



Legislative Assembly of Alberta

The 28th Legislature  
First Session

Standing Committee  
on  
Resource Stewardship

Hydroelectric Energy Production  
in Northern Alberta

Tuesday, February 5, 2013  
10:01 a.m.

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First Session**

**Standing Committee on Resource Stewardship**

Kennedy-Glans, Donna, Calgary-Varsity (PC), Chair  
Rowe, Bruce, Olds-Didsbury-Three Hills (W), Deputy Chair

Anderson, Rob, Airdrie (W)  
Anglin, Joe, Rimbey-Rocky Mountain House-Sundre (W)  
Barnes, Drew, Cypress-Medicine Hat (W)  
Bilous, Deron, Edmonton-Beverly-Clareview (ND)  
Blakeman, Laurie, Edmonton-Centre (AL)  
Brown, Dr. Neil, QC, Calgary-Mackay-Nose Hill (PC)  
Calahasen, Pearl, Lesser Slave Lake (PC)  
Cao, Wayne C.N., Calgary-Fort (PC)  
Casey, Ron, Banff-Cochrane (PC)  
Fenske, Jacquie, Fort Saskatchewan-Vegreville (PC)  
Fraser, Rick, Calgary-South East (PC)  
Hale, Jason W., Strathmore-Brooks (W)  
Hehr, Kent, Calgary-Buffalo (AL)  
Johnson, Linda, Calgary-Glenmore (PC)  
Kubinec, Maureen, Barrhead-Morinville-Westlock (PC)  
Lemke, Ken, Stony Plain (PC)  
Leskiw, Genia, Bonnyville-Cold Lake (PC)  
Sandhu, Peter, Edmonton-Manning (PC)  
Stier, Pat, Livingstone-Macleod (W)  
Webber, Len, Calgary-Foothills (PC)  
Xiao, David H., Edmonton-McClung (PC)  
Young, Steve, Edmonton-Riverview (PC)  
Vacant

**Also in attendance**

Saskiw, Shayne, Lac La Biche-St. Paul-Two Hills (W)

**Support Staff**

W.J. David McNeil	Clerk
Robert H. Reynolds, QC	Law Clerk/Director of Interparliamentary Relations
Shannon Dean	Senior Parliamentary Counsel/ Director of House Services
Philip Massolin	Manager of Research Services
Stephanie LeBlanc	Legal Research Officer
Nancy Zhang	Legislative Research Officer
Nancy Robert	Research Officer
Corinne Dacyshyn	Committee Clerk
Jody Rempel	Committee Clerk
Karen Sawchuk	Committee Clerk
Christopher Tyrell	Committee Clerk
Rhonda Sorensen	Manager of Corporate Communications and Broadcast Services
Jeanette Dotimas	Communications Consultant
Tracey Sales	Communications Consultant
Liz Sim	Managing Editor of <i>Alberta Hansard</i>

**10:01 a.m.****Tuesday, February 5, 2013**

[Ms Kennedy-Glans in the chair]

**The Chair:** Welcome, everybody, and welcome back to a few of you who weren't with us yesterday. We are just going to be the committee today, so that's going to be interesting.

I'm going to just start. I'll introduce myself, Donna Kennedy-Glans, chair, and we'll go around the room. If you are substituting for somebody else – I think the only person doing that is Shayne – just make that point. We'll start with you, Bruce.

**Mr. Rowe:** Bruce Rowe, Olds-Didsbury-Three Hills and deputy chair.

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

**Ms Calahasen:** Pearl Calahasen, Lesser Slave Lake.

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

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

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

**Mr. Hale:** Jason Hale, Strathmore-Brooks.

**Mr. Stier:** Pat Stier, Livingstone-Macleod.

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

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

**Ms Zhang:** Nancy Zhang, legislative research officer.

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

**Mr. Barnes:** Drew Barnes, Cypress-Medicine Hat.

**Mr. Cao:** Wayne Cao, Calgary-Fort.

**Mr. Bilous:** Good morning. Deron Bilous, Edmonton-Beverly-Clareview.

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

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

**Mr. Tyrell:** I'm Chris Tyrell, the committee clerk.

**The Chair:** Who's on telecon?

**Mr. Saskiw:** Shayne Saskiw, Lac La Biche-St. Paul-Two Hills.

**The Chair:** Shayne, can you clarify if you are sitting in on behalf of Mr. Anderson or you're just observing as a member?

**Mr. Saskiw:** On behalf of, his substitute.

**The Chair:** Okay. You'll need to get your form in to Mr. Tyrell at some point in time to do that.

**Mr. Saskiw:** Sure.

**The Chair:** Okay. To be clear, Mr. Saskiw, your form indicating that you're acting on behalf of a member hasn't been submitted in time. You're free to participate in the conversation; you just can't vote. Okay?

**Mr. Saskiw:** Sure.

**The Chair:** It's sounding fairly technical, but I think there are no choices. That's what I'm being told.

Is there anybody else in on telecon?

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

**The Chair:** Thank you, Rick.

Okay. Everybody knows about all of the equipment, so I won't go through that.

Has everybody had a chance to look at the agenda for today's meeting? If so, can somebody move that the agenda for the February 5 meeting be adopted as circulated?

**Mrs. Leskiw:** I so move.

**The Chair:** Thank you, Mrs. Leskiw. All in favour? Any objections? Carried.

Okay. The big goal for today – and I think it's kind of exciting – is to start to look at how we're going to do the final report. We've got a target of getting this final report before the Assembly by March 6, so it would be delivered before the budget. Everybody is aware that we will be doing budget estimates. This committee will be active. It's just a way to get this finalized, on the table, and filed. What I would like to suggest to this group – and we've talked quite a bit about how to do this because the idea of 25 of us sitting around a table writing a report, even for the lawyer in those of us who are lawyers, is kind of frightening. That's a very, very difficult job to do.

What we're suggesting instead is that we go through the research today – and Dr. Massolin can take us through that – that we go through the key issues, and again Dr. Massolin and the research team, Ms Zhang, have prepared a preliminary document for your consideration. There are lots and lots of issues. We as a group go through those issues and make sure we've got all the issues on the table and then delegate the authority to prepare a draft for your acceptance to a working group, a small working group, with representation from all of the individual caucuses, much as we do with the other issues.

That would mean that there are four people working on taking the issues from this table and turning them into a report together with the research team here at LAO and then bringing that back to the full committee. Of course, if you've got issues that you want to expand upon, you can go to your representative in the working group and make sure that those ideas are brought forward.

Just to be clear, the recommendation is that today we look at Dr. Massolin's review of all of the research to date, so who presented to us, and he will also weave into that all the materials that were provided so that there will be a comprehensive document, the report, that identifies the research and the presenters. Then we will go through an issues discussion, which will be led by Dr. Massolin, and we will go around the room. I want everybody to put issues on the table that they want in this report.

Then a working group will take that away, work on it with the research team here at LAO, come back to you probably in a couple of weeks – we can set some dates here before we leave – with a document for your review. Your comments will go back to the working group, and then there will be edits.

That's what I would like to put on the table for discussion. I've got motions to progress that, but would anybody have any questions or thoughts about that process? Yes? We'll start with you.

**Mr. Stier:** Yes. Good morning and thank you, Madam Chair. I have a concern that comes from my background as a councillor. I can tell everyone here that I used to sit on an awful lot of big hearings with respect to various projects, including perhaps some that were dramatic, some not so dramatic. It included things, perhaps in an analogy form, that caused a lot of negative impacts, gravel pits.

I think that yesterday we saw here that there was a stakeholder group for the first time that came up to show a different point of view than what we'd run into in the past. We have for the first time, I think, seen that we've got an awful lot of opposition from local residents, yet it strikes me that we've not actually determined a site location or optional site locations. We don't necessarily know where in the world we're really thinking of. We don't know what stakeholders might be affected other than that set of groups we saw yesterday. It seems to me we're missing a very key amount of information from other groups in the area, whether it be towns, villages, or municipalities.

I think that with the timeline you've now underlined, if we proceed without that information, we're going to be missing key information. I think I'd like to throw that out for comment to the committee here. I can tell you that if the points that were made yesterday had any impact on anyone, they certainly did on me. I know that any time a development takes place on a property, it changes that property for the rest of time. This is a major, major potential development and will impact not only, I would say, the communities represented yesterday but many, many other communities. I really think we need to take that into account because if I was sitting on a development appeal board at this moment on this matter or if I was even sitting on a council, I would say that we haven't got enough information.

Thank you.

**The Chair:** I'll make a comment, and I'm sure others would like to respond. Please put your hand up. I see your hand, Mr. Casey, on this. My first observation would be that we're still at a feasibility stage. There are huge groups of stakeholders that we haven't brought forward to be heard at this committee. We're not looking at individual projects; we're looking at the concept of hydroelectricity. I would never disagree with you that it's important to engage towns and local communities. Ice floe issues, water flow, things like that, we heard about earlier. It's just a question of the logistics. We have to have this committee finalized by – I think our end date is in March, the 27th of March. We've also got budget estimate responsibilities as a committee, which I think will be a really fulsome commitment. It's just a matter of how we fit that into our schedule.

10:10

**Mr. Casey:** I think you've pretty well covered it, Donna. I mean, if we had a project in front of us, I would agree a hundred per cent that we don't know who it is affecting. Really, what we heard yesterday is that consultation is absolutely a priority and that some of the components of that consultation are a priority. Whether it occurs in one river system or another, at this point we're looking at the feasibility only of that.

We also understood, I think, from yesterday what a large part of that overall discussion would eventually be that consultation process and the effects of flows in the river. I think there was some great information brought to the table yesterday, and that would give us something to add to the report. If hydro were to be looked at, then, you would ensure there were certain specifics that would be included.

**Mr. Anglin:** I just want to add that if I understand our mandate correctly, this is extremely high level. We would bring a recommendation to the government. If they were to accept that recommendation, that's when the process actually starts. I mean, if somebody wanted to put a hydro plant on any river, the whole AUC process starts with the application. I think it's incumbent upon us to pass along, if we make the recommendation, what the concerns were that we heard. When the consultation process starts, those issues that we heard of would be added to what they would consider the important issues that we didn't go into on that level.

Backing up, on a very high level, clearly, hydroelectricity is a low-cost electricity. The environmental footprint is significant in one degree, but it's also very plausible in another, when you look at pollution and that kind of thing. There are all these things to measure, but that's not our decision. That would be the decision when the proper regulatory authorities, Alberta Environment and the AUC, hear all the concerns site specific to a particular project.

**Ms Calahasen:** I was looking at the information that was provided by Dr. Massolin, which is very, very well written. My concern was that the portion that was missing was yesterday's submission. I guess that was going to be my concern and my question relative to: how are we going to ensure that we incorporate those concerns that were brought yesterday and ensure that their views are brought forward?

I think what we're trying to do is to make sure that we have a report to be submitted that will be high level, I'm hoping, with recommendations. My understanding is that there's no site that has been chosen. With that, I think what we have to do is take into consideration all of Alberta. Those are really important information and considerations that have to be taken in from yesterday's submissions because I think that they can permeate all over Alberta. My understanding is that if we have a report that we can submit that identifies those concerns and those issues, I think we will have done what we were mandated to do.

**The Chair:** I'll call on you in a minute here, Mr. Cao. Just for clarity, we fully intend to have that report with the summary of the stakeholder presentations, which will include yesterday's presentations. May be you want to speak to that.

**Dr. Massolin:** Yeah. I can talk on that one, Madam Chair. It just wasn't included here because it happened so recently, obviously. The other thing to note is that – and I'll get to this in detail in a moment – this document, of course, is just a summary of the presentations. The full record is always on *Hansard* in transcripts.

Thank you.

**The Chair:** Mr. Cao.

**Mr. Cao:** Well, thank you, Madam Chair. I just have some thoughts here, input into the process and the report. I've done feasibility studies in my corporate career. Basically, from my perspective, it is why we need to do it and what to do and how to do it, that kind of thought.

First of all, with feasibility studies like we're proposing here, the big question at the end of it is: is it feasible? Right? Feasibility means: is it feasible? From that context, I think we can flesh out the details as we go, addressing how to do it. All of this consultation, I believe, has to be worked out at the project level, where it happens. But we need to say, "Hey, we have to cover that," our consultation and others', addressing it at that level. Basically, the framework in my mind is: is it feasible to do it? Is there a need out there to do it? What other subjects do we have to cover? Then the

how is suggestions, because there are so many. That's sort of my thought around it.

Thank you.

**The Chair:** All right. If that's the case, then, setting the stage here, can I ask someone to move that

the Standing Committee on Resource Stewardship delegate to the working group the task of preparing a proposed committee report for further review by the committee as a whole.

**Ms L. Johnson:** So moved.

**The Chair:** Any questions on that motion? Okay. All in favour? Anybody not in favour? Okay. It's carried.

To expand on that, I would like as chair to make another proposal. In the past with this working group – and it's been very effective, I think, and I hope my colleagues feel the same way – we've been able to get together as the four caucuses and come back to you with recommendations and make sure that all points of view are represented here. Because I'm chair and I do have a responsibility to maintain independence, I think that in an exercise as big as writing a report, I want to make absolutely sure that that's my priority. I'm going to recommend that for the report-writing process we have an additional Progressive Conservative caucus member on the working group in the preparation of the draft report. That way, there are five of us, four people representing the caucuses and myself representing the committee as a chair.

I would ask somebody to move that

the Standing Committee on Resource Stewardship allow the addition of Ron Casey as an additional Progressive Conservative caucus member on the working group for the preparation of the draft committee report.

Would someone be comfortable moving that?

**Mrs. Leskiw:** I so move.

**The Chair:** Thank you, Mrs. Leskiw. Discussion on that? Okay. All in favour? Any objections? Carried.

Let's start, actually, with the research document that you've prepared, Dr. Massolin.

**Dr. Massolin:** Sure.

**The Chair:** We'll let you walk through that, and then we'll move to the focus issues.

Just a heads-up that once we go through the focus issues, I'm going to go around the table and invite everyone's comments on what they would like to see reviewed as focus issues by the working group in writing up the report.

I'll turn it over to you, Dr. Massolin.

**Dr. Massolin:** Thank you, Madam Chair. The document that I'd like to go over now is called Summary of Stakeholder Presentations Regarding Hydroelectric Development. This document was posted last Friday on the committee's internal website. It is a document that, as the name implies, attempts to summarize the oral presentations to this committee up until and including the committee meeting that took place on December 13 last year. As mentioned, the presentations from yesterday were not included, but they can be and will be.

The document itself summarizes the oral presentations, but it also incorporates any briefs that were presented to the committee by those stakeholders/presenters. It also incorporates some of the committee discussion as well, some of the questions and responses. So that's what's at issue. What I'd like to do is not give

you a full rundown. I mean, you can read the document for yourself and the transcripts, of course, but I'd like to highlight some of the more salient points that the stakeholders made during their presentations and then, of course, field any questions, if that's on, afterwards.

**10:20**

Here we go. Starting on page 4, the first presentation was from the Canadian Hydropower Association, who presented on the 29th of October last year. Now, they provided a lot of general information to the committee in a few words, basically, on the prevalence of hydroelectric power generation across the country, that it's 60 per cent of Canada's current total, as you heard from them and yesterday as well, and also on the capacity in Alberta, which I'll not get into. I think it's well known.

The one thing I'd like to highlight for you right here and now is that there was a committee question about the efficiency of hydroelectricity; you know, how efficient is water power compared to others? Well, the CHA responded that "the efficiency of the conversion of water energy to electricity is over 90 per cent" – I don't know about the committee, but to me that was a bit of a revelation; that's quite high – "whereas natural gas or coal conversion is only between 40 to 60 per cent efficiency."

The CHA also stated that advances in technology involved in hydro production, mostly in turbines, allowed for greater environmental protection, and this has resulted in fish-friendly turbines and other methods by which to protect species who are at risk or had been at risk in the past.

The next presentation was from the ATCO Group, who presented to the committee on November 19, 2012. Now, the first thing I'd like to highlight, of course, is again something that's well known to the committee, that the ATCO Group are the proponents along with TransCanada of the Slave River project. The ATCO Group related to the committee the importance of the Slave River in terms of its generation capacity. I believe that two-thirds of the water that exits the province exits through the Slave River because, as was reiterated yesterday, the Slave River gathers the water from two major river basins, the Athabasca and the Peace River basins. So a lot of water exits the province into the Northwest Territories through the Slave River. That means there's a lot of potential hydroelectric energy capacity there as well.

Another thing I'd like to note here from ATCO's presentation, if you're following along with me here, is on the bottom of page 6 of this report. I'll just read this out. ATCO notes some challenges that face large hydroelectric developments, and these are as follows:

- Significant up-front development, consultation, and permitting costs before project construction.
- Lengthy construction periods and the challenge of labour and inflation cost uncertainty during this [development and construction] period.
- Long period of spending before any revenue is realized and no revenue certainty.

This is the concept of patient capital. In other words, the capital has to wait before you see a return on investment.

Then the next little bit I'd like to highlight as well. According to ATCO the following areas are areas in which the government can play a key role in the hydroelectric development process: firstly, to continue to streamline and harmonize the regulatory process; to create commercial frameworks that will allow for revenue certainty and financing; to provide support by fulfilling the duty to consult with aboriginal groups; and fourthly and lastly, to conclude bilateral transboundary water agreements with other provinces and territories.

Moving on to TransCanada Corporation, who presented on the 19th of November last year, the thing I'd like to highlight here is that TransCanada noted the benefit of hydroelectric power generation in terms of the reduction of greenhouse gases. It's important to note that hydroelectric doesn't eliminate all greenhouse gas. In my research what I found kind of surprising to me was that by inundating, you know, even a small area of land, the plants that used to be there through the water emit some carbon dioxide. But, obviously, compared to other forms of power generation, hydroelectric provides considerable benefits.

I'd like to also note that TransCanada noted that there are economic stimulus benefits for northern Alberta by developing hydro power there, including providing opportunities for other companies to be involved and, of course, the aboriginal groups and other people living in the north.

TransAlta Corporation presented on November 26, 2012. The thing I'd like to highlight again is this concept of patient capital, that hydroelectric development requires large capital investment over a long period of time before that capital investment is recovered.

Although other forms of power generation may have sort of a shorter window of development, hydro has the benefit vis-à-vis those other developments, including natural gas and coal, that it can generate electricity for a long, long time, up to a hundred years and perhaps even longer. So you don't get return on the investment initially, but over the long haul it may be a better investment.

Next the Environmental Law Centre, which presented on December 3 last year. One of the interesting things that the ELC did was to describe the constitutional ambiguity or jurisdictional ambiguity – this is at the top of page 9 – with respect to regulation for a specific hydro development. By this, they meant that

the federal government has powers over inland fisheries which it exercises through . . . the Fisheries Act regarding habitat protection, fish passages, and . . . fishways. The federal government is also responsible for species at risk, [including] migratory birds

and others. That is through the Navigable Waters Protection Act. But then the province also plays a large role in environmental management and protection by managing, you know, wildlife impacts and other habitat impacts. So there is an overlap there.

They also made the point that environmental assessments for these hydro developments take place both from a federal and a provincial perspective and that they are lengthy processes. What the ELC suggested was that there should be a co-ordinated assessment process, a co-ordination between the federal and provincial governments, and that would be beneficial to expediting the regulatory assessment or the environmental portion of that.

Manitoba Hydro presented on the 13th of December last year. They also made the point that the regulatory process needs to be streamlined in order that the hydroelectric application process be shortened and the development of a hydroelectric facility could be expedited. Manitoba Hydro pointed out that it has high fixed costs; in other words, costs consisting of depreciation and interest. Those costs account for about 65 per cent of its annual operating costs.

They also made the point that due to this long and rigorous development phase for a hydroelectric facility, nearly a third of the costs of a project are spent in obtaining regulatory approval. I thought that was quite notable. Manitoba Hydro cautions about venturing into a hydro development without the safety net provisions. By that, I think they meant having purchasing agreements in place. At least, that was the model that they

explained that they follow in terms of having purchasing agreements with purchasers in the American Midwest.

Manitoba Hydro described partnerships with aboriginal groups in which aboriginal partners have money invested in hydro projects and also receive construction contracts so that their people are employed in the development and construction of these projects and are subsequently employed as well.

*10:30*

Finally, Manitoba Hydro discussed designing a system that is dependable not only in low-flow conditions but also in high-flow conditions. By low flow, of course, they're talking about periods during which, I guess, predominantly maybe in the winter, there's not as much flow in the river and that it's still economically viable. Also, they're referring to the high-flow viability, meaning that you have a market in which to sell the electricity when the river is high. This relates again, potentially, to the purchasing agreements that I've mentioned.

The Pembina Institute presented to the committee on December 13. They made the point that hydro is a good alternative in terms of low carbon emissions. They mentioned this concept of social licensing as well and that social licensing can be a significant barrier to capital projects development. They highlighted a framework for credible public decision-making that was created by the World Commission on Dams. Here I'm on page 11, the second full paragraph, if you're following along. This framework speaks about such things as sustaining rivers and ecosystems, recognizing entitlements, sharing benefits with the community and stakeholders, ensuring compliance, sharing rivers with other jurisdictions, and gaining public acceptance.

The Water Matters Society of Alberta presented on the same day as both Manitoba Hydro and the Pembina Institute, as you recall. A part of their presentation highlighted the issue of water management, specifically precipitation, the fact that rainfall is decreasing over time. This is not only occurring in southern Alberta; they also pointed out that this occurs in northern Alberta as well.

One of the key points that I think that they highlighted in their presentation was that in-stream flow management issues are very important. They also said that there hasn't been an assessment of in-stream flow or that no water management framework at all has been done for most of the rivers in Alberta. I think the exception was the South Saskatchewan River basin. The idea there, of course, is to make sure that there is enough water coming into whatever river basin you're discussing in order that water is available for the obvious uses that are necessary over and above hydroelectric power generation.

Another point they made was that there should be substantial public participation in any discussions over the development of hydroelectric power.

Madam Chair, I think I'll stop there. If there are any questions, I'd be happy to take them.

Thank you.

**Mr. Anglin:** I just have one question on the power purchase agreements. When I heard their testimony, they did bring that forward, but I thought they also relied upon the backing of the taxpayer or the ratepayer. This relates to Manitoba Hydro. I thought that was significant. Correct me if I'm wrong, and maybe we need to check this. They came forward with a project. It was backed by the ratepayers, but to subsidize that backing, they went out to get their purchase power agreements to make the determination.

**Dr. Massolin:** Yeah. Madam Chair, well, I guess it depends on your terminology. I think that they go out and get their loans themselves, but they're guaranteed by government, I believe. That's the way it works. Then the idea is that they export power and make money from that export to subsidize the sale of electricity domestically.

**Mr. Anglin:** Okay. I've got it.

**The Chair:** Any other comments on this document?

Again, just to reiterate, it will be supplemented by the presenters we heard from yesterday, and it will also be supplemented with all of the documents that have been submitted by various players and the research that's been done by Dr. Massolin and his team, so it will be pretty robust.

**Ms Calahasen:** You did a great job.

**The Chair:** Yeah. Good job is right.

To progress this from the research stage to the issues and the recommendations, which we will collectively endorse when we present them to the Assembly, perhaps I could ask you, Dr. Massolin, to go through your issues document. Then again we'll go around the entire room to get people's observations of those issues, how they would recommend these issues be addressed in the report, and if there are any additional issues that people would like to identify.

**Dr. Massolin:** Sure.

**The Chair:** It's heavy duty for you here today.

**Dr. Massolin:** I was going to say that I'm getting lots of play today. I don't know.

This document is the one that was just posted shortly before this meeting but handed out, so I hope you all have it. It's called the Identified Issues for Consideration, with today's date. The previous document I discussed was a reminder of what you heard through the information gathering portion of this committee's review process. This document here is a very first attempt – and I've got to stress that – to highlight some of the more salient issues in a very general way. A lot of qualifiers there because I know that this issue is very complex, and there are lots of sort of subordinate or subsidiary issues. So there's not an attempt here to lay out in any comprehensive fashion every last issue and every last sort of subordinate issue.

The intention of this document is simply to provide the committee some fodder for discussion and deliberation and, as the chair has mentioned, to then supplement it with their own thoughts. The ultimate goal is of course to provide fodder for discussion which will inform the report writing and final preparation of the report.

With that, I will go through the document somewhat systematically. The way it's set up is that if you turn to page 3, this is where the document really begins. You've got the issues set out, listed under broad categories such as economic considerations. You've got the issue broadly defined and posed as a question. Then in the third column there you have additional considerations or notes. Of course, that's just a little sampling of some of the stakeholders and other information that the committee has heard to sort of provide background to what the issue is.

Here we have issue 2.1 on economic viability. Is the projected overall demand in Alberta sufficient to justify development, including during those high-flow periods, or is there a need to ensure contracts, or power purchase agreements, are signed with

customers in order to make the project commercially viable? Now, that issue speaks to this overall idea of the economic viability of hydroelectric plants specifically and maybe, you know, in general in the north. Given those specific economic considerations the project needs to be viable in terms of the cost of production, meeting the supply and the price, all those basic issues, plus the idea that the demand is going to be best fulfilled by hydroelectric power supply as opposed to another form of power generation like natural gas. Those are some of the subsidiary issues. You know, the committee may want to think about those things and then, of course, add or potentially subtract to those things right there.

So that's the first general issue. It's the economic viability of hydroelectric versus other potential power generation in a climate perhaps, as we heard yesterday, where natural gas is very cheap and that potentially natural gas might be a better way to generate power but that balanced against the idea that you've got a hydroelectric plant that could exist for potentially a hundred years. You know, can you forecast that far out? Those are some of the issues under that one plus others that I'm sure the committee can come up with.

**10:40**

Issue 2.2 under economic considerations is the capital financing of hydroelectric projects. This question is simply posed but is as well very complex, I think, when you think it through. What is the role of government in financing hydro projects? Is there a role? Does government stay out? Does it provide a backstop? Is there a P3 arrangement, or does it involve itself wholeheartedly in terms of a Crown corporation? Those are some of the ideas. Of course, we've heard a lot from the stakeholders on this issue as well.

Turning to capacity, size of development, general issue 2.3, it poses the question: what should be the size or capacity of development? Now, this is the question that was posed at yesterday's committee meeting and something that you've heard from ATCO. The idea is that when you look at the river basin in its entirety, do you look at it in terms of saying, "What is the entire potential of that river basin?" as opposed to saying, "Well, we just want to develop this one site?" What is the entire hydroelectric generation capacity of that entire river basin? We're going to plan out, map out a strategy to develop it so we can maximize that hydroelectric capacity. That's the issue there.

I think the point that is being made here is that if you install a generation facility that's a little bit lower in terms of its megawatt production compared to what it could be in terms of its potential, you might forego additional potential capacity somewhere downstream or somewhere on the river.

The environmental considerations, 2.4. What effect would a hydroelectric facility have on fish and other species and the riparian habitat and ecosystems generally? Now, again, the question seems fairly straightforward on first blush, but of course it's a very complex issue, and there are a lot of ramifications here in terms of not only the species living within the river but also species and flora and fauna throughout the entire habitat. There are implications in terms of flow and flooding and, you know, what was natural flooding, what is not being flooded now as a result of the use of dams. As we heard yesterday, the Williston reservoir, which is associated with the Bennett dam on the Peace, has caused some ramifications in terms of the flow of the Peace River. Those sorts of issues are all wrapped up in this 2.4.

Issue 2.5. What is the feasibility of development in light of water availability in northern river basins? This has to do with some of the concerns that the Water Matters Society of Alberta pointed out. Is there enough water to support this? The concept there was that, you know, it looks innocuous in terms of having

water run through a run-of-river facility or even a small reservoir situation, but the reality is that that causes additional evaporation. Is there enough water in these water basins to allow that? There are also water flow issues, that we heard yesterday, in terms of some of the northern communities and what impact that has on the traditional lifestyles of the aboriginal people that live in that area, so other ramifications, of course.

The land-use issue here is expressed in 2.5. What are the limits and considerations in terms of land use given that land will be affected by hydroelectric development? Now, this is obviously very related to the environmental considerations, but here specifically we're talking about inundation of land, land that might be used for other economic purposes, including farming, potentially logging, hunting and trapping, other things like that. Of course, there are other issues in terms of the cultural and heritage preservation issues. Sites that have historical heritage, cultural, archeological values may also be inundated or otherwise affected during this process.

Considerations concerning aboriginal groups. Is there a balance to be struck between the loss of land and the disruption to socioeconomic and cultural life and employment and other benefits for aboriginal people? Should river basin management regimes be concluded with the objective of obtaining a reconciliation between maintaining the traditional way of life of aboriginal people and allowing hydroelectric development?

I think this was expressed most articulately yesterday in terms of talking about the balance there between the economic good, if you will, of providing development opportunities in terms of capital investment and, perhaps even more importantly, jobs with the cultural, historical, and other heritage benefits of maintaining traditional ways of life and legal aspects as well and not disrupting the land and the river environments as they currently stand.

Number 2.7. What should be the extent and nature of consultation with aboriginal groups? Again, a very, very big issue.

Interjurisdictional issues, 2.8. Should interjurisdictional agreements concerning river water management be given priority prior to development? Now, that was a point that Manitoba Hydro brought up, saying that, you know, you don't want to get halfway through the process in terms of the regulatory aspect and capital acquisition and even construction and realize that someone upstream or, more importantly, downstream objects to this and is going to bring you through legal issues as a result.

Regulatory considerations. Well, one of the ones is one I've already highlighted here in terms of the regulatory approval process. I think the consensus was that it's lengthy and very time consuming and consumes a lot of the development period, and a lot of capital is expended during this regulatory period. Should the regulatory process therefore be streamlined so as to shorten the timeline to expedite development? I mean, the flip side of that, of course, is that you can consider the importance of the regulatory regime in terms of habitat protection and protection of other resources.

Lastly, 2.10, should the Alberta Utilities Commission take a lead role in the environmental assessment aspect of the regulatory process, and should public hearings be broadened to include participants beyond those who are already directly impacted? Now, I think that one speaks for itself, and it was highlighted by the Environmental Law Centre.

I'll stop there. I think you will have a lot more to say as a committee about some of these issues and more, I'm sure. Thank you.

**The Chair:** Thank you very much, Dr. Massolin.

I think we've got about an hour, so if everybody's comfortable, we'll go around the table – maybe I'll start with you, Dr. Brown – and just pitch in. What would you like to see addressed? We maybe don't have to get to the actual recommendation, but if you've got a recommendation, throw it on the table now. Let's just see how we're all feeling, where we're all at.

Yes, Dr. Massolin.

**Dr. Massolin:** Sorry, Madam Chair. Can I just say that what we're going to do is just try to record as best as possible some of the issues that come up on the screen there and record that for the working group, just to let the committee know.

**The Chair:** Thank you.

**Dr. Brown:** I think one of the biggest issues that struck me was with respect to the economic viability thing, where you take the high capital cost of the hydroelectric plus the transmission costs of some of these sites. You look at that and you look at the emerging huge supplies of natural gas from shale and coal-bed methane in North America, and what I really took away from it was that, you know, we need to emphasize the economic impact of the natural gas coming on stream in such large quantities. It looks like the price of natural gas is going to stay depressed for an awfully long time. I would like to see that emphasized. I think that the competitiveness of the hydroelectric – it's a game changer, the fact that we've got all this natural gas now.

**The Chair:** Thank you.

**10:50**

**Mrs. Leskiw:** It's the water issue. It's a big issue in my neck of the woods. I'd like a lot of concentration on that and also how hydro – I really like what Water Matters said – fits in with the Alberta Land Stewardship Act, how it fits with the lower Athabasca plan. How would a hydro development be related with the lower Athabasca and all the ramifications that that has?

**Mr. Cao:** Well, I have brought up some thoughts in the previous meetings. A couple of thoughts stay with me. One is about damming the river for electricity. There is the impact of that, or the benefit of it is some irrigation aspect. The agriculture side of it somehow has to be brought in as a subject as well to consider.

The other one is as recently as yesterday talking about the need to have the baseline established before even talking about anything else because if we don't have that baseline established, then the thing would just be a moving target. Then dispute and arguing never ends, and nothing will be feasible, whether you have a baseline site.

Thank you.

**Dr. Massolin:** Mr. Cao, I was just going to say: by "baseline" what do you mean?

**Mr. Cao:** What I mean is some sort of social aspect – let's just say the livelihood of the people in the area as it is now, the social side – and baseline in terms of the environment, the scientific side of it: quality of water, environment. Like I said, a before and after kind of picture.

**Dr. Massolin:** Okay.

**The Chair:** Mr. Barnes.



**Mr. Barnes:** Thank you. I, too, am concerned about the economic viability in comparison to the long-term pricing of natural gas and the lower cost of getting that type of generation online.

Also, I'm concerned about what would be the citizens' and public of Alberta's concern, whether it was with a loan guarantee or some guaranteed price. I think I'd want that looked at a bit more.

I especially found our day at the dams interesting, where one of the representatives said: 29 dams, only a hundred employees. It looks like a pretty profitable business to me in spite of some patient capital that might have to go in, so I would like that high on our list of concerns, please.

**Mr. Casey:** Well, I think a lot of people have touched on mine. I think the baseline data piece is the one that is absolutely critical in this if we want to move ahead at all. It's not something you can do this year or next year; it's something that needs to be scientifically collected over a number of years. At the same time the scope of that research needs to be identified. Both of those are issues that will take a tremendous amount of time. If someone moves to go on a project, you're going to lose years at the front end of the project because of a lack of data. I think we heard yesterday the impacts of not understanding the full impact of changing the flows in those rivers and what they might be. Without baseline data it's just a guess as to what the impacts really are.

Economic viability, again, for me was one of the key ones. I agree with the natural gas piece. Even though I know it is sort of counter to what we were told by some of the presenters, some of the other presenters said: "Well, yes, you need power purchase agreements in place. Who's going to go out and spend \$6 billion, \$7 billion, \$10 billion without a guaranteed market?" What we heard yesterday was: well, no, that's not true because, gee, aluminum smelters do it all the time. Well, I'm not sure this is the same scale as an aluminum smelter. So I think that establishing those and the bilateral agreements – without the bilateral agreements, the economic viability of this goes out the window. We're of generations of bickering back and forth between our neighbours.

**The Chair:** Thank you.

Mr. Stier.

**Mr. Stier:** Yes. Thank you, Madam Chairman, for the opportunity once again. I got shut down on the last one, so I'll move off that. I think Mr. Casey just re-entered it, though. However, it's good to see.

I just wanted to talk a little bit about 2.2 in the research document. It had to do with the role of government in financing. I noted in the research document as well that it was addressed somewhat by ATCO in some sort on page 6 of that report. I think that's probably where in these days we really need to look at things.

With the era we're coming upon in March and this spring, where should government be in this? Of course, regulation is obvious, but where should the commitment be in terms of investment? Is it something that is best being a joint project in some sort of different model that we haven't discovered before, or is it something that the local community and private investment can have a larger role in? I think that needs to be delved into fairly strongly because this could be a whopper. I can't recall any figures, but I can't imagine what something like this kind of a monster could run into.

Thank you.

**The Chair:** Thank you.

Mr. Hale.

**Mr. Hale:** Yeah. I'm not sure how, you know, the working group will prioritize, but I'd like to see kind of an overview of the pros and cons as you look at all of the different aspects that have been mentioned: economic viability, the environment, the social, the long term, the gas markets. We know it's pretty tough to predict the gas markets. You look within three years ago to now to what's going to happen in three years. Is it better to take something that you know that's fairly stable? It may cost a little less, but there's less volatility. Just some issues where we can see where it'll work, where it won't work, something like that.

**The Chair:** Thank you.

Ms Johnson.

**Ms L. Johnson:** Thank you. I'd like to step back and have the recommendation include comments about the different sources of electricity and the weighting. If we go 80 per cent to natural gas production plants and the price of gas goes up, we've got a problem. I'm not sure if any one presenter addressed the combination of using hydro, natural gas, solar, wind to supply electricity for Alberta. What's the weighting? Do we have recommendations based on information we've heard to balance that in terms of a provincial strategy? We don't want to be at the place that we pick natural gas and then it quadruples in price, sort of thing.

Thank you.

**The Chair:** So kind of the portfolio concept. That did come up quite a bit, and I think the other jurisdictions we heard from don't have a – nothing is exactly like Alberta, so we have to design our own portfolio that works for our assets, the federal coal policy being part of that as well.

**Ms L. Johnson:** What just came to mind is that the other recommendation I'd like us to consider is given – what is it? – that 80 per cent of Alberta's electricity is used by industry, can we address some our demand needs by having partnerships with industry directly?

Thank you.

**The Chair:** Thank you.

**Mr. Anglin:** Well, I just want to go back to the definition of the word "economics" because that's what everyone's talking about if you look at the broad term. It is about not just the financial, but it is about the distribution of how we're going to manage all the resources involved. One of the things I would like the report to focus on is not so much hydro versus natural gas but hydro working in relationship with natural gas, and I think that's what was just mentioned.

Having two main sources of energy for our electricity needs does mitigate – one of the things we have going for us is that we're extremely wealthy in natural gas, and as was mentioned earlier, the long-term future right now, the long-term outlook for natural gas is that it is going to be depressed for a while because of the new extraction technologies. That's a good thing for electricity; it's a bad thing for our royalties scheme in our market. It's one of those things. But what hydroelectricity does – and I believe it did come out, as our research even indicated – is 100 years and even greater. I had a fun time at the dam seeing 1929 technology still up and running and working. It was like walking back into some of the dams I'd been in back in the '70s.

11:00

On a technology level it's actually quite a simple technology, so how does that work for our long-term energy needs? If I remember correctly, if we believe the AESO's long-term plan, we need to replace 11,000 megawatts. That's important because that does have to be replaced. How does it get replaced? Even if we do nothing, we as a government will have a policy that will direct how this is going to be filled. It will be filled one way or another. This is something that we need to consider in that economic outlook, and I trust we'll come up with the appropriate numbers and stuff.

**The Chair:** Thank you.  
Ms Fenske.

**Ms Fenske:** Thank you, Madam Chair. I do agree that we need to have a made-in-Alberta portfolio. I'm not so sure we should totally eliminate coal. Is there no ideal? Do we have to go from coal to no carbon, or can we go to low carbon in there? I'd really like to know how that option and that mix would go with natural gas because we do have an abundant supply of coal. How can we use that to our Alberta advantage?

Yesterday I think it was Mr. Armstrong who was talking about backing on to what's already existing with other jurisdictions. He was referring to site C. I think the footprint is important. What kind of footprint do we want to have if we move to hydroelectricity? What are some of the considerations of where that siting should be? Is it the Slave River, or is it an alternative based on some of the other things that are outside our jurisdiction?

I guess the last thing that I'd really like to have discussed is: does this only have to be an Alberta project? Certainly, we have provinces on either side. We talked to Manitoba Hydro, you know, slightly and said: well, would that work? Of course, the line was an issue, but Saskatchewan, the Northwest Territories, and British Columbia are our neighbours, so is there some way we can work together?

Thank you.

**The Chair:** Thank you.

**Mr. Webber:** Well, it's been said a number of times around the table here, and that is with regard to, again, the long-term economic viability of hydro generation in comparison to, you know, generation facilities that operate with natural gas or even coal or whatever. It was clear yesterday in a presentation by the aboriginal groups that their concern was the natural flow of the river and continuing to have that natural flow without the variability of flow throughout the seasons. It was a big concern that they have a water flow management regime in place. If that's the case, if we accommodate them in that way, then is it economically viable to invest in large hydro dam projects?

One thing that I learned yesterday – yesterday was an excellent day, actually. There was a lot of enlightenment with regard to the types of dams that are out there. I mentioned yesterday, again, that our visit on Friday to these two dams in the Calgary area was really beneficial with respect to enlightening us on the two types of dams, the reservoir dam, which was the Ghost. The Bearspaw: now, I have a question with respect to the Bearspaw dam. They consider it a run-of-the-river dam, yet there is a significant reservoir behind that dam with a head significantly high, so I consider that a reservoir dam as well. I'm a little bit confused on what a run-of-the-river dam really is. To me it's a natural flow of a river, and you just work it where you don't disrupt the natural flow, yet you are able to generate electricity. I would like to know

how viable these run-of-river dams are, the ones that don't have a reservoir type of accumulation of water behind them.

Also, I guess emerging technologies out there as well are something that I think perhaps we should have in the report somewhere with respect to, you know, the new turbines out there. Are they able to generate double the megawatt capacity of the old turbines? I think we have to take into consideration with any type of development what type of technologies we are using. I think most of our dams around the province here have relatively the older technology type of turbine. Are we able to expand on our generation by using the state-of-the-art technologies?

Anyway, those are my comments.

**The Chair:** Thank you very much.  
Ms Calahasen.

**Ms Calahasen:** Thank you very much. First of all, much has been said about some of these areas, so I'll just reiterate them. Bilateral agreements between provinces and territories, I think, are very crucial, but it's not only that. I think what we need to do is that we have to be able to make sure that we know what the federal rules and regulations are as well relative to these so that we know what kind of issues we'd have to deal with.

Of course, I think ongoing research is really important. I think in the report we have to be able to identify that ongoing research has to occur, whether it's in the water supply or the species that could be affected should this be something that we decide. I don't know if it was water supply or – what is the name?

**Dr. Massolin:** Water Matters.

**Ms Calahasen:** Water Matters. I think they brought out the fact that there were some concerns relative to the ongoing way of dealing with the researching of the species of not only the fish but also the other animal species. I don't know exactly how we do that, but I think we do that in other areas such as timber and those kind of agreements. That, to me, is a very important thing.

The consultation policy for First Nations and Métis, I think, is probably the most crucial item for us to be able to identify in our report, and I think they have to be completed. Somewhere along the way those two policies have to be completed. I think it's talking about concerns about the future of the people's lives that are going to be impacted. As an aboriginal person I really feel strongly that we have to be able to take their issues very seriously when we're talking about the future of people's lives and their livelihoods. There were a lot of things that were discussed on that issue, and I'm hoping that we'll be able to get the salient points to be able to address those issues as we go forward.

We have to also make sure that we look at the need. I think that has been articulated by some of my colleagues much better than I can articulate, so I'll leave that.

But I think it's so important, whatever we do, that we take into consideration the communities that will be impacted as well.

**The Chair:** Thank you.  
Ms Kubinec.

**Ms Kubinec:** Thank you. I have to say that this has been a fascinating process. I've really sort of moved along a spectrum, I think, as we were on our journey. A lot of what I feel has been expressed by other people as far as the economic feasibility and the environmental concerns and the community concerns. If I were to put it in a really short, little nutshell, I would say that we would recommend that we not do hydro and that we look at the feasibility of natural gas. When you think about the lifespan of a

dam as approximately a hundred years, natural gas coal-fired is about 30. The way the world has changed and the way technology has changed in the last 30 years, what is it going to be in 30 years? Would it be wise to put that huge capital investment into hydro when the future might be very, very different?

Those are my thoughts.

**The Chair:** Thank you.  
Mr. Xiao.

**Mr. Xiao:** Thank you, Madam Chair. I think that we have to answer two fundamental questions. One is the viability of the project, and one is the feasibility of this project. First of all, we have to answer the question of viability. If we cannot answer that question, there is no point for us to proceed to the next stage, you know, talking about feasibility.

**11:10**

In terms of the discussion about the viability, first of all, we should consider supply and demand. Is there a demand for it? Probably yes. How can we solve the demand given the natural gas supply, given the new technology in terms of burning coal?

Probably some of you don't know that I'm a coal geologist by training, and I think there's a lot of new technology now coming into play, for example gasification. You don't need to dig the coal out and burn it. You can gasify the coal underground, and then you actually can get at that natural gas – there's a lot of new, very clean technology out there – and it's more economical to do that because we already have so many existing power plants that are built right on the locations where coal is available. That's one issue.

Some of our colleagues are talking about the future. What I'm saying is that I believe in 15, even 20 years' time we will see new technology, for example fusion technology. Now, they already have a lab running in California. The minister, Ken Hughes, went down last summer, when I played a certain role because all the scientists are living in my riding. This year the Alberta government is helping them, funding the scientists. One tablet. You just need one tablet to run a fusion power plant for more than a year. Yeah. There are no disposal issues for that. So a lot of new technology will come into play in the next 15, 20, 30 years.

We have to answer all the questions. I'm talking about viability, you know. Yes, we have the demand given the growth of the economy, the population, but then we have to see whether or not hydro is the only solution.

I happened to visit a lot of hydros around the world. Dr. Brown, you probably did back in Brazil. Itaipu used to be the biggest hydro in the world and now has been overtaken by China's Three Gorges dam. I haven't been to that one. I think people tend to assume that it's pollution free, which is wrong. Why? Where does the steel come from? Where does the cement come from? Before you build a dam, you already produce significant pollution by producing the steel and the cement.

It's just like the electrical car. Everybody says, "Wow; it's emission free," which is not true. It's misleading. How do you make that battery and then the steel? Also, another question is: how are you going to dispose of the used batteries? They're going to cause a lot of pollution, too.

First of all, I think this committee should study the issue of viability. Is it viable? If it is viable, then which way of generating power is more viable? Then we will see whether that technology is feasible or not, whether it is available, is economically feasible as well as environmentally feasible. So I think the first question we have to answer is on the viability. If we come to the conclusion

that a hydro dam is not viable, we don't even have to bother to talk about the feasibility of this project.

That's my comment. Thank you.

**The Chair:** Thank you, Mr. Xiao.

I'm going to turn to Mr. Rowe now, but I'm just going to give a heads-up to Mr. Fraser, who's on the phone right now. You'll be next up, okay?

**Mr. Rowe:** Well, I was going to say that the good thing about being last is that you can just say ditto and carry on because everybody has made excellent comments, but I'm not last, so I'll make a couple.

I think relying on the price of natural gas today and going into the future would be a mistake. I think we need some alternatives, hydro being one of them, because it affects the market if we have more than one source for this. We've just seen dams that are almost a hundred years old in the last couple of weeks. We can't guarantee the price of natural gas for the next hundred years, and I would hate like heck to have 25 people sitting around in a room like this a hundred years from now saying: what in the world were they thinking? Yeah, we do need to establish those alternatives, that being one of them. I won't add anything more to that.

Just one thing. It may seem small – and I know that this isn't a list in order of importance – but I think that when we come to our final recommendations, the aboriginal groups and how we work with them needs to be number one. If we don't come to agreeable agreements, if I can put it that way, with them, this is going nowhere. It just will not happen. So we need to treat them with respect and dignity and as a true partner in this whole process.

Those are my comments.

**The Chair:** Thank you, Mr. Rowe.  
Mr. Fraser, are you on the line?

**Mr. Fraser:** Yes, I am.

**The Chair:** Okay. Your turn. Thank you.

**Mr. Fraser:** Thanks, Chair. You know, from everything that I've heard, to kind of go along with what has been much said around the room, I think it's really the long-term impact and what the alternatives to hydro dams are. Again, as discussed by you, Chair, obviously this is just a feasibility kind of study on what that looks like in Alberta, so I don't think we have to worry about location. But I do believe that really looking at the long-term impact and what that means for Alberta and Albertans, period: that's kind of where I lie. So really short comments, as long as we've hashed out the long-term impact and what the alternatives are. Again, that's what Ms Kubinec said. What are the alternatives, and how is technology going to change?

I always believe we should be on the front end of things rather than on the tail end. I think it's been clear and pretty interesting hearing some things from different places that already operate hydro plants, and some of their cautions for us I found interesting.

I'll leave it at that. Thanks for the opportunity.

**The Chair:** Thank you.

Mr. Saskiw, I think, is not on the line right now? Okay.

I'm just going to add some comments – there's nothing that hasn't already been said – in my capacity as a participant, not as chair. Mr. Stier, I've been thinking more about your comments. I think about these things.

**Mr. Stier:** Thank you.

**The Chair:** I think that having the community voice in the standing question and who participates in this decision-making is something that's very important. It's part of the regulatory process, it's part of the political process, and it's an economic process. One of the things we focused on a lot was the negative impacts on communities – and I think there are lots of negatives – but there are also potential positives. People talk about ice floe management and recreational water use and things like that, and I think that rarely are things all negative or all positive. I just hope that we look at that when we're evaluating the process for these kinds of projects.

The other comment I wanted to reinforce was Mr. Webber's point about: is it just a reservoir dam and run of river, or are there three? I think the engineer yesterday – I found that very illuminating, that there were three categories of dams. That made it easier for me to understand, because I, frankly, have never seen a pure run of river without a head. I don't know if it's even feasible. I heard it alluded to yesterday, but I wonder about its efficiency and all those choices about efficiency.

11:20

Coal. We didn't talk a lot about coal in this committee. I know we talked about it at the very beginning, whether we should or not. I think one of the references in our work will have to be to the pending federal decisions on coal. We're a coal province. You know, I think there are lots of ways to deal with coal. Taking it out of our portfolio I think is a very harsh consequence. I think the portfolio mix and how we transition are still really important. It may not be an answer we have right now, but it's certainly something that could be part of our recommendations.

Ms Fenske, you referred to this quite a bit – and so did others – about the footprint and resource conservation. I think ATCO's comments in particular struck me, that you can't just put, you know, dams all over the place without some bigger picture of resource conservation. I think that's really important. I think we're in a really odd place, where as a province we don't have that many dams in place, and we can think about this at a different level. I think that's, actually, really important.

I was also struck – Ms Johnson, you referred to the portfolio, and so did many others – by the possibility of electricity being able to top up others, to backstop wind, to backstop. It's a flip of the switch. I mean, thank goodness somebody a hundred years ago thought to build these dams that we can use as topping-up facilities. That's got a huge value. The portfolio is quite complex, so I think we need to, not perhaps in this recommendation, encourage decision-makers to get to that level of understanding of our portfolio and the various pieces of it.

The multijurisdictional piece and the navigable waters act changes, the federal role and how we deal with the territories and other provinces: it's been raised several times. I think that's profound. The aboriginal, Métis, and First Nation consultation process: absolutely critical.

I'm really encouraged by all the issues on the table. I'm sort of daunted by them, too. I think that as a committee the next thing I just want to progress to so that the working group can go forward is the level of detail of the recommendations. Maybe just some comments or questions from you about what you would like to see as committee members, what level of detail of recommendation. I just put that on the table now for comments if anyone has any. You don't have to have them today.

Dr. Xiao.

**Mr. Xiao:** I'm not a doctor.

**The Chair:** Well, today you are.

**Mr. Xiao:** Okay. Thank you.

I personally don't believe this is the government's role, to build a dam or something. I think this should be left for the market to decide, whether there's a market demand for this. Then business will come in and build and plan to provide the electricity. Having said that, I'd like to see that we recommend, you know, to whomever is going to carry out the potential project or whatever in the future that they should consider and make sure that they study very carefully first of all the economic viability and also the environmental viability and also consider all the new technologies that are available or are going to be available in the near future in order to make a viable decision with a vision that this is going to not only meet the demand for electricity but at the same time has a minimum impact to the environment.

If you have seen a big dam, the environmental impact is huge. If you have been in Brazil, if you have been in China, it's huge. What we're talking about could be thousands of square kilometres in terms of the area. It's huge, and it's irreversible once you build that dam. It's irreversible. So what I'm saying is that we've got to make sure that, you know, we leave a minimum footprint.

Madam Chair, if I may, I want to mention that, you know, very recently there's a new technology. Calgary bought two gas turbines last year from Japan. They transported them by rail. They had to ship them over to the east coast and brought them over to Calgary by rail. The gas turbines can meet two-thirds of the electricity demand of the city of Calgary. I also talked to one of the CEOs from the oil sands. They can also now just simply buy a turbine to meet all their demand in Fort McMurray, you know, their own operation. The gas supply is available – they've got the pipe – and they don't have to build the transmission lines.

Those are my comments. Thank you.

**The Chair:** Thank you.

**Mr. Anglin:** I would caution getting too technical in the sense that when we look at every issue that's been brought up, every issue that has been brought up is extremely complicated if you dig deep enough. If we don't keep this at a very high level, we could then tend to imbalance some of the issues.

I'll give you an example. As our coal expert may realize – and I know he knows – some of our cleanest water comes from coal seams. That's where it's located. It's not created by the coal, but it's located within those seams. Any time you touch those coal seams, people who care about water get very concerned, and that opens up a whole range of issues. As we look at each item, it does open up all that.

I will say one thing, though. I did have the opportunity two or three years ago to witness the removal of a dam and the reclamation of a river, so it can be done. It was on the Blackfoot down in Montana. Very well done.

It is important, I think, to keep it on a high level, on the economics and the viability. So many of the complicated issues really come forward with Alberta Environment, the Alberta Utilities Commission, the project applicant, which would be whatever companies come forward. They will present that to the various regulatory boards.

But on that one item that my colleague brought up – we did hear this – I can't find an example of any dam or nuclear power plant that's ever been undertaken without some sort of government support. That was brought up in this with ATCO in particular. I did ask the question yesterday with regard to a feed-in tariff versus a guarantee: would that play a role? I think that's a significant

question for this panel to make sure it does address when we deal with the economics because, clearly, that was made part of it, and we just have to make sure we don't overlook that whatever recommendation we make.

**The Chair:** Thank you.

Mr. Hale.

**Mr. Hale:** Yes. Thank you, Madam Chair. Yesterday I asked a question at the end. One of the groups stated, I think, that 60 per cent of the power in Canada was provided by hydro and only 8 per cent in Alberta. I think we need to look at why that is in the other jurisdictions. Why are they using hydro instead of any other means as a broad, overall picture? As some of the other members have stated, we can't get too detailed, or we can have, you know, thousands and thousands of pages of recommendations. But as we look at the overall picture, why are they using hydro instead of something else, and what are the benefits to it?

**The Chair:** Okay. Anyone else have comments?

**Mr. Casey:** I agree that getting into too much detail just isn't practical. We just simply haven't done enough research on any one of these items to get into the level of detail that would be of value. Identifying the issues is certainly one. I think that being able to break them down, though, into two or three categories, ones that are critical, for example – in other words, this thing will absolutely not be feasible at all unless we deal with these issues, and we've got two or three. With the critical ones, if we're going to add detail, well, then, let's add some detail into those. There are other issues that need to be resolved. If you get by the critical piece, then here's another series of issues, and we can identify those.

**11:30**

Then there are considerations. Some of this is just simply: here are things that must be considered if you're going to move forward. I think breaking it down in scale and maybe detail makes, at least in my mind, some sense. The critical ones: if we can provide whatever detail we've got, those are the ones that will trigger the next. If we don't get by the critical ones, the ones that are make or break, then there's no sense in moving forward.

I wanted to go back to Len's point, though, just for a minute. I did ask the TransAlta guys when they were here, and they didn't really have an answer. A lot of their generators and a lot of their technology were based on demand a hundred years ago, literally. As we saw on Friday, nothing has changed, right? They had four generators there a hundred years ago; they have four generators there today.

The question I had is on capacity. The Kananaskis lakes sit half empty most of the year, and that's because they only use them to top up. They're not using Ghost or expanding the capacity of Ghost simply because they use them to top up our coal-fired plants. So these plants are only being used for peak on, peak off because that's the system we've got, right? They're the ones that can add the topping-up capability.

But it would be interesting for me to understand what the total reservoir, dam, lake capacity is if we were to maximize the amount of water and the holding capacity of those existing facilities, which are massive in the end. What would that look like? If we're trying to get another 10,000 megawatts of power here, how much of that can be supplied without going through new regulatory processes but by simply maximizing the energy we

already have stored there in water or potentially stored? We simply flush it down the river without any real benefit at the end of the day.

I know we didn't go there, but I think, Len, that was really your point: what about the change in technology? But combined with that, what about the capacity? I don't think we're using those sites anywhere near the capacity.

**The Chair:** We don't have to have all the answers to the questions. We can in our set of recommendations raise issues and questions for some other group to pursue. Thank you.

Mr. Cao, you had a question or comment?

**Mr. Cao:** Not really a question. I just wanted to add my thoughts to, I think, so many good ideas here. As the committee our term of reference is the feasibility of hydroelectricity, so in my mind the question is: is it feasible? We have heard so far presentations and so on. In my mind I think it's feasible – okay? – but there are other obstacles we have to come through. The thing I see is that it's very feasible because we have the resources. We have the natural water, the capacity that Ron talked about, all of that. Somehow we have to identify what is the capacity that Alberta has in terms of water flow. From that perspective, I see it is quite feasible.

We don't have big rivers to worry about them flooding the whole country, thousands of kilometres. We don't have those big rivers. But we do have capacity here and the potential, as I said. So that to me is the first part, and then it's how we utilize that capacity. To me, it's feasible. But the qualification of that feasibility is this: first of all, do we have money, meaning public dollars, to spend there? I would say no, okay? We would leave everything – profit and loss and economic considerations – to the investors, the private people.

So those are the things that I see as feasible, but these are the things that we need to consider, considerations like the economic side of it, the environment, the people affected, all of those. If consideration on those is okay, then go ahead.

In my mind, just to sum up what I heard so far, it's very feasible because people have done it before. We have only – how many per cent? – 8 per cent hydroelectricity in Alberta. Why? There's probably a lot of potential. It's feasible. Identify the obstacles or the things to be considered. Once we go through that, it's feasible. That's my perspective.

Thank you.

**The Chair:** Thank you.

Dr. Massolin, you're going to have your time filled for the next couple of weeks, I think. It's regrettable that there's not someone here from the Liberal caucus or the ND caucus. I'm sure we'll get their comments and their observations, and they will be incorporated through the working group into this write-up. On this basis, I feel really comfortable as chair that you've got clear directions. Are you comfortable with what you're hearing and the go-forward plan?

**Dr. Massolin:** Well, I am. I think this is sort of the leading edge of the wedge, as they say, you know, in terms of getting ideas on the table, and then these ideas will hopefully be refined.

The other thing I would add – and I think you made this point quite recently in this discussion – is that the recommendation doesn't necessarily have to be informed in terms of what the committee has heard or what has been researched or what research is out there. It could be posed as a question or as a recommendation to do further study, which is an informed issue in and of itself.

I hear a lot of that. “We need to know more about this or more about that.” It’s not the time to do more research on this or that or to hear from stakeholders on this or that. It’s about perhaps formulating recommendations along those lines.

**The Chair:** Good. We can set the dates for future meetings, but before we go to that, is there any other business that members would like to raise?

**Ms Calahasen:** Just something that I’ve been thinking about because we’ve got all sorts of recommendations that are coming forward. I don’t even know if we could call them recommendations but issues that have come out. Presently, we’ve got ongoing processes like the water discussions. I’m just wondering if there is anything we do with this report once it’s out to those different ministries, or do we just – I don’t know. I guess that was going to be my question because, I mean, we’ve got these ongoing processes, and I need to know where we fit into that.

**The Chair:** That’s a great question. My understanding is that we table this full report with the Assembly, and at that point in time we would note to particular ministries or ones that we want in particular to take notice of what we were highlighting. We would do it at that time. Then to follow up, I think, is something that as individual members we choose to do. It would be perfectly in line with a report of this nature to do that.

**Ms Calahasen:** So time is of the essence, then, Madam Chair.

**The Chair:** Absolutely.

**Ms Dean:** Madam Chair, I’m sure you’re aware of this. There is a timeline of 150 days for a response to come from government once the report is tabled.

**The Chair:** Yes. We can mark the calendar, and we should have a celebration when that day happens.

Any other business, folks? Okay. If not, then let’s talk about the future time frames. Mr. Tyrell will get in touch with the working group members, and we will start working probably very, very soon.

A full meeting of this committee: we’ve looked at our calendars, and we’ll need you to look at yours. Again, Mr. Tyrell will be in contact with you. I think it’s wise to set two meetings, maybe one after the Family Day weekend, the week of the 18th, and then one the week of February 25. Maybe we don’t need both of them, but if we do, I think it’s wise to have them in our calendars. The intent would be to review the full report in whatever stage it is at and make sure everybody’s comfortable with it.

**11:40**

You always have the ability to work through your caucus representative on the working group to make sure your ideas are incorporated, or if you have an epiphany on the drive home today, please let people know, and certainly let Dr. Massolin know as he’s creating this.

If that’s okay, unless anybody has comments on that. Yes, Mr. Stier.

**Mr. Stier:** Thank you, Madam Chair. Just an add-on to your suggestions. I note that I’m up here for the 26th and 27th for Public Accounts, so if we had something on this on the 25th, that wouldn’t be in the realm of an extra trip kind of thing. If I could offer that, please. Thank you.

**The Chair:** Good. All right. Well, we will be back on that.

If there is nothing else to consider, then would somebody like to move that this meeting be adjourned?

**Ms Calahasen:** I will.

**The Chair:** All in favour? Any objections? So moved. Thanks, everyone.

[The committee adjourned at 11:41 a.m.]



