HOUSE OF COMMONS
CHAMBRE DES COMMUNES
CANADA

Standing Committee on Natural Resources

RNNR • NUMBER 077 • 1st SESSION • 42nd PARLIAMENT

EVIDENCE

Wednesday, November 29, 2017

Chair

Mr. James Maloney

Standing Committee on Natural Resources

Wednesday, November 29, 2017

● (1600)

[*English*]

The Chair (Mr. James Maloney (Etobicoke—Lakeshore, Lib.)): I call the meeting to order. We're going to get under way. Thank you to everybody for accommodating the late start.

We have three witnesses who are joining us today. We have the two by video conference, and we have Ms. Yan, who will be joining us momentarily.

The procedure is that each of you will be given up to 10 minutes to make a presentation, which you can do in either official language. You will be asked questions afterward by members around the table, almost certainly in both official languages. There should be equipment available to you if you need interpretation.

From the Coastal First Nations Great Bear Initiative, we have Paul Kariya.

I have to ask, because I'm a hockey fan, are you any relation?

Mr. Paul Kariya (Senior Policy Advisor, Coastal First Nations Great Bear Initiative): Yes, he's named after me. He's my cousin's son.

The Chair: He's named after you?

Mr. Paul Kariya: He's Paul T., and I'm Paul H.

The Chair: How are you related?

Mr. Paul Kariya: He's my cousin's son.

The Chair: I'm a big fan. He was part of one of the greatest Olympic goals ever.

Mr. Paul Kariya: He's a fantastic person and a terrific hockey player.

The Chair: Yes.

I just learned that Ms. Yan, just so everybody is aware, has the honour of being the sister of Geng Tan, who is ordinarily a member of this committee but is not here today.

Ms. Ning Yan (Distinguished Professor in Forest Biomaterials, As an Individual): Yes.

The Chair: I was going to say be very nice to her, because Geng will be back here on Monday.

Ms. Ning Yan: I'm sure Geng wants you to treat me just like everyone else.

The Chair: From the Wood Pellet Association of Canada, we have Gordon Murray. I don't know any of your relatives, but I don't want you to feel left out in any way.

Mr. Kariya, why don't we start with you, sir? You can lead us off.

Mr. Paul Kariya: Thank you very much, Mr. Chair, and thank you, committee members.

Thank you for the opportunity to appear before you and to represent Coastal First Nations. I bring greetings from our president, Chief Marilyn Slett; our board chair and CEO, Mr. Patrick Kelly; and our whole board and leadership.

I appear before you from Vancouver on the traditional and unceded territories of the Coast Salish peoples, represented by the Musqueam, Squamish, and Tsleil-Waututh first nations.

I have divided comments into three sections: one, who the Coastal First Nations are; two, comments on the forest sector in the footprint of our nations; and three, some broader policy considerations.

The territories of the Coastal First Nations Great Bear Initiative member communities lie in the Great Bear Rainforest, one of the largest temperate coastal rainforest systems left on earth, and on the coastal shores of the Pacific Ocean.

CFN-GBI is an alliance of first nations with approximately 15,000 members. We are a unique organization, because representation includes various cultural and language groups—indeed, different first nations.

CFN-GBI is not the rights and title-holder; the member nations hold these. We are a 17-year-old, not-for-profit service organization created and maintained by the nations.

CFN-GBI communities have forged a rich culture in the north Pacific bioregion. The cultures, languages, and livelihoods are deeply connected to the riches of the rainforest and ocean. For at least 14,000 years, the people carefully managed an abundance of resources—ancient cedars, herring, salmon, halibut, shellfish, and more. They relied upon their knowledge of seasonal cycles to harvest land and marine resources without harming or depleting them.

Many believed these resources would last forever. They were wrong. After mere decades of over-exploitation, the forest and ocean resources of the Great Bear Rainforest and ocean have been depleted. Our region's economy has dwindled, jobs have become scarce, and the communities are challenged to survive.

The common reality of where the nations reside, obtain their identity, and need to re-establish a conservation economy has brought them together to work through CFN-GBI, the Coastal First Nations Great Bear Initiative.

Let me turn to some comments on forests and forestry and our nations. Our communities are working towards a coastal economy based on traditional natural resources such as fish, fisheries, and forestry. At the same time, we are exploring newer sectors, such as non-timber forest products and shellfish aquaculture.

One of our businesses, the Great Bear Rainforest Essential Oils, produces unique essential oils derived from natural conifer needles sustainably harvested in the Great Bear Rainforest region. The goal is to find culturally appropriate value-added products from the Great Bear Rainforest that would provide long-term sustainable and meaningful employment for remote communities, while at the same time protecting the forests. In 2007, Coastal First Nations began researching ways to derive essential oils from the conifer trees that grow in the reaches of the Great Bear Rainforest.

Since the signing of the Forest and Range Practices Act with British Columbia in 2003, CFN-GBI members have, to varying degrees, made progress on community economic development through the development of commercial forest tenure opportunities. Real progress has at times been frustrated by market declines, lack of access to viable harvest opportunities, and provincial policies that tend to disadvantage small tenure holders, first nations or otherwise.

However, along the way, forestry operational planning, business acumen, and working relationships with other licensees in the private sector have been developed. Recent upturns in markets and initiation of a tenure recharting process, if successful, will help to create stability for operational planning and investment. This, coupled with investment in value-added and local service sector opportunities, creates potential to reinvigorate the coastal forest sector.

● (1605)

The nations in B.C. are committed to explore and seek to identify and implement policies and measures that improve the economic viability of small first nation and coastal community forest tenures.

We seek to identify ancillary services and value-added forestry business opportunities, like the one I mentioned, that can be developed in CFN communities and, with industry, develop a strategic plan to realize them.

We seek to identify gaps and needed investments in regional forestry-related transportation infrastructure, and so forth, and to jointly approach the federal government to develop and implement a regional infrastructure development plan.

In 2016, after years of negotiations, the nations entered into the Great Bear Rainforest agreement and in 2009 signed the first reconciliation protocol with the Government of British Columbia. Under that protocol, having protected the forest to date, CFN has seen an outcome of a far-reaching carbon credit opportunity. Today CFN is the largest carbon credit marketer in Canada through the Great Bear Carbon Credit Limited Partnership. We have sold some 2.6 million tons over the past six years, and by the end of this year, we expect to be managing well over a million tons of carbon offsets per year.

I will move on to policy considerations.

Based on implementing UNDRIP and mindful of a new reconciliation priority, bilateral engagement between Coastal First Nations and Canada has brought CFN members in Canada to engage in two major reconciliation framework negotiations. The first is on oceans management and the second is on fisheries resources.

Our chiefs, Minister LeBlanc, and Minister Bennett signed a reconciliation framework agreement on fisheries resources on October 11, 2017. Now the goal is for cabinet to endorse a mandate with real funding investment to give meaning to reconciling and repatriating fish and fisheries to the rights and title-holders.

CFN-GBI chiefs and other nations in the north Pacific shelf region are currently engaged in a government-to-government working group to achieve a similar oceans protection and management reconciliation framework agreement. Protecting ocean resources, ensuring safe shipping, engaging the people who protect and maintain Canada's sovereignty on the coast, and combatting the effects and impact of climate change are priorities.

The forest sector is very important to member first nations for both traditional and new value-added forestry. It is a key topic as we negotiate the next phases of reconciliation with the Government of British Columbia. For CFN-GBI nations, at the heart of the matter is that having made significant strides to protect the environment, they need to fashion a sustainable economy that supports healthy communities and human well-being.

Traditional and new forestry play a big role in this, as do fish and fisheries, tourism, and potential opportunities in clean energy. The key is sustainability.

Thank you very much.

● (1610)

The Chair: Thank you very much.

Ms. Yan, why don't you take the floor?

Ms. Ning Yan: Thank you, Mr. Chair.

I'd like to thank the committee for the opportunity to present my views on secondary supply chain products in the forest sector in Canada.

The forest sector contributes significantly to the social and economic prosperity of Canada. With the recent shifts in market demand, increasing trade barriers, and higher competitive pressure for traditional forest products, there is an urgent need for the sector to revitalize and transform to ensure that it remains an economic engine of Canada in the future. Meanwhile, with the societal movement towards higher sustainability, the Canadian forest sector has a unique opportunity to become a leader in supplying innovative, value-added, and green products from our responsibly managed forest in the new bioeconomy.

Being a scientist and an engineer with more than 20 years of industrial and academic experience in the forest sector as well as in conducting research and development on wood and paper products as well as forest biomaterials and biochemicals, I'm deeply engaged in and passionate about this transformation. My career in the forest sector started when I was a Ph.D. student at the pulp and paper centre in the University of Toronto in 1993 almost 25 years ago. After obtaining my Ph.D. degree in chemical engineering in 1997, I worked as a research scientist for two years at the Pulp and Paper Research Institute of Canada, formerly Paprican, in Pointe-Claire, which is now part of FPInnovations.

I also worked as a research scientist on digital printing media for Xerox Corporation in the United States prior to becoming a faculty member in the faculty of forestry at the University of Toronto in 2001. Additionally, during my sabbatical leave from the university I was a visiting scientist at Innventia in Sweden, one of the largest forest products research institutes in Europe, which is now a division of RISE Bioeconomy. Currently I'm a full professor at the department of chemical engineering and applied chemistry and I hold a distinguished professorship in forest biomaterials engineering and an endowed chair in value-added wood and composite at the University of Toronto. Besides research, I also teach graduate and undergraduate courses on forest products, biomaterials, and biocomposites.

The research program I established focuses on developing value-added biocomposites and functional materials using nanocellulose and wood fibres and on synthesizing biochemicals using lignin and bark with the aim of replacing petroleum-derived products.

In particular, I'm recognized as a leader in developing bark biorefinery technologies. Bark is a low-value residue generated from sawmill and pulp mill operations and is available in large quantities in Canada. Bark contains all major chemicals found in wood, such as cellulose, lignin, and hemicellulose, but bark also contains extractives. Currently bark does not have high-value applications. Mostly it's used as part of low-grade hog fuel burnt for heat recovery.

Bark presents an untapped opportunity for value generation. My research team has developed an extraction process to obtain biocompounds from bark; value-added bark-based adhesives for gluing particleboard, OSB, and plywood; and bark-based polyols and polyurethane foams that can be used in the construction and auto sectors. We have demonstrated at the lab and pilot scale that these bark-based biochemicals perform as well as their petro-derived counterparts do. These biochemical products could potentially provide higher economic return to forest companies by using a low-value residue stream as the raw material while allowing chemical companies to add renewable content to their products. I'm working on moving these technologies out of the university labs to advance further towards commercialization.

As an academic professor, today I would like to talk about the idea of building a vibrant innovation ecosystem that can directly support and accelerate the transformation of the secondary forest products sector. I'd like to talk about building a forest products innovation value chain to facilitate the translation of university research into practice.

One key aspect of a successful innovation ecosystem is the easy flow of ideas, allowing rapid transfer of innovation from university to industry.

● (1615)

Canada is recognized as a leader in forest products research. Universities have generated an abundance of innovative product ideas and technologies. These ideas are the result of publicly funded research activities carried out by faculties and students. However, success in industry uptake of these technologies has been limited. Significant barriers exist for university researchers to commercialize their technologies and products in the forest sector.

Usually, innovations and discoveries at universities are at an early stage and are high-risk ventures with a significant uncertainty for commercialization. Some may only target niche applications. Others may be markets that are unfamiliar to the forest sector. This is particularly challenging, given that the forest sector has traditionally been a capital-intensive and large-commodity-based player.

It becomes even more difficult when the receptor capacity of the forest industry is shrinking. Fewer forest products companies are in operation today, due to a large number of mill closures in recent years. As well, the significant challenge in accessing capital for start-ups in this sector creates major roadblocks in pursuing commercialization.

Another important feature that a fully functional innovation ecosystem has, besides the free flow of ideas and easy access to capital, is its strong innovation capacity. At the universities, we need to train young people with not only sound scientific knowledge about forest product materials but also expose them to entrepreneurial skills so they can be the driving force for innovation and commercialization for the sector.

However, we also need industry to employ more highly trained post-graduates to build up the innovation capacity that was largely lost due to the economic downturn. This would help with the uptake of new ideas and technologies.

An additional important factor that allows for building full innovation capacity is to promote equity and diversity and to empower more women, minorities, and indigenous people to take up senior leadership positions in industry and academia in all areas of the innovation ecosystem.

To conclude, innovation will be the pathway to help the forest sector be a leader in the emerging bioeconomy and stay competitive in the global marketplace. A vibrant innovation ecosystem should allow innovative product ideas, whether large or small, early or late stage, to move easily out of universities to form an innovation pipeline.

I would like to suggest to the committee to recommend the federal government put a mechanism in place to close the gaps in the innovation value chain for the forest products sector in Canada. Government can help provide university researchers with access to investment capital to further incubate and de-risk their ideas to lower the barrier for uptake by the industry.

Specifically, government is recommended to put policies and initiatives in place to, first, foster a healthy blend of small bets, large bets, and start-ups in the forest sector in Canada; second, enhance innovation capacities, both in training of the young leaders of tomorrow in universities and in addressing the lack of innovation capacity in the industry; and third, promote equity and diversity in senior leadership positions in industry and academia to fully energize the workforce.

I hope that with the innovation ecosystem, Canada will become a global bioeconomy powerhouse in forest products innovation and commercialization, with a strong, transformed, and competitive forest products industry, a powerhouse that will provide well-paid jobs and growing and fulfilling careers for young people, much like Silicon Valley did for high-tech innovations in the south, and at the same time contribute strongly to global stability and climate change mitigation.

Finally, I'd like to thank the committee for the invitation to appear as a witness today.

● (1620)

The Chair: Thank you very much. Your brother would be very proud of you.

Mr. Murray, we move over to you.

Mr. Gordon Murray (Executive Director, Wood Pellet Association of Canada): Thank you, and thanks to the committee for giving me the opportunity to discuss Canada's wood pellet sector.

What I would like to touch on today is how the wood pellet sector fits within Canada's forest industry. I'd like to give you some basic information about wood pellets and some statistics about the global and Canadian wood pellet industry. I'll also tell you about the opportunity to repurpose coal power plants in Canada to use wood pellets and how wood pellets could be used more for domestic heating opportunities in Canada as well.

To put the wood pellet sector into perspective, Canada's annual log harvest fluctuates a little from year to year, but on average it's about 130 million tonnes of trees harvested. Out of that, about five million tonnes are used to make wood pellets. That's about 4% of Canada's harvest that goes towards wood pellets, although the revenue is very much less.

Total forest products revenue in Canada is around $60 billion per year. Revenue from wood pellets is about $300 million. It's only about one half of 1% of the total forest products revenue. We're providing around 2,000 jobs in production plants, fibre procurement, transportation, and terminal operations at the ports.

We have 44 pellet plants in Canada. About 70% of the production is located in British Columbia, and about 30% is in Quebec and the Atlantic provinces. There is some production also in the prairie provinces and central Canada.

Notably, annual capacity is about four million tonnes, of which one million tonnes, or 25%, was built just in the last 18 months. We have another 400,000 tonnes of capacity under construction at the moment, so it's a growing sector.

Wood pellets are a renewable biofuel, a solid biofuel, made from compressed wood fibre. During the process, the fibre is made into small particles and then put under high pressure. The heat and the pressure cause the lignin to liquefy. The pellets are then exposed to cool air and form into a pelletized shape. There are no adhesives or additives, so it's just pure wood fibre.

The raw material we use was formerly wasted. It used to be landfilled or burned in beehive burners. We're using sawdust shavings out of planer mills. We go in after the log harvesting operations and use low-grade material that has been left behind on the roadside after logging.

Globally, roughly half of the wood pellet supply is used for power generation, normally as a replacement for coal in coal power plants. It is also used for heat and hot water through residential furnaces, boiler systems, and stoves.

The pellet industry has grown tremendously. We started in about 1995 at zero and have grown at about 14% per year. Global production right now is about 30 million tonnes, with a 14% annual growth for the last 20 years or so, which we think is fairly impressive.

Turning to export destinations, last year we shipped 1.6 million tonnes to the United Kingdom, all for power generation. We're also shipping into Belgium, Japan, and South Korea—again all for power generation—as well as into the U.S. and Italy for domestic heating.

● (1625)

Most of the pellets that are exported from Canada, about 90%, come out of British Columbia, and most of that ends up going down through the Panama Canal and across into central Europe or the United Kingdom. We also ship west to Japan. Europe makes up about half of global wood pellet production. Also, the U.S. is a very large producer. Canada is the third-largest producing region globally, followed by, surprisingly, Vietnam, Russia, and then all other countries.

In terms of consumption, about 80% of all wood pellets that are consumed globally are consumed in Europe, and about 12% in North America, 2% in Russia, and about 8% in Asia.

About a year ago, Canada announced its intention to phase out coal power. We have coal-powered plants in Alberta, Saskatchewan, New Brunswick, and Nova Scotia. Coal already has been phased out in Ontario, while in Alberta it makes up 55% of the energy mix. In Saskatchewan it's 44%, in New Brunswick 13%, and in Nova Scotia 60%. When coal is phased out, a large number of power plants will still have life left in them and potentially will be stranded assets. We'd like to see Canada follow what's being done in Europe and Asia and repurpose those coal-powered plants to use wood pellets, which are a renewable carbon-neutral fuel.

The benefits of wood pellets are that they can be ground into a small powder similar to coal, and they're dry, handle easily, and flow easily. They have an energy density similar to that of lignite coal. You can use much of the same equipment found in coal-powered plants. Unlike wind and solar energy, bioenergy is dispatchable, which means that it's available on demand and can be used for balancing and for peaking power. It has lower greenhouse gas emissions than you get from coal or natural gas: lower nitrous oxides, lower sulphur oxides, lower heavy metals.

Also, there's a very modest cost to convert Canada's coal-powered plants. Already, in Ontario, OPG has converted two plants in northwest Ontario, in Atikokan and Thunder Bay. Both of those are operating successfully on wood pellets now.

On the opportunity in the heating sector, in Canada we use almost 2,700 petajoules of energy for commercial and institutional heat and to provide residential heat and hot water. About 50% of that is fuelled by natural gas in Canada, but about half of Canadian homes and businesses do not have gas access, and the main alternatives are electricity and oil.

We took some examples of costs from Ontario. Natural gas is the lowest-cost fuel, but wood pellets are significantly lower-cost than heating oil or electricity. By converting homes, businesses, and institutions to wood pellets, using modern, very efficient appliances, there's an opportunity both to lower greenhouse gas emissions and to reduce heating costs in Canada.

● (1630)

To talk about the magnitude of the opportunity, Canada uses around a trillion gigajoules of energy for heat and hot water per year. That's equivalent to about 71 million tonnes of wood pellets. Canada right now is producing only around 2.7 million tonnes. It's just a tiny fraction of the potential for our industry to grow.

I did want to mention the support we get from the federal government for our industry. We work closely with Natural Resources Canada. We also work with the trade commissioners in many foreign countries. Through Natural Resources Canada's expanding market opportunities program, we get assistance in attending conferences and trade missions, in working on sustainability certification for market access, in quality certification for promoting our products in other countries, in addressing trade barriers that come up from time to time, in working on issues to do with shipping and logistics, in pellet standards, in phytosanitary issues, and in new types of products. I just wanted to mention that the expanding market opportunities program through NRCan is extremely important to us, and we very much appreciate the co-operation we get there.

To conclude, Canada's pellet industry is growing, thanks mainly to demand from Europe and Asia. We see that repurposing pulverized-coal power plants for co-firing or dedicated firing with wood pellets is proven and widely used in many countries. We think there's an opportunity for Canada to adopt this approach more widely. There's a huge opportunity to increase the use of wood pellets for domestic heating in Canada.

Thank you to the committee for this opportunity.

The Chair: Thank you, Mr. Murray.

Mr. Harvey, the floor is yours.

Mr. T.J. Harvey (Tobique—Mactaquac, Lib.): Thank you, Mr. Chair.

First of all, thank you to all the witnesses for being here today.

I'll start with you, Mr. Murray. In your presentation you talked about converting coal-fired plants over to wood pellets. How widely adopted has that been? What do you think the major roadblocks would be to widespread expansion of the utilization of wood pellets to replace coal?

Mr. Gordon Murray: In North America and Asia it's a very well-established practice. We have power plants in the United Kingdom, Denmark, the Netherlands. It's very mainstream.

The cost to convert a plant is quite minimal. You just need to have covered storage and separate conveyers and change out some of the grinding and burner systems. The rest of the power plant stays the same. The technical risk is zero. There's no loss of efficiency in the plant.

Really, the main barrier is that wood pellets cost more than coal. There needs to be a policy framework to support it. Each country does it a little differently. The way it's working in Europe and Asia is that there are green certificates or renewable portfolio standards or mandates or taxes—something to raise the cost of coal that makes it possible to use wood pellets.

We've talked to a number of the power utilities in Canada. Ontario Power Generation is sold on it. They've converted two plants and have had great success, but the other plants.... They're traditional industries. They're cautious. They're still waiting for the provincial and federal regulatory environment to become more clear before they embark on the change.

● (1635)

Mr. T.J. Harvey: In terms of the widespread adoption of this type of technology, do you think there's an opportunity on a broad scale to use alternative fibre sources along with wood fibre to reduce the amount of total gross product that has to come from wood fibre? For example, it could be combined with reed canarygrass or another fibre source—hemp, potentially—to make a combined pellet that would still have significant heating potential but would reduce the amount of fibre content that has to come from forestry, especially in jurisdictions that don't have as much of that readily available fibre as others.

Mr. Gordon Murray: There is an opportunity to use agricultural by-products, such as grasses, hay, and straw. The difficulty is that they tend to have a higher amount of chlorine in them, which causes corrosion in the boiler systems. They also have a higher amount of ash, which causes some disposal problems. It tends to be a bit more difficult to collect that material.

We're certainly supportive of trying to use it. Where straw or an agricultural type of pellet is used, it is usually at a lower proportion. Usually some wood has to be mixed into it to keep the ash property of the fuel down, but definitely there is an opportunity to use that agricultural biomass.

Mr. T.J. Harvey: Mr. Kariya, could you elaborate a little bit on where you think the biggest potential for growth would be for Coastal First Nations in regard to secondary manufacturing? Where do you see, through your organization, the opportunity?

Mr. Paul Kariya: That's a good question.

We have licences amongst the nations we represent, but they're finding that it's difficult to make a dollar in traditional forestry. While traditional forestry is going to remain important, I don't see it as being a growth area.

We have essential oils and other secondary manufacturing. Where the harvest occurs—it's really a cedar market—it's very difficult to do much there, but here will be a role to be played.

I think that right now the best value for our nations is probably in carbon credits. Saving those forests and reducing the annual allowable cut can yield a significant carbon credit that can be marketed. We sell on the market. We have a buyer in the Government of British Columbia, and we're hoping the Government of Canada will become a buyer. We're hopeful that we can get to other jurisdictions. Carbon credit from leaving the trees there, in situ, is important for us.

● (1640)

Mr. T.J. Harvey: I'd like you to elaborate a bit on the importance of co-management of forests between nations—that is, co-management by the federal government, the provincial government, and indigenous nations. Do you think the move in recent years towards a more collaborative management approach could play an important role in ensuring that Coastal First Nations have the opportunity to benefit from expanded opportunity?

Mr. Paul Kariya: Our carbon credit corporation, our emergent essential oils corporation, our timber sale licences, and parts of tree farm licences—these are all the result of this kind of negotiation, reconciliation, and getting into co-operative management. I very much believe the future lies in having both governments, in British Columbia and Canada, committed to an application of UNDRIP and to reconciliation.

Making those elements practical, making them a reality, means that you get together, you do joint information gathering, you do joint planning, you do marine and terrestrial planning. This is at the heart of achieving our goals. It's government to government. I'm quite optimistic that we have forged a path, and I'm very proud that the leadership in our nine communities has achieved this kind of relationship with the governments.

Mr. T.J. Harvey: Thank you very much, sir. I'm out of time.

The Chair: Mr. Schmale is next.

Mr. Jamie Schmale (Haliburton—Kawartha Lakes—Brock, CPC): Thank you, Chair, and my thanks to the witnesses for being here.

Mr. Murray, when I was growing up in the late 1990s, we had a wood pellet stove. It's a great source of heat. We didn't have natural gas and electricity. Even in Ontario, it was pretty expensive back then. There's my jab for Ontario.

Voices: Oh, oh!

Mr. Jamie Schmale: As you said in your own words, pellets are a fairly new source of energy. In the pamphlet you gave us and in your presentation, you showed the increased demand for pellets around the world. Where else in the EU are you seeing the most growth, and where are you looking for new markets?

Mr. Gordon Murray: The U.K. has two new plants under construction. Actually, one of them is almost finished, at Lynemouth in northeast England, and then there is MGT power in the Midlands. They are both going to consume about a million and a half tonnes each. Drax Power, our biggest current customer in the U.K., is looking to convert another boiler, which could be another two million tonnes.

In the Netherlands, there has been quite a big internal debate over sustainability criteria, which is mostly solved now. We expect that this market will be active again this year and that we'll see large growth there. Denmark is growing. Italy is growing. However, despite the great prospects in Europe, Japan and Korea are the fastest-growing markets right now. That's all entirely due to conversion of coal power plants.

Mr. Jamie Schmale: Excellent.

Most of your production, as you mentioned, was in British Columbia, and some out east. In terms of a production facility in northern Ontario or somewhere in Ontario, why do you think Ontario has been a little behind in comparison to the other provinces?

Mr. Gordon Murray: I wouldn't say Ontario is necessarily behind. There are actually two or three pretty large plants in Ontario right now—one in Thunder Bay, one in Atikokan, a very large one in Wawa, and then several smaller ones around Toronto and Hamilton.

The very large plant that was built in Wawa is idle right now. That's because the company had poorly designed the plant, and investors just tired of it. I think they're looking for a new buyer to take it over right now.

I think the main issue with Ontario is that to date our industry has been so focused on export markets, and it's really just a function of the distance to port.

● (1645)

Mr. Jamie Schmale: Okay. Yes, I wondered if that was the case, considering your diagrams.

Thank you, Mr. Murray.

I'll go now to Ms. Yan. Thank you again, and your brother is a great person. It's good to see you here.

Going to your words, on the third page you were talking about further investment and the need for capital. For the current programs that are available now, are you saying it's insufficient, or are you saying it's there but universities can't access it to do the research?

Ms. Ning Yan: I think that's a good question. There are a number of programs in place, such as IFIT. I think that program really supported industry quite well, but that program is primarily for the companies to apply for and use to conduct their transformation projects. Universities can be included but cannot take a lead in those projects.

In a way, it's what your point is. Hopefully, there will be more grants available for universities to access and more work done towards these earlier-stage projects. The projects in the IFIT programs tend to be more at the late stage and ready to implement. What I'm saying is we need more support for those early-stage projects that may not have been developed fully and are not ready to be scaled up to a large scale yet, but still have a place to go and can be further incubated and tested out.

Mr. Jamie Schmale: Right. Usually banks, I guess, obviously with universities...but even companies have trouble accessing dollars, because if the technology isn't proven or it's too early in the stage, nobody will jump in and provide that boost up.

Ms. Ning Yan: Absolutely, and I think it's particularly difficult for the forest sector, because a lot of these manufacturing technologies need to go through a scale-up, and before that a lot of risk has to be taken out before they can move up. Some of the projects ongoing in Canada right now, for example, led by FPInnovations, have done really well, but a tremendous amount of work by a team of researchers went into that before they could move to this stage.

If you approach forest product companies and ask if they can put some cash forward to allow these early-stage, high-risk ideas to move forward a bit, you'll find it's difficult, given their current economic situation. They would like to have something ready so they can adopt it. They want to know the exact cost structure and the revenue, how many dollars it's going to make.

I think that's what I'm referring to as the gaps in this kind of innovation value chain, as I would call it. We have a lot of ideas, and there may be early stage, small scale, or maybe larger scale at universities, yet they don't have a proper way of moving out of the university labs to the stage where there can be uptake.

Mr. Jamie Schmale: Maybe tweaking the applicant's accessibility might be a better route to go or a route to look at.

The Chair: I'm going to have to stop you there, unfortunately.

Mr. Jamie Schmale: While you're on a roll....

The Chair: Go ahead, Mr. Cannings.

Mr. Richard Cannings (South Okanagan—West Kootenay, NDP): Thank you.

Thank you all for coming before us today.

I'm going to start with Mr. Kariya. I'm interested in the carbon credit story. I used to be on the Nature Conservancy of Canada board, and we purchased a large piece of land at Darkwoods, just south of where Mr. Murray is, I guess, down between Nelson and Creston. We monetized some of that purchase by going into carbon credits and selling them to the Province of British Columbia and other markets.

The area that your organization covers obviously includes the Great Bear Rainforest. I'm wondering, first of all, if that is where those carbon credits are coming from, or are they coming from a broader area on the coast?

● (1650)

Mr. Paul Kariya: It's good to see you again, Mr. Cannings.

Mr. Richard Cannings: Yes.

Mr. Paul Kariya: It certainly is from within the Great Bear Rainforest footprint, but it's not restricted to that area. The agreement that we have under our reconciliation protocol with British Columbia also includes Haida Gwaii and goes further into other nations outside the footprint of the Great Bear. As other first nations have learned about our agreement, the airshed-based agreements that we've signed, they've also asked us to help market their credits, so the short answer is no. We operate beyond the boundaries of the Great Bear as well.

Mr. Richard Cannings: Perhaps you could quickly give me an assessment of where that carbon credit market is these days and where it's headed. Is this something that other parts of Canada can look to, not just with regard to first nations? I know there are a lot of big private holdings of forests on Vancouver Island, for instance. Are other forest companies looking at carbon credits in Canada to help them at this time?

Mr. Paul Kariya: It's a complicated picture. I'd say that industry and provinces and jurisdictions are all assessing where they sit with their GHGs, what the outlook is, where government regulation is going to go, and doing things like stockpiling offsets at a cheap cost to be used further. Alberta is a really good example of some upset in the marketplace and how they're handling it.

Let me say this in terms of a recommendation that I've been making to federal ministers: Canada, with its footprint, should probably be looking at—this is the federal government now—its carbon footprint and going some distance in terms of carbon neutrality. Then it could offset that footprint by working with first nations and others. I would look at first nations province by province and at collaborating with the provinces under the pan-Canadian climate framework, but where there is opportunity, Canada should be purchasing carbon credits from first nations to offset the federal government's footprint.

We've made the pitch, as it's going to take some time to get this kind of policy up and running. You could buy from us and bank them and have a credit. It certainly would help us in perfecting what we do. It helps our stewardship work. A good chunk of this money, not all of it, goes into stewardship activity on the landscape and the seascape. We could cut those kinds of agreements now with Canada.

Mr. Richard Cannings: Thank you.

I'd like to move to Mr. Murray and talk about some other local situations.

You talked about how you're using largely waste in your pellets. I know that at least for a while there was a big problem south of you in Nakusp with waste from a cedar pole plant. Are there some restrictions about the type of waste you can use, or is that really not a problem? Is it more about where it is located in relation to your plants?

Mr. Gordon Murray: Location is certainly an important issue, because wood pellets are a commodity product and a low-value product. We can't pay a lot for the feedstock, so we can't transport it very far.

We can certainly incorporate cedar into the feedstock. You probably know that cedar bark is a bit challenging to handle because it's stringy and it's hard to process through equipment. Generally speaking, we prefer to use the white wood or wood fibre, as opposed to the bark. You can use a limited amount of bark in the pellets, but the more bark you use, the more ash content you get, and the customers like to keep the ash minimized.

Generally what we'll do is take the bark in and use it for the process heat. We'll run the bark into a boiler and then use the heat from the boiler to run the dryer, and then the dryer will dry the pellet fibre. We'll use the wood fibre to make the pellets and the bark to create the energy. We can use anything.

● (1655)

Mr. Richard Cannings: Right. Okay.

You state that using wood pellets decreases greenhouse gas emissions as compared with coal. I am wondering how that calculation is made. Is that just the whole process calculation, or does it have to include the forestry end of things?

Mr. Gordon Murray: A biogenic carbon, carbon that's grown on the surface of the earth, is recycled through photosynthesis. When it's combusted, it turns into carbon dioxide, which is reuptaken through plants' photosynthesis. It's circular.

Without taking the processing into account, terrestrial biomass—as opposed to coal, which takes millions of years to sequester—is carbon neutral, except you have to take into account that you're using some fossil fuels during the processing. That's when you're driving your skidder out to drag the trees in or you're transporting your pellets to market. We track the greenhouse gas balance throughout the whole supply chain, from the stump through to the power plants. By our calculations, which are audited by third parties and have to be reported to governments, we're about 90% better than coal would be, on average.

Mr. Richard Cannings: Thanks.

The Chair: Ms. Ng, we'll go over to you.

Ms. Mary Ng (Markham—Thornhill, Lib.): Thank you so very much for all of your testimonies.

I am going to start with Mr. Kariya.

We had heard here at committee about an issue around secondary producers. While it is growing and there are certainly opportunities for development and continuous marketplace growth for the secondary market, and you've talked about that, there is some issue around connecting to the primary sector and having a healthy primary sector. You've talked a bit about the work that you and your nations are doing around the preservation and regeneration of the forest. Can you talk to us a bit more about that on the supply side and what some of those strategies are for a healthy supply?

Mr. Paul Kariya: As we all know, the natural resources economy is what British Columbia has been built on. It was furs, fish, trees, minerals, and so forth.

On the forest side, tenuring and how tenures have been issued have been the dominant feature on the landscape, and remain so. Through the negotiations in the Great Bear, it was first nations who led the charge to say we're concerned about sustainability. We're not anti-forestry; we are anti-forestry at the level of cut that's going on, and the cut in some of the sacred areas and other places that are important to other species that rely upon the forest. As a result, there has been a very extensive land use process, working with government and industry. Industry might have been unwilling to do this in the beginning, but to be fair to them today, they're at the table and there's a proper process.

What it meant very much was that the annual allowable cut was reduced. That has an impact on jobs and productivity as we would measure it economically, but on the benefit side, I think it has helped to restore certain watersheds. It has brought back the opportunity for other activities on the landscape. It certainly has permitted first nations to exercise more of the gathering of their medicines and so on. I think we've come to a place where we're probably not perfect yet, and further planning and further dialogue need to occur on where certain areas need to be protected, where we go with sustainability of certain animal species, and that sort of thing. All of that's data driven, and our members are certainly collecting that data.

A great uncertainty is in terms of the changing climate. Greater uncertainty is where the terrestrial impacts the oceans. As the warming oceans become less productive in some areas and more productive in others, there is a linkage; they're not isolated from the forest and so on. I and our members think we should approach this in a precautionary way, and we have stewardship directors in each of the communities.

I think the protection of the environment is first. Second comes any kind of infrastructure development, and third comes economic development. Gosh, these communities are starved for jobs and need an economy, but I think they'd put the primacy of the environment first. They have their priorities correct on that front.

● (1700)

Ms. Mary Ng: Thank you for that. It links a little bit to the Wood Pellet Association, hearing some of the opportunity to be able to convert from coal to wood pellets, and that conversion is sustainable, it's helping our environment, and at the same time it's creating opportunities in economic development.

Do you see an ability for that kind of connection with aboriginal communities, and therefore greater collaboration? This is to the Wood Pellet Association, please.

Mr. Gordon Murray: Absolutely. We've had some real successes working with aboriginal communities. In fact, one of the largest pellet plants in British Columbia is located in Houston and is a three-way joint venture among Canfor, Pinnacle—which is the largest pellet producer—and the Moricetown Band. Pacific BioEnergy also has a very large plant in the Prince George area that's partnered with Sumitomo from Japan and the Nazko First Nation that is west of Quesnel. There are a number of forest licences that we're accessing fibre from that are first nations-owned. There's very close collaboration between our industry and first nations for sure.

Ms. Mary Ng: If you were to give advice to this committee as we're studying secondary products from forestry, what can the federal government do to assist in a greater acceleration of this sector that will be beneficial and respectful of government-to-government relations, to the first nations communities, and to industry, while developing this sector and doing it in a sustainable way? What can we do as a government?

I know you talked about the helpfulness of the NRCan programs, but what else could we do?

Mr. Gordon Murray: Well, we've watched the pan-Canadian climate framework. In there is a lot of stuff that's very exciting to us, such as decarbonizing remote communities. We think using wood pellets is going to be a good answer there.

It was just in September that Minister Carr and the Canadian Council of Forest Ministers came out with “A Forest Bioeconomy Framework for Canada”. I guess we look at those measures as works in progress. The intentions are there and we like the direction, but we haven't necessarily seen the regulatory support behind it. We're watching Canada's new clean fuel standard that is still under development, which we think will be beneficial. We like what Canada is doing with pricing carbon in the provinces, with the export support.

Quite frankly, we're pretty happy with the direction that government is going. If anything, I guess we'd just say to go faster—

● (1705)

The Chair: Which is what we're going to have to do here, unfortunately. I'm sorry about that.

Go ahead, Mr. Schmale, for five minutes.

I understand, Ms. Yan, that you have to leave to catch a flight. Do you?

Ms. Ning Yan: Yes.

The Chair: Okay If you want to take the opportunity to extricate yourself from here right now, it would probably be a good time.

Thank you very much for joining us today. We very much appreciate your contribution.

Ms. Ning Yan: Sure. Thank you.

Mr. Jamie Schmale: Thank you, Chair. Thank you, gentlemen.

Mr. Murray, with regard to your comment on government going faster, I think everyone yells that from time to time. I think “Get out of the way” is the other one.

I was going to ask Ms. Yan this question, but I know she is just leaving, so I'll leave it up to you two. I don't know who would be better to answer, so feel free. It was more to her comments, but both of you alluded to getting people into the lumber industry, and I expand this to the skilled trades as well: how can we help to get you the workforce that you and your industry need?

Mr. Kariya, do you want to start?

Mr. Paul Kariya: Sure.

We have a strategy. Our communities are located in very remote areas. Half of the communities are still on diesel and half of the communities don't have road access. We've done modelling of what jobs we need between now and the year 2038. A good chunk of those jobs are going to come from the fish sector. These are fishing people, and we have to begin there. Secondarily, forestry can play a role, both traditional forestry and value-added.

However, both fisheries and forestry are not areas with potential for high growth. We know that public administration—band administration, if you will—is going to be a big part of this, and we need to train people that way.

One very important area in that public service is stewardship. Stewardship is a broad word; however, taking over responsibility on a governmental basis for the Great Bear Rainforest requires that we have people who are enforcers and have delegated authority, as well as compliance officers to gather information and collect baseline data on what is happening with returning salmon or not, what is happening in the forest, and collecting information on animals. It's an indirect response to being stewards and keepers of the land. People are going to need to be trained, and I think our people recognize that.

We've initiated a curriculum with Vancouver Island University on stewardship. We've had three years of delivering it. These are university credit courses. We need more of that activity. We need help in capacity development. It's not to focus just on one sector; we're trying hard to be a diverse economy and be diversified on the landscape, lighter on the landscape, to provide the wherewithal for human well-being.

The government's help in terms of the relationship is very much appreciated. We applaud the Liberal government for starting the relationship. We need to continue with that. We need funding and we need government-to-government planning across ministries, not just one or two.

I'm very excited about what we're doing in fisheries, what we're starting to do in oceans, and what we need to do in government relations and capacity training, and so forth.

Mr. Jamie Schmale: Mr. Murray, would you comment?

Mr. Gordon Murray: Our greatest need has been in the area of skilled trades, such as millwrights, electricians, and certified equipment operators. Fortunately for us, we locate a lot of our plants in small communities. The employment in the pulp and paper sector and the sawmill sector has declined in recent years, so we have not really had much trouble finding the kind of skilled people we need.

There have been initiatives at the provincial level to improve local employment. Quite frankly, it just hasn't been an issue for us.

● (1710)

Mr. Jamie Schmale: Okay. That's all I have. I don't know if Ted or Shannon has anything.

The Chair: Mr. Arseneault, you are going to split your five-minute segment, I believe.

[*Translation*]

Mr. René Arseneault (Madawaska—Restigouche, Lib.): Thank you, Mr. Chair.

I'd just like to take a quick second to say something. I'm not a standing member of the committee. I'm filling in for my friend Marc Serré, whose father passed away. I'm sure the committee joins me in sending the entire Serré family our condolences.

My first question is for Mr. Murray.

I represent the Madawaska—Restigouche riding, in New Brunswick. The forestry sector is the economic heart and lungs of my entire riding. When you talk about wood pellets and other forest products, I hear you loud and clear.

We hear a lot about wood pellets for domestic use, among other things. Efforts are being made to repurpose coal power plants to use wood pellets for heating. I'd just like to let you know that, in New Brunswick, the government is running a pilot project. A hospital is being heated using strictly wood pellets, in order to compare the institution's costs and savings. It's at the Grand Falls General Hospital, in my colleague T.J. Harvey's riding.

I'm going to play the devil's advocate for a minute. An inventor in my riding has a technology that can dry biomass without an external heat source, in other words, without diesel or wood chips to remove moisture; I saw it in action. The result is significant. The dried biomass powder generates so many kilojoules that pulp and paper boilers wouldn't be able to keep up. The biomass-drying process uses friction, but they are electric motors. No external components are necessary, neither motor nor diesel. Nothing else is involved.

A few months ago, European scientists talked to the committee about biomass torrefaction, which creates an even more efficient powder that perfectly meets the needs of most European plants. One of the scientists was from the Netherlands, if my memory serves me correctly.

I'm playing the devil's advocate here. Although I love wood pellets, aren't they a bit outdated? Can't we do better with our biomass?

[*English*]

Mr. Gordon Murray: The first thing I have to say is that New Brunswick has more pellet boilers.... I think at last count there were 30 boilers like the one at the hospital that you mentioned. They are in hospitals, schools, churches, and government office buildings. New Brunswick has been a real leader in that way.

We're holding a forum in Fredericton at the Crowne Plaza Lord Beaverbrook Hotel on December 12, and at last count I think we have five government ministers coming. That's been a bright spot for our industry.

I have to plead ignorance on this friction drying that you're talking about. This is the first I've heard of it.

On the torrefaction, you're drying fibre in a low-oxygen environment and creating a product that has a little higher energy density than wood pellets. It's essentially a pellet, but it's a more refined pellet. One of the OPG plants in Ontario is using a product like advanced wood pellets right now. The technologies are out there and available, but so far the European power utilities have just not been willing to use the torrefied product. We've been trying since about 2010 to get market penetration of torrefied pellets, and the minute a market emerges, we'll be there to make it. You can essentially use all the existing equipment in the pellet plant and just add one more process to make that torrefied product.

● (1715)

The Chair: I'm going to have to stop you there.

Mr. René Arseneault: Thank you, Mr. Murray.

The Chair: We're out of time, Mr. Hébert. My apologies.

Gentlemen, thank you very much, both of you, for joining us today. As you can see, we never have enough time for these discussions. We're restricted by the rules that are set and that govern how long we have for presentations, but we're very grateful to you for making the effort to be here, and your contributions will be very valuable in what we're doing.

On behalf of the committee, thank you.

Mr. Gordon Murray: Thank you for your interest.

Mr. Paul Kariya: Thank you very much.

The Chair: We'll suspend for two minutes, and then we'll get into committee business.

[*Proceedings continue in camera*]