PRGT line, those are what we call private merchant pipelines right now, so they're sponsored by particular entities who negotiate commercial contracts

for service. To the extent that other companies want to participate in that, they do need to talk to those I'll call it founding proponents about gaining access to those systems.

Ms Calahasen: Okay. I'm new to this. Is there a process that they have to utilize? Is there something that they have to overcome? What kind of rigorous kind of thing can they do then for that space to be allocated in small companies, or is there a rigorous process?

Mr. Keys: You're talking about the private merchant pipelines in particular?

Ms Calahasen: Yes.

Mr. Keys: I don't think there's any sort of established process or structure for those proposed projects. I can't speak directly for Mr. Kist on this, but my expectation is that if there are entities that have any interest, for example, in participating in one of the announced projects like PRGT, they'd approach the proponents, TransCanada and Progress Energy, express that interest, and the discussions would ensue.

The Chair: Just to clarify, that's not a common carrier. It's a contract pipeline, so that's different. I'm sorry. I'm doing lawyer here. I shouldn't do this.

Mr. Keys: Thank you. That's very helpful.

Ms Calahasen: Okay. Thank you.

Mr. Kist: If I can just add one point to that. I think a matter worth addressing, you know, is that we are currently the sole shipper on the Prince Rupert gas transmission line. If there were a producer or another player that came to us and said, "We need to deliver X amount of gas out to the west coast; could we come into your system?", the reality for us as the only shipper on that system is that the more volume in that system, the better. It reduces the overall toll. So we are certainly open, and we continue to look for ways to ultimately reduce the toll on that line by attracting more gas to that pipeline as well, recognizing that it's going from one particular point in northeast B.C. to a plant on the west coast, but there certainly would be ways for other players to participate in that line with us if they would so choose.

Ms Calahasen: Madam Chair, you know, there's been opposition over natural gas exports, over price changes in Canada. I'm just wondering if any of you or anybody that you know within your industry commissioned any analysis on this line of argument.

Mr. Keys: I'm sorry. I'm not certain I understand the question.

Ms Calahasen: Well, we've seen opposition to natural gas export price changes in Canada. I'm just wondering if any one of the companies has done any analysis on this line of argument.

Mr. Keys: I want to make sure I'm interpreting the question properly. Are you asking about concerns of I'll call it Canadians generally about whether their prices to access natural gas will change or be changed by exports like LNG?

Ms Calahasen: Yeah.

Mr. Keys: That is a topic that has been debated for quite some time, not just in the context of LNG but of course back decades, when Canada originally became a predominantly exporting country. Those kinds of studies in the context of LNG are still being done. When the National Energy Board considers applications for export licences to take the gas offshore, out of the country, a lot of that information has been provided to them through those application processes. As TransCanada we don't take a position on commodity pricing at all. We're just the transporter in between, but there are a lot of entities out there – I think one of the consulting companies, Ziff Energy, appeared before this committee recently – who publish studies on this very thing. They talk about: if there are 4 billion cubic feet a day of projects going, what does that do to the price of natural gas within the basin and for consumers, for example? Does it increase it, and if so, by how much?

Ms Calahasen: We heard some of that. I'm just wondering if you have done any kind of an analysis on that kind of thinking.

Mr. Keys: No. TransCanada doesn't participate in that kind of assessment.

Ms Calahasen: Okay.

Mr. Kist: Can I just add to that, possibly? Certainly, I think, you know, as noted, the National Energy Board in receiving these applications applies what they refer to as a market-based procedure. All of the information that we need to supply to them helps them work through that market-based procedure. At the end of the day what they're looking at is trying to determine whether what is planned for export or is being applied for for export is excess to Canadian need, obviously taking into account trends in discoveries. As we know and I think was pointed out earlier, we've seen significant growth in natural gas in North America largely because of changes in technology, and we think that's going to continue. All of that is fed into the NEB process as they look and really attempt to determine whether in fact these are excess needs.

11:45

I showed you a chart earlier which showed, obviously, a very significant volume being applied for. Again, not all of that will come on stream, but at the end of the day we certainly believe that natural gas supply will continue to grow as the demand grows given the changes in technology and access to these unconventional resources. In our view, certainly in western Canada we think we're just scratching the surface of the unconventional resources.

Ms Calahasen: Thank you very much.

The Chair: All right, folks. I think that concludes our questions for presenters.

I want to thank everyone who made a very incredible amount of effort to be here. Thank you for your presentations. They were very, very well done, and I'm glad that we made the technology work to get you hooked in. Your contributions really complemented what TransCanada had to offer here. We are very grateful. I know you have many other things to do with your time, and we're really appreciative of your taking the time to be here with us today. If you have other messages that you feel like you failed to deliver today and you want to communicate those, don't hesitate to contact our committee clerk or myself, and we'll make sure that the committee has that information.

Again, we're very, very grateful.

Mr. Kist: You're welcome.

The Chair: We have a few things to tidy up. One is the research request. At the last meeting, when we looked at LNG/CNG vehicles, there was an inquiry made to Transportation about the

weight capacity on Alberta's roads. I will let you, Ms Zhang, just briefly review their feedback to us.

Ms Zhang: Thank you, Madam Chair. The Minister of Transportation provided a briefing to the committee in which they state that their maximum gross vehicle weight in Alberta is 63,500 kilograms. This limit is to ensure that road and bridge infrastructure is protected. In particular, they go on to state that less than 20 per cent of bridges in the network can actually withstand that maximum load due to the fact that the majority of bridges were built prior to 1982, when the load limits were lower. In summary, the addition of LNG tanks to trucks may result in a reduced payload for transport trucks.

The Chair: Okay. A question here. Go ahead.

Ms Fenske: Yes. I read through that, and certainly one of their concerns was having the trucks on municipal roads, but they also mentioned the fact that in B.C. they do have heavy-load corridors. I'm wondering if the newer bridges happen to be on more of our primary highway network. It would be useful to have a map of where there is potential to have heavier loads. I know that the company that came – I think it was Bison – are running between Edmonton and Calgary. If there is an opportunity to have a heavier load corridor there, that would maybe be a benefit in the future. I don't know if we can ask for a map.

The Chair: Oh, we can certainly ask for a map from Transportation. That's not a problem. There is no heavy-load corridor designated now, and what you're asking is: have they contemplated that? I think that's a reasonable query to ask them.

Ms Fenske: Certainly.

The Chair: Okay. Any other research requests from anyone?

Okay. Good. I think we're learning lots more about gas. Our language is really clear and strong, and I'm really noticing a huge language progression here, which is great.

Another point I just wanted to clarify before we finish up here is that we've got a meeting on Monday. We start session on Monday, and Monday evening there isn't a sitting, so we've got a nice one-and-three-quarter-hour slot, which we're going to lose – I mean, after that we're going to be down to our one-hour slots. We have MEG Energy coming to talk about cogeneration use of gas in the oil sands, so intra-Alberta use in cogen. Both Mr. Tyrell and I have been talking to EnCana, hoping that they are able to come to speak to similar issues on Monday as well. So that's our lineup for Monday.

Again, I do want to just share with you that our committee clerk is doing yeoman's service trying to make this all work. Everybody is busy; they're off in B.C. doing meetings. It's hard to get people to be able to tie in by phone or come. So, again, I'm just going to restate that I've made it very clear to Mr. Tyrell that he is to try to get the people on our list, but if he can't because of logistics or he just can't make it happen, then he is to go back to our stakeholder list and try to get other speakers and presenters. We will try not to do that, but sometimes we just have to. I think you won't go grey as fast if we do it this way, Mr. Tyrell.

We meet again on Monday, 6:15 to 8.

Would someone like to move a motion to adjourn? Ms Johnson. All in favour? Any objections? The motion is carried. Thank you.

[The committee adjourned at 11:51 a.m.]

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