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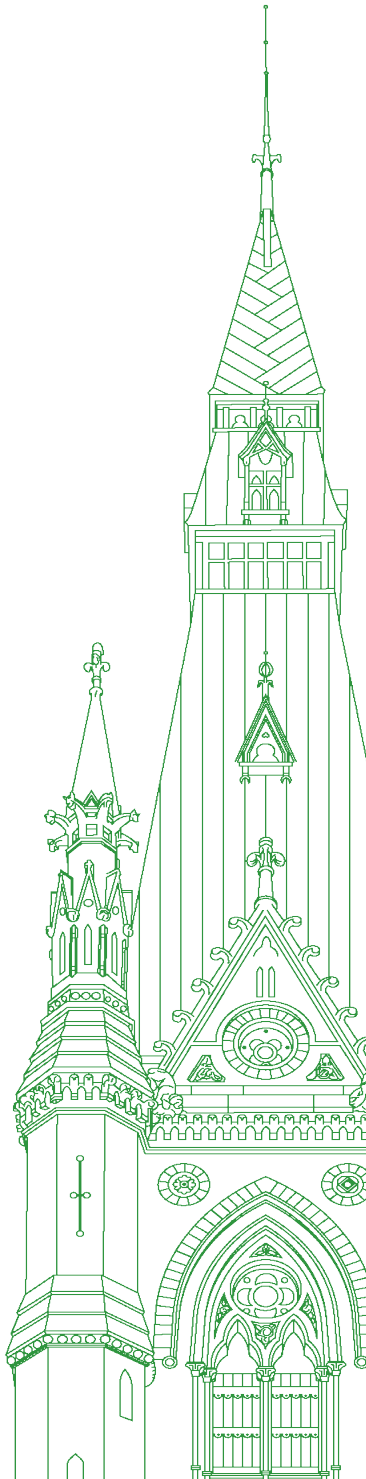

Chair: Mr. James Maloney

Standing Committee on Natural Resources

Friday, May 7, 2021

● (1310)

[*English*]

The Chair (Mr. James Maloney (Etobicoke—Lakeshore, Lib.)): I call this meeting to order.

Welcome, everybody, to our 25th meeting of the Standing Committee on Natural Resources. Again, thank you, everybody, for the patience. Technical problems sometimes occur. Today was an example of that.

We're going to jump right in. I should let everybody know that I was going to stop a few minutes before three, because we have one or two very quick housekeeping items we have to deal with before the meeting ends to prepare for our meeting on Monday. However, in the absence of any strenuous objections and because we're starting a bit late, I might just go a little bit beyond three o'clock to do that.

Jumping in then, I want to welcome our panels of witnesses. We have six witness groups today, which is fantastic. The process, for those of you who may not be familiar with it, is that each set of witnesses will get up to five minutes to make opening remarks. Once all of the opening remarks have been completed, we'll open the floor to questions from members.

You are welcome to and encouraged to speak in either official language. You have translation services available to you. It requires a little bit of patience to do meetings virtually. Try not to speak over others when they are talking. There are a lot of people in this meeting. I will do my very best to get names right today, because there seemed to be a lot of identity appropriation going on before the start of the meeting. I will try to work around that as best I can and not call on anybody incorrectly.

I will start then at the top of our agenda. Appearing today as an individual, I would like to welcome Dr. Amit Kumar.

Professor, the floor is yours.

Dr. Amit Kumar (Professor and Natural Sciences and Engineering Research Council of Canada Industrial Research Chair in Energy and Environmental Systems Engineering, University of Alberta, As an Individual): Good afternoon, members of Parliament and everybody in the audience. It is a pleasure to be here, and thank you for giving me the opportunity to share my thoughts on the challenges and opportunities for the biofuel industry in Canada and the life-cycle greenhouse gas—that is GHG—emissions of biofuels.

My name is Amit Kumar. I lead a large research program in energy and environmental systems engineering at the University of Alberta, and I am an energy engineer by training. My comments today will be focused on the use of lignocellulosic biomass for the production of fuels and chemicals and its potential to significantly reduce GHG emissions in Canada. I will also focus my remarks on the potential to integrate our energy industry with the forest industry, the agriculture industry and municipalities. I will also also talk about how this integration provides an opportunity to make significant contributions to Canada's net-zero emission target by 2050.

My research group's work includes assessing the cost and environmental footprints of energy pathways, including bioenergy and biofuel pathways, with a focus on GHG emissions in a product's life cycle, that is the entire chain from biomass production, processing, transportation and conversion to the end use. We also assess optimal locations for biomass and waste conversion and processing facilities, taking into account not only biomass availability but also the available infrastructure and municipal guidelines. We also work in the area of thermo-chemical conversion of biomass—gasification and pyrolysis—to produce liquid fuels.

To look at biomass, biomass feedstocks are generally categorized based on their source, for instance, agricultural biomass, forest biomass and waste biomass. Agricultural biomass includes grains—wheat, barley and canola—straw, corn stover and energy crops. Forest biomass includes whole tree biomass, logging residues, mill residues, trees killed by insects like the mountain pine beetle and hybrid species, for instance, willow and hybrid poplar. Waste biomass includes animal waste like manure and municipal solid waste. All of these are available in large quantities in Canada.

Today, most commercial-scale biofuel production uses grains. The production of bioenergy for heat and power uses mill residues, which are mostly spoken for. In my view, there is a significant opportunity to use lignocellulosic biomass—that is straw, forest biomass and municipal solid waste. In Canada, the potential availability of biomass is large from both agricultural and forest biomass. Using them to produce fuels and chemicals is a key opportunity.

There are several lignocellulosic biomass conversion pathways for the production of fuels and chemicals and these are at various stages of research, development, demonstration and commercialization. These pathways are broadly in the area of thermal conversion, thermo-chemical conversion and biological conversion, and include, for example, combustion, gasification, pyrolysis, hydrolysis and saccharification, and anaerobic digestion to produce biogas.

My research group has evaluated several biomass pathways for the production of fuels and chemicals in terms of their life-cycle GHG emissions and costs over several years. These pathways consider the production of a range of fuels and chemicals such as renewable diesel, bioethanol, biohydrogen, bio-oil, biochar, biopower and others.

The life-cycle GHG emissions of bioenergy and biofuels vary with the jurisdiction where they are produced, as the inputs in each jurisdiction have different GHG footprints. In addition, the potential GHG mitigation benefits from bioenergy, biofuels or bioproducts depend on the application and their intended use.

For example, in Alberta, replacing fossil diesel with renewable diesel helps reduce the GHG footprint by 50% to 60% per unit of energy. Replacing fossil fuel-based power, for example, can mitigate GHGs by 80% to 90% compared with fossil fuels. The location of the plant is a critical aspect of the biomass life cycle.

Some key challenges the industry faces are the security of long-term biomass supply, scaling up, a uniform regulatory framework that incentivizes the development of bioenergy and biofuel, and the export demand for raw biomass feedstock from outside.

● (1315)

The scale of processing is critical as the cost to produce biomass-based fuels and chemicals—that is, dollar per litre of ethanol, dollar per tonne of renewable chemicals and dollar per megajoule of renewable gas—decreases as the plant size increases. There is a size for field or forest-based biomass at which the cost of production is lowest. This size we refer to as the economic optimum size. Most of our facilities are below optimum because of the challenges I mentioned earlier.

The Chair: Dr. Kumar, I'm going to have to ask you to wrap up very quickly please.

Dr. Amit Kumar: Yes.

Canada could become a key player in the biomass-based economy because we have a large potential for biomass and well-developed forest, agriculture and energy industries. Existing infrastructure and expertise can be used to develop the bioeconomy. These are opportunities to integrate the biomass feedstock with the energy industry.

In addition to forest and biomass, I would say municipal solid waste has big potential in Canada.

In summary, Canada has both large biomass feedstock potential and the expertise to be a leader in biomass use. This would help create jobs in the forest, agriculture and energy industries and contribute to Canada's net-zero emission goal.

Thank you very much. I look forward to the discussion.

The Chair: Thanks, Dr. Kumar.

I would ask the witnesses to try to stay on the five-minute timeline. We have a lot of presentations today, so time is precious.

Next up we have Canada Clean Fuels Inc. Either Mr. Freeman or Mr. Angelucci is going to provide opening remarks.

Mr. Giovanni Angelucci (Vice-President, Business Development, Canada Clean Fuels Inc.): Good afternoon, everyone. Thank you, Mr. Chair and all the members of this committee, for the opportunity to discuss with you today the cost-effective opportunity to reduce pollution through the use of biodiesel.

For those not as familiar with it, biodiesel is a type of fuel processed from biological matter and other non-fossil fuel feedstocks and blended with diesel for use in diesel engines. One litre of pure 100% biodiesel, or B100, has a carbon intensity that is roughly 92% lower than one litre of conventional diesel fuel and also reduces other pollutants and criteria air contaminants by up to 100% versus regular diesel.

As a climate change solution, biodiesel is broadly supported by both environmental organizations and farmers' organizations. Biodiesel blends, ranging from B5 to B20, which means there is 5% to 20% biodiesel, are used by municipalities like Toronto, York Region, Waterloo, Guelph, Kingston, Brampton, Mississauga, as well as corporate fleets like Loblaws, Labatt and Robert Transport. The State of Minnesota, the entire state, mandates B20 biodiesel in all diesel sold between May and October. In these jurisdictions, blends are adjusted in extreme cold temperatures to account for a higher cloud point in biodiesel.

In instances that are more controlled for temperature, like shipping and underground mining, adjusting the blends is generally less necessary. For example, we are currently supplying a pilot project in the Great Lakes that is running B100 pure biodiesel in a major shipping fleet. We also supply mines in northern Ontario with high-blend biofuels.

If this is true, why aren't more companies and municipalities using it?

What stands in the way of a rapid scale-up in biodiesel is the price gap between biodiesel and regular diesel. Currently, that gap is roughly 15 cents per litre of B20 or about 75 cents per each pure litre of B100. Eliminating this delta would expand biodiesel from a relatively small segment of our economy willing to pay the premium for the social licence of using a cleaner fuel, to a broader market of those willing to adopt a cleaner fuel because it doesn't cost them more. It would also encourage those using a low blend to use a higher blend.

As is reasonably expected, we can't expect companies to pay more for cleaner fuel when their competitors have the option not to. That green premium can only be closed in two ways: either accurately add the social costs of conventional fuels to the price of conventional fuels, or help bring down the cost of the alternatives.

While the clean fuel standard may reduce the price gap over time, third party modelling shows it is expected to take about five years for the CFS to have a meaningful impact on the difference. Similarly, the carbon price currently has an impact, but the price is too low on its own to prompt the market shift we need. In addition, many sectors are granted exemptions to the carbon price and, therefore, it doesn't apply to their cost of conventional fuels anyway. Mining and shipping are two such sectors.

We recommend the federal government put in place a blender's credit to eliminate the price gap between diesel and biodiesel. The credit should be limited to those using a high blend of fuel to avoid funding those who are already using a low blend or those who are complying or need to comply with federal or provincial mandates. This type of credit already exists in the U.S. and is the reason that their average blend is higher than in Canada.

Based on calculations by Golder Associates, the average cost to the government will be approximately $50 per tonne, based on the average price for biodiesel over the past few years. As the price fluctuates and the gap narrows, that price per tonne or blender's credit could also reduce.

There are few, if any, initiatives in this part of the transportation sector that can achieve reductions at this price, and other options would also force us into path dependency. There are significant co-benefits with biodiesel, such as the advantages of deriving much of that feedstock from domestic sources closer to where the fuel is being used. Biodiesel would be cheaper and utilizes existing infrastructure so that money spent here doesn't lock us into a technology that may limit us in the future.

I would like to thank you all for giving us this opportunity. I look forward to any questions you may have.

● (1320)

The Chair: Thank you very much. You're ahead of time. I appreciate it.

Next up we have the Canadian Fuels Association, Mr. Bob Larocque and David Schick.

Mr. Bob Larocque (President and Chief Executive Officer, Canadian Fuels Association): Good afternoon, Mr. Chair and members of the committee. Thank you for the opportunity to participate in your study of the low-carbon and renewable fuels industry.

I would like to begin by acknowledging the land on which I am on today is the traditional unceded territory of the Algonquin Anishinabe people.

My name is Bob Larocque. I'm the president and CEO of the Canadian Fuels Association. Also joining me today is Dave Schick, our vice-president of western Canada.

Canadian Fuels Association members provide 95% of the gasoline, diesel, marine and aviation fuels that are used across our country every day. Our members also produce more than 25% of the current biofuels made in Canada. We represent 117,000 workers who are on the job 24 hours a day, seven days a week, at Canada's 16 refineries, more than 90 fuel terminals and 12,000 retail sites.

It would be impossible for me to be here today and not speak of the pandemic. It has taxed our health care system, severely impacting Canadians, especially our most vulnerable. We're very grateful to those who have put their own lives at risk, and, as an essential industry, proud of our role in supporting the movement of essential workers, protective equipment and vaccines in the battle against COVID-19. Canada can count on our sector as we look forward to the pandemic recovery.

Last fall, we released our vision for the future, “Driving to 2050”, in which we outline how our industry can make a foundational contribution to Canada's low-carbon future. We believe there are significant opportunities to advance the production and use of low-carbon liquid fuels in Canada and to accelerate large-scale GHG reductions, starting today, using proven technologies.

Governments have a key role to play in working with industry to maximize these reductions. We have the following recommendations.

One, align and integrate federal and provincial policies to accelerate the production and use of low-carbon fuels in Canada.

Currently, there is an opportunity to collaborate with provincial governments to align, enhance and build on strategies or frameworks for low-carbon fuel, hydrogen and electrification. When it comes to regulations, tax incentives and funding programs to drive change with a common goal of reducing emissions in both the short and long term, it is important they all share common structures such as quantification methodologies, targets and complementary credit generation and funding criteria.

Two, all programs and policies should support investments in production and infrastructure to ensure low-carbon fuels are readily available to Canadian consumers.

Canada's existing refineries, fuel terminals and retail sites are strategic assets that can be leveraged and adapted to support expanded use of biofuels across the country. In order to meet our climate goals in a timely and efficient way and to maintain a reliable and affordable supply of low-carbon fuel, all facets of the fuel supply chain must be considered, from production to terminal to retail sites. Support for many of these smaller businesses will ensure the broad availability of these low-carbon products as they will need facility upgrades to provide these products to Canadians.

Three, ensure North American alignment of biofuel policies.

The North American fuel market is integrated and Canada-U.S. biofuel policies must operate in unison. As the Canadian demand for biofuels increases, we have an opportunity to produce and use Canadian-made biofuels. Incentive programs, feedstock eligibility and trading flexibility are all examples of measures that, if significantly different, will influence the flow of low-carbon fuels between Canada and the United States.

Low-carbon liquid fuels could contribute more than a 50% emissions reduction in the transportation sector by 2050. The only way to get to net zero is to consider multiple pathways, such as ethanol, bio-based diesel, hydrogen and other advanced biofuels, as well as electrification. This will require significant investments of more than $20 billion to $30 billion and a strong supply chain for feedstock, production, refining, blending and retail access. Let's all collaborate to ensure that these investments occur in Canada, that the fuels are produced in Canada and that consumers have access to these low-carbon fuels.

Our members are already working towards making these goals a reality. Recently a new $850-million investment was announced by Shell, Suncor and other partners to produce next-generation biofuel from wood waste and other residuals in Varennes, Quebec. Tidewater Midstream, in British Columbia, has also announced an investment of $250 million to produce renewable diesel that will be 80% to 90% less carbon intensive than conventional fuels.

● (1325)

These investments are only the beginning of a made-in-Canada solution that would not only help us achieve our net-zero goal but also create significant employment opportunities across the country.

Tens of thousands of workers will be called upon during the construction phases of these new biofuel facilities and thousands of jobs will be created to operate these new facilities in the future. These are exciting times and we see remarkable changes ahead for Canada's transportation system.

Thank you again for the opportunity to speak today. I look forward to your questions.

[*Translation*]

Thank you for your attention.

[*English*]

The Chair: Thanks, Mr. Larocque.

Next we have from Covenant Energy, Josh Gustafson.

Mr. Josh Gustafson (President and Chief Executive Officer, Covenant Energy Ltd.): Good afternoon, everyone. Thank you for the invitation to appear today to talk about Canada's low-carbon and renewable fuels industry.

As president and CEO of Covenant Energy, I'm excited to be here to share our experience and provide some insight to the committee about the opportunities to ensure that Canada remains a world leader in producing low-carbon and renewable fuels.

Covenant Energy was founded in 2019 with a mission to become a Canadian leader in the low-carbon fuel industry. We want to achieve this by producing clean renewable diesel and sustainable aviation fuel. To do this, Covenant Energy is developing one of the first stand-alone hydrogenation-derived renewable diesel facilities in Canada. Our plant will be located in southern Saskatchewan and use Canadian-farmed and processed canola as the primary feedstock to create a top-quality biofuel. We estimate that our facility will produce about 325 million litres of renewable diesel annually and we will have the capacity to produce Arctic-grade renewable diesel and sustainable aviation fuel.

We know that there's a great interest in both arctic-grade renewable diesel and sustainable aviation fuel as there are continued needs from the transportation sector and for remote power generation. For Canada, having a reliable domestic supply of arctic-grade renewable diesel is particularly important to decarbonizing our northern communities. Many of our northern and remote communities will continue to rely on diesel fuel for many more years. Covenant Energy would like to supply a drop-in alternative that will instantly decarbonize existing equipment. We also believe that sustainable aviation fuel is the way of the future for the aviation industry.

We expect to hire 50 employees directly and create 200 to 300 jobs for the design and build of the project. There will also be extensive indirect employment in the agricultural, shipping and processing industries that will lead to economic benefits for southern Saskatchewan.

Our commitment to renewable fuel production has made it possible for other companies along the supply chain to grow in southern Saskatchewan. Recently, there has been news of three crush facilities being expanded or opening in Saskatchewan with potentially more to come. This is the result of projects like ours that will help provide demand for crushing capacity.

Our facility will also be using renewable hydrogen created in the process to replace about 90% of natural gas consumption. We're also exploring how to incorporate cutting-edge carbon capture, utilization and storage technology. Currently, Covenant Energy plans to be in operation by the end of 2023, which aligns with the implementation of the clean fuel regulations.

I am part of a fifth-generation Saskatchewan canola-farming family with over 13,000 acres of production. Supporting renewable fuel production in Canada is something that should be done and will be beneficial to our agricultural producers and value-adding processors, and will create local jobs in the green economy. Currently, the majority of canola that is grown in Canada gets exported and transformed into other products, including biofuels. Our processing plant will give us an opportunity to close the supply chain loop and provide a valuable component to the emerging low-emissions fuels economy in the Prairies.

The current design of the plant also gives us the flexibility to double our production capacity in the future. By creating an increased local demand for canola, we will help protect our canola industry from the fluctuations felt as a result of trade disputes.

Our project's success will depend on the successful implementation of the government's clean fuel regulations. While we expect domestic demand to take up most of our supply, our proposed location is situated on a class I railway, giving the flexibility to access feedstock from across Canada and the U.S. and providing the potential to sell a finished product into the U.S. market, helping to export Canadian clean fuels to our neighbours who are also moving quickly on building similar facilities.

Just two weeks ago there was an announcement for a renewable diesel plant in Hastings, Nebraska, that is expected to produce 80 million gallons of renewable diesel annually.

We want to be part of the project to help lower emissions and increase competitiveness for Canadian clean fuels. Covenant Energy strongly believes that it can help meet both current and future demands for renewable diesel in Canada. We are excited about the opportunities that our processing plant will bring to the Prairies and the rest of Canada.

Thank you again for the opportunity to speak here today. I'm happy to answer any questions you may have.

● (1330)

The Chair: Thanks very much.

Next up, from Dow Canada, we have Scott Thurlow.

Mr. W. Scott Thurlow (Senior Advisor, Government Affairs, Dow Canada): Good afternoon. Thank you very much for having me here today, Mr. Chair.

My name is Scott Thurlow. I am a senior adviser for government affairs for Dow Canada.

For more than 75 years Dow has been proudly innovating in Canada. We develop basic chemicals and polymers used to make a broad range of innovative and technology-based products and solutions in the packaging, industrial, infrastructure and consumer care industries. We are one of the largest resin producers in the world.

We are here today to talk about how a regulatory initiative can have multiple goals and simultaneously solve several different environmental problems. We believe that the recently proposed clean fuel regulations can do just that. It is our view that another problem that we could be addressing through the CFR is plastic waste, and this is an issue of paramount importance for our company.

How a product's life cycle is defined is very complex. It is true that fuel derived from recovered plastic will have a modest GHG improvement when contrasted to fuels derived without any recovered plastic content, but that GHG reduction is modest when compared to the overall social benefit of having reduced waste in landfills and preventing fugitive plastic waste from entering the environment.

The CFR should allow for compliance credits to be generated for environmental benefits that are not as clearly tied to GHG reduction but have other demonstrated environmental benefits. Rewarding the potential for products from the pyrolysis of plastic waste, such as fuel oil or diesel, to meet the standard for compliance category 2 low-carbon fuels can do just that.

At Dow we have taken many steps to address the plastic waste problem. One such example is our leadership in the development and implementation of the “Hefty Energy Bag” program in London, Ontario, in October 2019. The purpose of this program is to collect hard-to-recycle plastics at residential curbside and to divert plastic from landfills. The process could not be any easier for everyday consumers who want to do their part to create a circular economy.

It offers more than 13,000 households in London a distinguishable orange bag to discard their clean and dry plastics that are not normally accepted in the recycling bin. These include plastic wrap, flexible plastic reusable pouches, foam takeout containers, plastic utensils and snack food bags. How does it work? Once the hard-to-recycle plastics are collected, our project partners allow for the use of the existing waste management infrastructure to seamlessly collect and repurpose these plastics into valuable resources. Around the world we have used plastic waste to build roads and fuel municipal buses.

That said, this committee needs to know that investments in advanced recycling facilities are difficult to secure. Chemical depolymerization is energy-intensive, and that makes it very difficult for the recovered product to compete with virgin resin from a financial perspective. That is where the compliance pathway for the clean fuels regulations can come in. The opportunity to generate CFR credits would create an additional incentive to create the supply in Canada. In turn, this would enable a supply chain for hard-to-recycle plastics and enable an earlier transition to a circular economy for hard-to-recycle plastics.

With that having been said, I want to take a moment to discuss the Prime Minister's pledge to ban certain single-use plastics by the end of this year. A ban will not deal with the fact that our waste management processes need improvement. A ban should be the last step that a government takes as it works to deal with an issue, not the first.

The minister has proposed regulations under CEPA to give life to this ban. We do not believe CEPA is the right tool for regulating plastic. We believe that this is an issue that is fundamentally an issue of waste management, a provincial responsibility. We believe that there is a federal role through the CCME, but we do not support banning certain plastics. We certainly don't agree with making a legal determination that plastic manufactured items are toxic substances. The issue with plastic waste is not the plastic itself but the behaviour that allows it to leak into the environment. As a criminal law statute, CEPA is meant to punish actions, not objects.

In conclusion, no one believes that plastic belongs in the natural environment. We support actions to protect the world's oceans. We think that the clean fuel regulations can help achieve that goal.

I would welcome the opportunity to answer your questions on any of these vitally important issues.

● (1335)

The Chair: Thank you very much.

Last is the Quebec Forestry Industry Council, Jean-François Samray and Louis Germain.

Mr. Jean-François Samray (President and Chief Executive Officer, Quebec Forest Industry Council): Thank you, Mr. Chair.

[*Translation*]

My name is Jean-François Samray. I am the president and chief executive officer of the Quebec Forest Industry Council, the QFIC.

On behalf of the QFIC, I thank you for giving me the opportunity to have this discussion with you as part of your work on low-carbon and renewable fuels.

To begin, allow me to say a few words about our organization. The QFIC is the voice of Quebec's forest industry.

[*English*]

The Chair: Can I interrupt you for a moment, please?

Mr. Jean-François Samray: Yes, go ahead.

The Chair: I'm not getting interpretation. I don't know if other people are experiencing the same.

Mr. Bob Zimmer (Prince George—Peace River—Northern Rockies, CPC): I'm not getting it either.

Mr. Jean-François Samray: Is it okay now?

The Chair: Mr. Samray, please continue.

I'm sorry for the interruption.

Mr. Jean-François Samray: Okay.

[*Translation*]

The QFIC represents the interests of companies working with softwood and hardwood lumber, plywood, pulp, paper, cardboard and panels, of engineered lumber manufacturers, and of the goods and services companies that support them.

With our foundation on the expertise of ourselves and our partners, the QFIC guides and supports our members on a number of issues, including the environment and energy. As you know, the forest industry is a major engine of economic development for Canada and for Quebec.

In 2019, it paid $4.8 billion in taxes to governments. For the federal government, that represented $50 per cubic metre in 2019. Given the current price of wood, you will understand that the amount is actually well in excess of $50. For the provincial government in 2019, the amount was $100 per cubic metre. Also in 2019, the industry provided 17.4% of Quebec's exports and 4.7% of the province's GDP.

The work that your committee is undertaking today is of major importance for us. In the current context, every action designed to fight climate change counts. The forest industry, which depends on the forest for its raw material, is well positioned to assess the issues of global warming, and its current and future effects on the evolution of the forest ecosystems on which we depend. For our sector, climate change is an inexorable reality with which we must come to grips.

In fact, we have been doing so for a number of years and our performance speaks volumes. Since 1990, the emissions of greenhouse gases, GHGs, attributable to our industrial activities have decreased significantly. The decrease is 68% in total and 60% in intensity, or almost twice the target that Quebec set for itself for 2030. For the same period, the reduction of GHG emissions for all Quebec's industrial sectors combined, has been 24%. In other words, the forest industry has produced almost three times the average reductions.

The paper sector alone has recorded a reduction of 3.1 million tonnes. As a result, it remains a leader, both in Canada and internationally, in terms of pulp and paper production. We began the fight against climate change a number of years ago precisely because we have long been aware that our industry depends on the forest and that we must manage it sustainably. Canada is a leader in this area. In fact, 40% of the certified forests on the planet are found in Canada. Quebec has one quarter of them. That means that 10% of all certified forests are located in our province.

We know full well that battles are not won in advance. We must advance resolutely on all fronts. The energy transition is a key issue for us. The forestry industry consumes a lot of energy. To give you an idea of how much electricity we consume, I can tell you that it is about 40% of what Hydro-Québec Distribution sells. We also need fossil fuels, especially for our forest operations. Each year, to operate the machinery in the forest and to transport the wood, we require no less than 500 million litres of diesel fuel.

Despite the progress we have made up to now, we are aware that greater efforts can and must be made. We are ready for the task. However, the gains that we could make in our industry have in large part been made. Each additional gain requires a greater effort that we cannot make alone. This is exactly why your work is so important. At the QFIC, we are convinced that additional reductions in GHGs will be made possible mostly by renewable low-carbon fuels. We are reassured to see that your committee is addressing that precise issue.

In our view, four major issues must be the focus of your attention. First, the forestry biomass that is currently available is valued in various ways, especially in terms of extracting its energy content. The inevitable effect of developing bioenergy will be to increase the demand for biomass in various forms. The result will be a shift in the current balance between supply and demand. The production of biofuels must not have the effect of diverting the material that is essential to the balance of the forestry industry's ecosystem, especially in secondary and tertiary processing. When projects are being analyzed, therefore, it is becoming important to establish a kind of hierarchy of uses in order to use the resources optimally and to maximize their added value to the economy.

Second, the QFIC is concerned by the increasing number and complexity of regulations on reducing GHG emissions. Mostly federal, they are now in addition to the provincial ones.

● (1340)

It has been calculated that the financial impact for our industry might exceed $1 billion by 2030. This financial burden may well harm our company's competitiveness on international markets if Canada acts alone.

Third, Canada is vast, as is Quebec. Access to a supply of renewable fuels in remote regions remains a challenge. It may well be difficult for companies to reduce their GHG emissions without that access to biofuels at a competitive price.

As one of the witnesses mentioned earlier, the price difference will become important. It will be the reason why biofuels are used and therefore why GHG emissions will be reduced in the long term.

● (1345)

[*English*]

The Chair: I'm going to have to ask you to wrap up very quickly, sir.

[*Translation*]

Mr. Jean-François Samray: Okay.

Fourth, the hydrogen strategy—especially green hydrogen—can be an outstanding solution because the CO2 still emitted by paper mills can be used with green hydrogen to make methanol, biodiesel or any other form of fuel. That really would be a winning formula for Canada.

I will gladly answer your questions.

Thank you for giving me the opportunity to join you today.

[*English*]

The Chair: Thank you very much.

Now we'll open the first round of questions, for six minutes each, starting with Mr. Lloyd.

Mr. Dane Lloyd (Sturgeon River—Parkland, CPC): Thank you, Mr. Chair. I'll get right into it.

Dr. Kumar, thank you for your testimony. You're obviously an expert on this issue. I'm just wondering what the capacity is. You said that there's a lot of municipal waste that's not being used, and forest biomass, straw, oilseeds, things like that. In order to achieve what some people are talking about—having 60% of all fuels as renewable—what would need to be the production growth in these various areas, mostly around canola, wheat and forest biomass?

What would we need to produce in order to achieve that?

Dr. Amit Kumar: Just to give you a perspective in terms of.... I'll focus more on the lignocellulosic biomass like forest biomass. If you look at all of Canada, we are talking about...and this is mostly the residues. About 21 million tonnes of forest residue is available per year. If you think about the production of how much, let's say, ethanol or liquid fuel you can produce, it's generally 200 litres in a tonne.

With these residues that are available today, currently most of the operations are just piled on the roadside and burned to prevent forest fires as part of forest management practices, so these are not currently used. You can look at others, for example, straw. If you look at the whole of Canada, we are looking at about 28 million to 30 million tonnes of straw. There are some other uses, but again, the majority of this is left in the field to rot and it emits CO2. You do have the potential to use these large feedstocks, which are lignocellulosic feedstocks.

Municipal solid waste is another big one where you have about 25 million to 30 million tonnes—

Mr. Dane Lloyd: Thank you.

I'm sorry to interrupt, Dr. Kumar. I see your point on that with the straw and the forest products. I wanted to focus now on canola and wheat and things like that. We've seen the price of canola double this year. It's quite astounding how much it has gone up. If we were to divert this canola from food purposes or its current purposes and put it into renewable fuels, is it likely we'll see a much higher price for canola?

What do you think the consequences would be for other sectors of the economy?

Dr. Amit Kumar: If you look at the evidence—and this is the evidence that exists from the past several years—typically, there would be some increase in the cost. There is a food versus fuel debate all the time in terms of, if you divert it, then the cost goes up. That's why my point is to use the part of the plant that is not used.

Mr. Dane Lloyd: That's a good point, because I want to flip over to our friend from Covenant Energy.

We're talking about new crushing plants in Canada, but you're a farmer. You know the price of canola has doubled. It would be good for farmers if the price went up even more, but what will be the impact on canola as a food source if more and more of it is being diverted towards biodiesel?

Mr. Josh Gustafson: That's a good question, and it's one that we certainly felt we had to address right up front.

Early on when we were looking at our project, we hired a consultant who is maybe.... I would consider him the best in Canada, to be frank. We brought him on to look at the feedstocks and what this was going to mean for canola. How much is being produced? What do we have?

I'll just back up a little bit. If you look at what's being produced, you'll see that there were four million tonnes of canola oil crushed in 2019 out of the 10 million tonnes of seed that was crushed domestically. There was about 20 million or 19.5 million tonnes of seed produced in Canada.

The thing that you have to realize is that crushers have been at maximum capacity for the last three years, and they've been sitting there waiting. They've had the opportunity to expand. They've had the seed there to expand, so why weren't they expanding? The reason was that the edible market is only so big and, to be frank, it wasn't demanding enough to signify that they should expand.

Why did we see these three crushers come out just recently with these news releases? If you look at the chain of events, you'll see that Tidewater Midstream, True North Renewable Fuels and Covenant Energy came out with news releases that we were going to get into the renewable fuels production, looking at canola oil as a feedstock. Within one week, Richardson made its announcement. A week behind that—

● (1350)

Mr. Dane Lloyd: I only have a little bit of time. Are you concerned about the rapidly rising price of canola impacting your operations, if that's going to be your feedstock?

Mr. Josh Gustafson: Yes, you have to take into consideration all the feedstock options. Obviously, it makes it a lot tougher when canola prices are going up higher.

Mr. Dane Lloyd: Can you follow up in writing on that?

Mr. Josh Gustafson: Yes.

Mr. Dane Lloyd: My last question is for Mr. Angelucci.

I was reading that B100, pure biodiesel, could have a cloud point of 10°C. Obviously, in Canada, a cold country—you referenced Minnesota—it's not feasible for us to have biodiesel that has a cloud point of 10°C. Can you tell us a bit about what's going on with that? How is that going to be mitigated?

Mr. Giovanni Angelucci: Some biodiesels, depending on the feedstock, do have a higher cloud point, but there are other biofuels that have a lower cloud point. This is part of a transitionary period in alternative fuels. Biofuel doesn't have to be used as a B100, although it can be, but we can use it in varying blends all throughout the year and in different jurisdictions, depending on the temperature.

The only reason I bring up Minnesota as an example is that it's, on average, as cold or colder than some of our provinces, and there they're able to use B20, which has significant reductions for CO2 without any change in infrastructure and without having to go up against the cloud point issue.

The Chair: Thank you very much.

Thanks, Mr. Lloyd.

Mr. Simard, you're not on mute. You need to put your mute on. Thank you.

Mr. May, you're next for six minutes.

Mr. Bryan May (Cambridge, Lib.): Thank you very much, Mr. Chair.

Before my questions, I just want to thank all of the witnesses for being here today. As I said in the last meeting, it's amazing to see all these companies from across Canada coming together and recognizing the need to transition.

My questions today are going to be directed to Mr. Thurlow from Dow.

We know that decarbonizing a carbon-intensive sector is not a point of debate for most of us here today. It's something we have to do. The question is how we can find the best way to do it, not whether we should. Can you comment on the approaches that you've heard for addressing emissions reductions?

Mr. W. Scott Thurlow: Certainly. Again, that is possibly a question that would lead to a Ph.D. thesis. There are quite a few areas that we can talk about.

The first thing that I would say is that we're very happy to see the change in direction by the federal government on the clean fuel standard. When it was originally conceived, it was designed to also apply to industrial fuels. That would have been incredibly complicated, and it would have exposed the industrial sectors in Canada to a significant amount of external trade competition as a result of the increases in costs there.

Another issue that's come up is the prospect of renewable natural gas. Quite frankly, there just isn't a lot of evidence right now that some type of increase in renewable natural gas content in Canada is something that we could either, first, achieve or, second, consider economically. Renewable natural gas, depending on the source, can be up to four times as expensive as virgin natural gas. The other issue is just how much of it we have, and we don't have all that much.

To see the moves that the government made on the clean fuel standard for industrial fuels.... That was a very good idea. The reason is that the output-based pricing system has mechanisms in it to account for competitiveness issues outside of our border.

● (1355)

Mr. Bryan May: You stole my thunder a little bit, sir. You've actually answered three of my questions in your answer to the first question. I definitely wanted you to touch base on the focus of transportation fuels versus industrial.

Do you want to maybe take a moment, though, to elaborate a little bit more on that in terms of whether you believe Dow can help in that area?

Mr. W. Scott Thurlow: Absolutely. Again, the other thing that I would tell this committee is that the business of chemistry—whether it's Dow or other people in the sector—is going to be incredibly important for achieving Canada's climate change reduction goals.

I would say that it's the innovation of new plastics that leads to lightweighting. It is the ability to have these new advanced materials that will react in different ways under pressure that leads to the significant new GHG savings.

I guess the last thing that I'll say, from an OBPS perspective, is that the recent decision of the Supreme Court of Canada does allow for the provinces to continue to design their own systems. In so doing, they can design a system that is best-in-class for that particular province.

Mr. Bryan May: You touched on this a little bit, as well, in your first answer, but do you want to maybe elaborate a little more in terms of your views on the creation of a renewable natural gas mandate?

Mr. W. Scott Thurlow: That's a great question. I don't want to say that renewable natural gas isn't a climate solution. It absolutely is a climate solution. I just don't know if it is the climate solution.

As I said, I just don't know if we have the volumes in Canada to get to a significant, mandated requirement. Certainly, the costs would be very significant. There is an issue about whether or not the renewable natural gas will have the same physical and chemical properties as the virgin product from a feedstock perspective. There should be more study in this area. To say that we need a mandate in this area.... I think there just isn't enough fuel in the market right now to create such a mandate.

Mr. Bryan May: With respect to the policies or the plans that you may have heard from both the government and other parties, can you take a moment to compare and contrast what you've heard in terms of those proposed plans on this file?

Mr. W. Scott Thurlow: There's a long history of renewable fuels policy in Canada. It started under the previous government, and it's continuing under this one. Like I said, the government's decision to move away from the industrial fuels requirement under the clean fuel standard was a good idea. It makes a lot of sense. Nowhere else in the world do we have this kind of clean fuel standard for industrial fuels, so industry is very thankful that decision was made.

Does that shift a very significant burden onto the transportation fuels sector? Possibly. Certainly that's something that an industry like ours is going to have to look very closely at in terms of developing new options to meet those GHG reductions.

Mr. Bryan May: Thank you, sir. I think my time is almost up.

I'll just take the last couple of seconds here to, once again, thank all of the witnesses for taking the time to be here today.

Thank you, Mr. Chair.

The Chair: Thank you, Mr. May. You were right on time, which is much appreciated.

Mr. Simard.

[*Translation*]

Mr. Mario Simard (Jonquière, BQ): Thank you very much, Mr. Chair.

I have a quick question for Mr. Samray.

Mr. Samray, you mentioned four issues in your presentation. The first was about biomass and about the value put on it. You talked about the importance of establishing a kind of hierarchy of uses. We may come back to that later.

What interests me at the moment is the support the government provides to the ways in which biomass is valued. I'm thinking about biodiesel, bioethanol and biohydrogen. I would like your comments about that.

Is the federal government on board in terms of developing the area?

Mr. Jean-François Samray: When we analyze a company's record, we see its view of the future in its research and development expenditures.

At the forest industry council, we applaud when we see $35 million over two years set aside for the program called investments in forest industry transformation, or IFIT. It is for the forestry industry to convert and diversify into new products. However, in the budget as a whole, when we compare the amounts allocated to other sectors—you will recall how many billions of dollars have gone to the oil and gas sector—we are disappointed.

In other words, if the government sees any future at all in biofuels, it will have to invest money to support the industry to that end. I feel that all the witnesses today have said so. It's critical. Without money for research and development in order to reach economies of scale, the transition will not happen.

● (1400)

Mr. Mario Simard: So better support is needed.

Last week, we talked at length about hydrogen. You mentioned it briefly in your fourth point about green hydrogen.

What I gathered from some of the witnesses from the department last week is that the strategy was going to focus on grey hydrogen in the short term. I don't want to start that debate again, but what can green hydrogen mean for the forest industry?

Mr. Jean-François Samray: I feel that it can mean a lot. First, Quebec, like a number of other regions in Canada, has access to green electricity. The regions that do not have that access are beginning to get it. The cost of solar and wind energy is also now clearly lower than the energy produced by coal-fired plants.

For Quebec, having access to green electricity producing green hydrogen makes it possible to use the residual CO2 from paper mills, which is biogenic CO2 most of the time, and to combine the hydrogen molecule with the green CO2 molecule to produce biofuels as well.

Having the hydrolysis take place and the biofuels produced right on the paper mills' premises would enhance those sites and achieve the Government of Canada's objectives. By so doing, we would be killing two birds with one stone.

Mr. Mario Simard: Thank you, Mr. Samray.

As I have a little time left, I'd like to ask Mr. Kumar a quick question.

Mr. Kumar, in your presentation, you talked about the difficulty of reaching the economic optimum size for biomass.

Could you explain what you mean by "optimum size" in more detail?

[*English*]

Dr. Amit Kumar: When we talk about biomass utilization, we look at forest or field-based biomass. What I mean by forest-based biomass is this: Let's say that you're looking at forest residues. You have these in the forest. You have to bring these to a location to process them and convert them into different fuels. It is similar for straw. You have to bring straw to a centralized location and then convert it into different types of products and fuels.

The challenge is that if you look at biofuels, the cost of producing liquid fuel or gas or any product is directly related to what the area is that you are trying to bring it into, so that the overall cost of production for a smaller size of biomass facility is much higher. If you are using biomass—let's say 100,000 tonnes compared with half a million tonnes—the dollar-per-litre cost of production of fuels or chemicals is much lower for a size that is at a larger scale, such as half a million tonnes.

The optimum is scale. What I mean by that is the maximum size at which the cost of production is minimal. A lot of these facilities that you see today exist on the smaller side, so the cost of production is higher. If you get to an optimum scale, you can bring down the overall cost of production. That potential is there in Canada because you have large amounts of this biomass available. You could build to scale to where you could get the maximum benefit from economies of scale.

[*Translation*]

Mr. Mario Simard: So, in a word, Mr. Kumar, it means that we would need plants with a high capacity to be able to use biomass optimally.

Do I understand correctly?

● (1405)

[*English*]

Dr. Amit Kumar: You would need the large capacity of the plant. These plants.... It's not as if capacity is what they're not doing today. If you look at the forest industry today, you have plants that are at the scale of 700,000 tonnes or even a million tonnes per year. They are processing that scale. If you get to a scale with a larger scale—

The Chair: Thanks, Dr. Kumar. I'm going to have to stop you there.

Dr. Amit Kumar: Thank you.

The Chair: We'll go over to Mr. Cannings.

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

I want to continue with Dr. Kumar, talking about the life cycle of greenhouse gas footprint analyses of various feedstocks. You mentioned how the jurisdiction might play a role.

I have a company in my riding that has plans under way to build renewable natural gas plants using forest waste feedstocks. I'm wondering if you could comment on the life-cycle analysis for that type of renewable natural gas from forest waste feedstocks. How does it compare with regular natural gas? What is the actual footprint for, say, a plant in British Columbia, if you could come up with a number?

Dr. Amit Kumar: Typically, if we look at the life cycle of any of these feedstocks, especially when you're using biomass—let's say forest biomass—if you're using it for producing renewable natural gas, the key aspect that goes into the emissions and contributes to the overall life-cycle emissions.... For forest biomass, you're looking at emissions associated with harvesting and transportation, and then at conversion emissions. With regard to most of the typical emissions up to delivery to the plant, you'd look at their being in the range of about, I would say, 5% to 10% of the overall emissions that you are producing.

If I compare this with, let's say, the typical natural gas-based emissions, you are still looking at a reduction of 60% to 70% of the GHG emissions after you take into account the fossil fuel that goes into bringing this biomass to the centralized plant.

Mr. Richard Cannings: Thank you.

Also, I'm not sure if you mentioned it in your testimony, but I know that you've done some analysis of the possible life-cycle analysis for creating biohydrogen from these same feedstocks. I'm just wondering if you could comment on that and the viability of those processes to create hydrogen. We're hearing a lot about hydrogen these days.

Do you want to expand on that?

Dr. Amit Kumar: Yes. You could produce biohydrogen from a range of these different biomass feedstocks. When I refer to these feedstocks, they could be wheat, straw, the whole tree biomass or forest residues. Then there are different processes for how you can produce this hydrogen, which could be based on gasification or pyrolysis. The typical range of the cost of production that you are looking at is about $3 to $4 per kilogram of hydrogen. If I compare this with the typical cost of natural gas or SMR-based hydrogen production, you are still looking at a twofold to threefold higher cost compared to natural gas.

In terms of GHG emissions, if you look at the GHG emissions for biomass feedstocks and any biohydrogen compared to natural gas, they are much lower. You are looking at a significant reduction in those numbers, especially on the forest side. People talk about hydrogen from SMR, but they integrate CCS—carbon capture and storage—to produce blue hydrogen. We call that natural gas-based hydrogen “blue hydrogen”. If you compare that with the biomass—so SMR and CCS with biomass—you're looking at an almost 50% reduction in the case of the biomass-based hydrogen. Those are the kinds of hydrogen production numbers that we have come up with for a range of different feedstocks.

● (1410)

Mr. Richard Cannings: Just getting back to the previous line of questioning, what is the availability of these materials to produce hydrogen? How much of the hydrogen market could you take up—or the renewable natural gas market? The people who are doing these plants in my riding seem to think that they have far more material to work with than they could actually use. I'm just wondering if you could comment on that.

Dr. Amit Kumar: If you think about a tonne of biomass, a tonne of biomass can give you about 83 kilograms of hydrogen. In my remarks, I said that there is a significant amount in terms of the million tonnes of biomass that are available. Just as forest residue, there are 20 million tonnes. You will have to do a little bit of calculation, but I think you can look at about 83 kilograms, so you could still produce a significant amount of hydrogen.

It's not that you will meet all the demands for hydrogen, but it would be a contributor to the overall demand for hydrogen or renewable natural gas.

Mr. Richard Cannings: Thank you.

Mr. Chair, do I have much time?

The Chair: You have 20 seconds.

Mr. Richard Cannings: Then I will just thank you, and I will cede my time.

Dr. Amit Kumar: Thank you.

The Chair: Thank you, Mr. Cannings. I appreciate that.

We're moving into the second round, a round of five minutes each, starting with Mr. Zimmer.

Mr. Bob Zimmer: Thank you, everybody.

Thank you, Mr. Chair.

I have several questions, actually, for Dr. Kumar.

I've been looking at some of your research, and you're definitely well-researched and know the topic very well. You talk about life-cycle emissions, and I guess I have a couple of questions about how you measure life-cycle emissions. At what point do you start the process? At what time does that process start? Can you just go over how you measure life-cycle emissions?

Dr. Amit Kumar: Let's pick a product. We were discussing hydrogen, so let's pick hydrogen.

If you have to produce hydrogen from biomass—and let's pick a feedstock, forest biomass, which is forest residue—first you have to estimate what the emissions are associated with each of the unit operations that go into bringing the feedstock to the plant. What I mean by that is, if you look at logging residue today, the forest industry cuts a tree and drags it to the roadside. The limbs and the tops of those trees stay there on the roadside, and they take the main stem.

If you want to use this residue to produce hydrogen, you'll take into account the amount of energy that you need in piling this, forwarding it to a pile, chipping it and transporting it to the plant. You are including all the emissions associated with forwarding, piling and transporting.

The conversion emissions are also taken into account, when you look at life-cycle emissions. What is the energy going into the plant to produce the hydrogen?

Mr. Bob Zimmer: That's what I thought it was, too, so I'm going to ask you for some specifics.

One thing is that, as Conservatives, we are definitely supportive of the renewables sector. I think of geothermal, a project that's in my riding. Any kind of way we can use the natural energy of our planet without producing emissions is a great thing. We are also concerned about the overall, as you say, life-cycle emissions—the comparables.

We have a lot of Canadian natural gas, especially in my neck of the woods in northern B.C. Can you, though, do a direct comparison of the life-cycle emissions of natural gas as it comes out of the ground—a quantity there—with that of renewable natural gas?

Can you do the comparison for us—just a simple comparison, emission to emission?

Dr. Amit Kumar: You have to take the natural gas, let's say, to produce heat and power. The biggest difference comes in with the combustion emissions that you take. In any life cycle of these fuels, if you look at the combustion portion of the fuel, that's about 70% to 80% of the whole life cycle. In cases of—

Mr. Bob Zimmer: Do you have a number that says natural gas produces so and so many emissions? It depends, obviously, on what it's being used for, whether it's heating or for whatever product you're making. Just in general, typically in Canada we use it for heating our homes.

Do you have a direct comparison of the emissions from natural gas out of the ground—naturally occurring natural gas—compared with renewable natural gas?

● (1415)

Dr. Amit Kumar: Some of the numbers—

Mr. Bob Zimmer: Do you have that number?

Dr. Amit Kumar: Yes. The number for, let's say, the natural gas for power, if I have to give you a number, would be somewhere in the range of 400 to 430 grams of CO2 per kilowatt hour. There is a range for that.

Mr. Bob Zimmer: Is that natural gas?

Dr. Amit Kumar: That's natural gas, yes.

Mr. Bob Zimmer: Okay. What about renewable now?

Dr. Amit Kumar: If I have to take the renewable portion, probably the renewable portion would be almost 60% to 70% less, because we don't take the combustion emissions into account. I can get back to you with the exact number, but key are the combustion emissions, which we consider for biomass as carbon neutral.

Whatever you burn during the combustion of renewable natural gas is taken up by the trees or plants when they grow over their life cycle. That's where it's carbon neutral. That big chunk of combustion emissions is considered carbon neutral. That's where your biggest savings in GHG emissions over life cycle comes in.

Mr. Bob Zimmer: What would the number be, again, then? We said it was 430 grams per kilowatt hour for natural gas. What would be the number for renewable, then?

The Chair: Give a very quick answer, sir.

Dr. Amit Kumar: I'll have to say 50% to 60% less than that.

Mr. Bob Zimmer: Can you give us, for the committee—?

The Chair: I'm sorry, Mr. Zimmer, you're out of time. Thank you.

Mr. Weiler, we'll go over to you.

Mr. Patrick Weiler (West Vancouver—Sunshine Coast—Sea to Sky Country, Lib.): Thank you, Mr. Chair. I'd also like to thank all of our witnesses for the really fascinating discussion we're having today.

The first questions I have are for Canada Clean Fuels. It's a really interesting proposal that you put forward about the blender's credit.

My question for you is this. You mentioned that the price gap now stands at 15¢, a point at which it would be competitive with other fuels. I'm wondering why you're proposing this blending credit just for biofuels.

Of course, the proposal and the regulations and the systems we've been looking at are really agnostic about the types of fuels right now. We're really focusing on the absolute emissions reductions that we can get through them. Why focus particularly on a blender's credit rather than on things such as the clean fuel standard, which would reduce those for all different types of inputs?

Mr. Giovanni Angelucci: Thank you, Mr. Weiler. That's a great question.

I want to preface this by saying that the fact that we're advocating for one doesn't mean we're not advocating for others. As I said, I think our transition will be full of a bunch of different, innovative technologies to get us to where we have to be as a nation, and ultimately to get ourselves to net zero.

The reason we push for biofuels in particular is that biofuels offer a way to use all of our existing infrastructure. The diesel trucks that are out there, the diesel tanks that are out there and the diesel stations that are out there can all use a biofuel blend. It's a very simple and ultimately cost-effective way per tonne to get megatonnes of emissions...just because we use so much fuel.

The other benefit of a blender's credit is that if you make the cost of the end product cheaper, then all of the other pieces of the chain fall into place. You can get financing for a plant to build it, because they know there's offtake for their product in a profitable way. Low-cost financing for green alternatives, especially now, abounds.

It's one piece of the puzzle. It's something we are focused on, know well and that we've seen work. The U.S. has a blender's credit. It functions for both producers and discretionary blenders and for upstream oil and gas players, depending on who wants to use it. It's the reason their average blend level for biofuel is about twice what it is in Canada right now.

Mr. Patrick Weiler: Thank you for that.

The next question I have is.... Transportation is almost a quarter of our emissions. It's the second-biggest source right now. Collectively, with oil and gas, that's more than half of our country's emissions. I was hoping you could speak to the importance of having a long-term steadily rising price on pollution as a mechanism to ensure that you have the investment being made into some of these renewable and cleaner alternatives, such as biodiesel, to reduce emissions from the highest sources in our country.

Mr. Giovanni Angelucci: Thank you. That's another great question.

Having something that steadily rises and is predictable is one of the best tools the government can use to encourage business investment. People and business leaders like certain things. Sometimes it falls in their favour and sometimes it's a little bit out of favour, but having that predictability allows them to plan and adjust for that.

Having a steadily rising carbon tax tells everybody that we're putting the price and the social cost of conventional fuels onto the cost of that fuel, but we're not doing it so quickly that Canadians will be hurt by this carbon tax. This gives other folks who are in the production or blending part of the economy the time and the foresight to see where they will break even or where their fuels become cost-effective. In doing so, you help create a thriving renewables industry.

● (1420)

Mr. Patrick Weiler: Thank you.

I'd like to ask the same question to Covenant Energy. You mentioned that your plant is going to be coming online in a couple of years to produce some feedstock from canola for hydrogen and other biodiesels. I'm wondering what would happen for your business and your business plan if the clean fuel regulations didn't go into effect at that time.

Mr. Josh Gustafson: The bottom line is that the reason there haven't been any renewable diesel plants popping up prior to this one is the uncertainty about the clean fuel regulations, just to be very clear.

We're dealing with being a “first of its kind” facility here. You see what happens, I guess, when you look at the United States. There are policies put in place in California and Oregon—and even Washington state is now following suit. Policies are put in place, and policy drives investment. With the policies there, all of a sudden you're seeing an explosion of renewable diesel facilities going up. To have any uncertainty or any wavering on the Canadian side is really going to hurt investors in terms of having the confidence to move forward with projects like ours.

The Chair: Thank you.

Thank you, Mr. Weiler.

We will go to Mr. Simard for two and a half minutes.

[*Translation*]

Mr. Mario Simard: Thank you, Mr. Chair.

Could I just take a second to send my regards to my friend Bob Larocque, although I have no questions for him?

I would like to go back to some comments from Mr. Samray and Mr. Kumar.

Mr. Kumar was talking about high-capacity plants. In another study we did on the forest industry, I was told that a high-capacity biorefinery could cost about $2 billion.

Earlier, Mr. Samray was telling us about the program called investments in forest industry transformation, which is being funded to the tune of $35 million over two years. That is clearly insufficient.

Could Mr. Samray or Mr. Kumar tell me whether a high-capacity lignocellulosic biomass processing plant requires an investment of about $2 billion?

I have another question for Mr. Kumar and it is little more specific.

Mr. Kumar, when you process lignocellulosic biomass, do you just make biofuels, or can you make other products that can, for example, replace petrochemicals in plastics?

Mr. Jean-François Samray: That one is for you, Mr. Kumar.

[*English*]

Dr. Amit Kumar: I'll comment on the key aspect, in terms of the investment that is needed. Any of these that you were to do would need to be a partnership between the public and private sectors. Only then can you go to these larger plants. I can get the specific numbers to you concerning what they would entail.

In terms specifically of your second question, related to.... Could repeat your second question, which was related to the optimum scale, Mr. Simard?

[*Translation*]

Mr. Mario Simard: Can $2 billion be the investment we need to have a high-capacity plant?

[*English*]

Dr. Amit Kumar: We'll have to look at it in terms of the investment, but on the scale we are talking about, the large forest industry plants are at the same scale, so the amount of investment needed to build these plants would be similar. You're processing half a million tonnes of biomass per year, which has been done, and then you invest into these forestry plants. A similar type of investment would be needed.

The other question, I now remember, is in terms of the biorefinery. You said that only the ethanol could be produced, but I think the concept we are thinking of in terms of processing—

● (1425)

The Chair: Dr. Kumar, I hate to keep doing this to you. It seems as though I'm picking on you, but I'm not, trust me. I have to cut you off again. We have to stick to the time limit, so we'll have to move on.

Mr. Cannings.

Thanks.

Mr. Richard Cannings: Thank you.

I'm going to turn to Mr. Gustafson of Covenant Energy Ltd. and pick up on some of the food-versus-fuel questions.

We talk about the use of canola around the world. Some goes to fuel. Some goes to food. I'm just wondering, as canola prices go up, what the pressures are on farmers on the Canadian prairies to convert their cropland from, say, wheat to canola once canola gets just too good to resist. Is that a situation in which we could see a reduction in wheat and other food crops and their being changed over to canola fuel crops?

I have the same sort of debate in my riding, but it revolves around changing from peaches and apricots to wine, and people complain about that—some people do.

I just wanted to know what the dynamics of this are for farmers on the prairies.

Mr. Josh Gustafson: First I'll say that both the provincial and the federal government have been working with associations such as the Canola Council of Canada, SaskCanola and Canadian Canola Growers Association. One thing that's helping to provide the supply needed for the transition into using canola oil in renewable fuels is the vast amount of research and development going into producing new, better-yielding canola varieties.

Farmers are really good at adapting. We're really working hard. There are tons of new advancements in machinery to help make better farming practices.

As for the debate about taking acres away from other crops, such as wheat and such things, farmers are pretty good stewards of the land. You know that you can't grow canola back to back to back. It just doesn't work. You have to implement a crop rotation, and there's only so much you can do before running into disease problems from trying to push canola.

Farmers are going to steward it. Even now, with canola being at an extremely high price historically, you see a modest increase in canola acres, but it's not through the roof. It's not “abandon ship” on everything else and put in canola, because the bottom line is that there's only so much you can do to push that narrative.

Along with that, wheat prices are looking good, and lentil prices are looking good, so there are other avenues to keep pushing on those other varieties and the other commodities as well.

The Chair: Thank you.

Thank you, Mr. Cannings.

Mr. Richard Cannings: I wanted to say hi to Bob Larocque too. I was going to ask him a question, but....

The Chair: He's popular for a guy who's not answering a lot of questions.

I'll say hi too, Bob.

We'll go over to Mr. McLean.

Mr. Greg McLean (Calgary Centre, CPC): Can we all say hi to Bob?

The Chair: Yes, we should.

Mr. Greg McLean: Thank you.

Witnesses, thanks very much for coming, but I'm going to ask a question here of Mr. Kumar.

I think we're getting somewhere with your research and I hope you can commit to giving us some pretty clear ideal outcomes in written format after this.

Let me ask, just for prodding here.... I know my colleague Mr. Simard talked about a $2-billion bioplant, and my colleague Bob Zimmer talked about getting into the actual cost of this and the life-cycle emissions. If you're talking about building—correct me if I'm wrong—a $2-billion plant that processes 500,000 tonnes per year of biomass, if that's the ideal, can you give us, all in, how big a mass of land you're talking about culling it from?

Also tell us first, please, what you're talking about as far as the CO2 emissions associated with the building of the facility itself are concerned, if that's included in your life-cycle analysis.

Dr. Amit Kumar: Thank you for your question.

If you think of, let's say, 500,000 tonnes of biomass annually, it's equivalent to about 1,500 tonnes of biomass per day of processing. Now, in that area it will depend upon what type of feedstock you are using to support the plant. If you are looking at, for example, forest biomass—the whole tree biomass—the yield, if I think about it, is about 84 dry tonnes per hectare. This is from a good site. You can, then, get 84 dry tonnes from a hectare of land.

Now, if I go about the footprint of supporting this per year, using this much biomass, you are looking at about a 50-kilometre radius for getting that biomass. Again depending on the yield, where you are locating it, that is—

● (1430)

Mr. Greg McLean: Thank you. I'm sorry. I have to be quicker here.

For the $2-billion facility, which is presumably going to be built of wood, steel and concrete, what are the CO2 emissions built into it?

Dr. Amit Kumar: The construction emissions are the lowest component of emissions over a life cycle. You are looking at even less than 1% of the total life-cycle emissions that you are considering when you compare this with a fossil-fuel plant. Overall, then, this is a very low component. The major components would be harvesting, transportation and getting the whole feedstock to the plant.

Mr. Greg McLean: Okay.

What percentage of the fuel mix, if you're talking about natural gas mixed with renewable natural gas, would this plant be able to supply, given the ideal sizing and costing of this?

Dr. Amit Kumar: In terms of the yields, I'll probably have to get you the number, but typically the yield for renewable natural gas goes at 30% to 40%, or 0.3 to 0.4 kilograms of renewable natural gas that you could produce per kilogram of biomass. To get to 500,000 tonnes, however, that's what we need to do—

Mr. Greg McLean: How much of the gas could you replace with the renewable, then, given the facility you're talking about?

Dr. Amit Kumar: How much to replace that will depend on what my baseline is, so what I'm comparing with.

Mr. Greg McLean: I appreciate that. If you can give us a model we can go on there, it would be really instructive. I thank you very much.

Because Mr. Angelucci had some good comments here, I want to ask him about biodiesel. He talked about cost comparisons with natural gas, and the price gap between biodiesel and regular diesel—15¢ versus 3¢ is written here—but let me ask you this: Does this include the cost of excise taxes that are incumbent upon diesel and that aren't imposed on biodiesel?

Mr. Giovanni Angelucci: Thank you for the question.

Yes, that is supposed to be an applies-to-apples comparison, when you're comparing biodiesel to regular diesel, so sort of taxes—

Mr. Greg McLean: That's with no tax on biodiesel, but there's excise tax on real diesel.

Mr. Giovanni Angelucci: Yes. Factoring in some of the benefits that it already has, we're seeing still that kind of gap between biodiesel and diesel. It fluctuates, and to be very truthful, diesel and biodiesel are always fluctuating—

Mr. Greg McLean: If we took the government's extra costing into diesel, how would they compare, one with the other?

Mr. Giovanni Angelucci: If I understood the question correctly, it's what you see: It's about a 15¢ spread between a zero blend and a B20 blend.

Mr. Greg McLean: So the zero blend does include...?

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

Mr. Lefebvre, we go over to you.

Mr. Paul Lefebvre (Sudbury, Lib.): Thank you, Mr. Chair.

[*Translation*]

My thanks to all the witnesses for joining us today.

[*English*]

Again we have another really good panel of witnesses, just to show us the ingenuity in Canada, as we are tackling climate change and looking at economic opportunities, which this represents. I really want to thank all of the witnesses who are here today for the work you do.

Actually, I'll ask Bob a question.

[*Translation*]

How are you?

[*English*]

It's good to see you.

We've heard a lot about food versus fuel, which I find very interesting. At the same time, though, we talk about supply and demand, because that obviously drives the economy. As I say, we're looking at this as an economic opportunity. It's a necessity. At the same time we're looking at how we reduce our greenhouse gas emissions.

Your members are obviously among some of the largest fuel producers in Canada. How do they see this economic opportunity and their role in reducing greenhouse gas emissions at the same time?

Mr. Bob Larocque: Thank you very much, Paul.

To put it in perspective, for the clean fuel regulation, that's B10, if you wish, or bio-based 10% and ethanol at 15%, we need billions of litres in Canada by 2030—anywhere from six billion to 10 billion. We will send a brief to the committee about those numbers of litres versus percentage and cost that we talked about. We are taking this very seriously. We're looking at every single option.

Hydrogen is also an option for us. Electrification is another one, with charging stations in our sites. We're also looking at coprocessing, which is actually putting crude right into a refinery. That's something that we haven't talked about yet, but there's a facility in Burnaby, B.C., right now doing this. They want to double it. Tidewater is also talking about that in their investments.

This is significant, and billions of dollars are going to be invested. We already saw $1 billion go into two facilities in the last three months, and we'll see a lot more.

● (1435)

Mr. Paul Lefebvre: That means that the businesses are seeing a big opportunity to do this.

Mr. Bob Larocque: Yes.

Mr. Paul Lefebvre: We always look at what is going on in the U.S. Obviously we see what they're doing, and it shapes and influences us.

If we don't do this, if we don't go down this route—and I think we all agree that we should be going down this path—do we see the U.S. being able to export some of their product here and being able to benefit from our markets because we're not doing enough on our side?

Mr. Bob Larocque: There are two things happening. It's both ways....

One of them is that, if we don't increase and accelerate the production of bio-based products in Canada, biofuels, we will have to import them from the United States. No questions asked. That's a done deal. We're importing right now, so we have a huge opportunity to build in Canada.

Number two, with what we are building in Canada, if the life-cycle analysis is not quite the same, the incentives are not the same, our Canadian products are going to go to the United States. We will sell to California. We need to get it right. We need to get Canadian policies and incentives aligned. We also want to make sure that we keep it in Canada.

On that note, I think we're on a good track with the low-carbon fuel fund, the clean fuel regulations. It's the details in it that will be critically important in the next two years.

Mr. Paul Lefebvre: Those are forthcoming. I know there are a lot of consultations with your industry and a lot of stakeholders.

Do you believe that we can be self-sufficient in Canada when we talk about the biofuels industry, that we have enough to do, or will we need to import no matter what?

Mr. Bob Larocque: I'll be honest. At this time, I'm optimistic. I think we can do it by 2030.

Mr. Paul Lefebvre: Okay.

Mr. Bob Larocque: I'm hopeful in what's happening. In the next two years, and with the conversation we're having—even with the other people, like Covenant, for example, which is outside our sector, we're all working together—I think we can get there.

One thing, though, is that it has to be all feedstock. We need to get forestry, agriculture—everything—to get there.

Mr. Paul Lefebvre: As we are doing this report, would you say one of the issues is having more of a network, or certainly more.... I don't think there are a lot of organizations focused on feedstock for biofuels right now that just look at that, and maybe I'm wrong. Certainly, it is more of a national organization that is looking at feedstock.

How do we get it? How do we advocate to make that part of the.... It is part of the supply chain, but also having a voice within the supply chain? What are your thoughts on that?

Mr. Bob Larocque: We're taking some lead on this, to be honest. We're launching a transportation task force, with the automakers to make sure they can accept the fuel, with the feedstock suppliers so they can provide it to us, with all the blenders and all the biofuel producers, and we're going to have our first meeting in June.

I would suggest strongly that this committee recommend a transportation task force. We can only do it together as a supply chain. We can't do it individually.

Mr. Paul Lefebvre: I one hundred per cent—

The Chair: Thank you.

Mr. Paul Lefebvre: Am I done? That's too bad.

[*Translation*]

Thank you, Mr. Larocque.

[*English*]

The Chair: Unfortunately, you are done. Thanks, Mr. Lefebvre.

Mr. Patzer, we'll go over to you.

Mr. Jeremy Patzer (Cypress Hills—Grasslands, CPC): Thank you very much to the witnesses.

I'm going to start quickly with Dr. Kumar.

I want you to finish up the thought on your public-private partnership that you were mentioning. I want to ask simply, why? Does it not make sense on its own, even with these regulations?

Dr. Amit Kumar: In the beginning, when the industry has to grow—and I especially focused on the lignocellulosic biomass industry, which has to grow—initial incentives will kick-start the economy, and then, later on, once the economy is going, the government might not need to do an investment, as the market will pick up.

That's what my initial thought was.

Mr. Jeremy Patzer: Thank you for that.

I'm going to move over to Covenant Energy.

It's great to see some local production happening here in Saskatchewan. In particular, I like the fact that you're looking to build your plant right where the crops are being grown.

The question I have of you to start with is on some simple math: How many tonnes of canola are going to be needed per year, and how many litres of fuel is that going to produce?

● (1440)

Mr. Josh Gustafson: Are you talking about our facility in particular?

Mr. Jeremy Patzer: Yes.

Mr. Josh Gustafson: We're looking at a 6,500-barrel-a-day facility. That's 6,500 barrels a day of feedstock, which produces about 5,900 barrels a day of fuel production. It's give or take whether you're producing arctic-grade renewable diesel, summer-grade or sustainable aviation fuel, but that works out to about 350,000 metric tons of canola oil if we are using 100% canola oil as a feedstock. That would produce in the ballpark of 325 million litres of fuel.

Mr. Jeremy Patzer: Do you think we have that production happening right now? I know there have been a lot of questions about whether we are going to be replacing what's being grown for food with what's going to be used for biodiesel. Are you absolutely confident that you have the canola production right now in the region or across the province to meet that demand?

Mr. Josh Gustafson: Absolutely. In 2019, four million tonnes of oil was produced, as I said. Fifty per cent of it went to the States and 25% of it went offshore, and we used only 25% of it here in Canada. Not only is there oil to be used here in Canada, but considering these announcements by Viterra, Cargill, Richardson and it looks like possibly even others that are coming out, there's going to be enough oil to fill this supply need for renewable diesel production.

Mr. Jeremy Patzer: I think you were talking about a feasibility study earlier. What is the pricing per litre? For a consumer, a farmer looking to fill his tanks, what's he going to be paying per litre for this renewable diesel when it comes time to actually get it onto market?

Mr. Josh Gustafson: It's a little more complex than just stating a number. Right now the price is pretty much driven by what's happening in California. There's not even a really good tracker to follow that price. If you want to find out the price down in California, you basically have to take the rack price of diesel, add in the D4 RIN price, add in the California credit and then add in the blender's tax credit, and back into a price that way. It's a lot more complex than just stating a number.

Certainly, for our company, we're working out and showing all the economics behind the pricing scheduling and what it's going to look like and how it's going to move alongside even something like the vegetable oil market.

Mr. Jeremy Patzer: With the coal phase-out that's happening because of this government, it's obviously good to see the jobs that you're going to be making here and producing here. What's the opportunity to expand in this and to make this an even larger-scale operation than what you have right now?

Mr. Josh Gustafson: We would be foolish not to take into consideration the ability to increase and to move alongside the market as it grows. Obviously it's a little bit more risky since it is just coming in. The CFS hasn't even been fully rolled out yet. We have plans to look at increasing in size to adapt to different feedstocks and to look at production and marketability for everything from Canadian fuel producers and suppliers to a home for it in the U.S. right down to the export market.

We haven't even talked about the spinoff effects for all the other industries that are going to be affected, like the processors, the logistics and shipping industry, and farmers. There are going to be widespread impacts.

Mr. Jeremy Patzer: I have one last question.

The Chair: You're right on the button there, Mr. Patzer.

Mr. Jeremy Patzer: Okay. Thank you very much.

The Chair: Next we have Mr. Serré for five minutes.

[*Translation*]

Mr. Marc Serré (Nickel Belt, Lib.): Thank you, Mr. Chair.

My thanks to all the witnesses for joining us today.

Before I put my first question to Jean-François Samray, I would like to make one thing clear.

Both today and in our last meeting, our honourable colleague Mr. Simard has mentioned that our government has a strategy for grey hydrogen. I just want to be clear about this: we have no strategy for grey hydrogen.

I would like to give Mr. Samray the opportunity to speak a little more about green hydrogen and about our strategy.

Mr. Samray, what specific recommendations do you have on what more we can do to enhance Canada's hydrogen strategy?

Mr. Jean-François Samray: Looking at what is being done elsewhere can sometimes provide good ideas. For example, you can consult the financial information from the UPM paper mill in Finland. The mill was going through some difficulties and the government supported it in research and development. Biofuels are now their leading profit centre. That has allowed the mill to consolidate its investments in the pulp and paper sector and in its forestry operations.

As for hydrogen, it is clear that more and more regions in Canada can have electricity, produce green hydrogen and combine it with biogenic carbon, whether that carbon comes from combustion in paper mills, biomass cogeneration plants, or biomethanization plants. About 36% of the methane coming out of the digesters is from biogenic CO2. These are places where one unit of green hydrogen is added to obtain hydrogen that is just as green. Things like that are really worth looking at.

I really encourage you to read the article that William Nordhaus, who won the Nobel prize for economics, wrote on what he calls the “Climate Club”. You can really see how far Canada can go and how it is in our interests to use such things to our advantage before we find ourselves isolated. We have a huge number of advantages: research and development, territory, biomass, we have it all.

It is up to you, our elected representatives, to come up with policies to support it. That is why we are here today.

● (1445)

Mr. Marc Serré: Thank you very much.

[*English*]

Mr. Larocque, you were on a roll earlier with my colleague Paul Lefebvre. I wanted to give you another opportunity.

When we talk about the low-carbon fund and we're looking at some of our strategies, you mentioned some of the details. Because we're doing the consultation as we speak, I want to give you the opportunity here to provide the committee with some of your recommendations on some of these funds that we're providing on the renewables side.

Mr. Bob Larocque: Yes, quickly, just to start, on the low-carbon fuel fund, for example, it's a very good start. I know that Jeremy, Mr. Patzer, was talking about public partnerships. This is just to get us over the hump with provincial plans and the CFR.

Number two, on the low-carbon fuel, we're really pushing the federal government to consider the full infrastructure, not just the production plants. It's needed, but we also need to build the terminals, and we need to provide some help to retail, because they need to upgrade their equipment to be able to sell the B10, B20 and B100, as we heard today. We need to set up the infrastructure. That would be one recommendation that I would make.

The other thing that everyone also needs to.... There are two comments. The net-zero accelerator fund, under the $8 billion, was topped up, and there are some opportunities there for pulp and paper, refining, cement and other sectors to work together. Wouldn't it be nice to use forest residue, bring it into ours, blend it up and have a cement plant use it as a biofuel? You'd have three sectors that would reduce their emissions. That's what I'm talking about: ensuring that the government plan on biofuels is a line across Environment Canada, National Resources Canada and ISED.

Those are the recommendations I would make.

Mr. Marc Serré: Thank you.

Mr. Thurlow, you expanded a bit on this earlier in some of your responses, but I wanted you to talk further, in the probably 30 seconds I have left here, about our government's decision to focus on transportation fuels as opposed to the industrial fuels. Can you expand on that, please?

Mr. W. Scott Thurlow: Certainly. That was heralded throughout industry as a good decision.

The primary reason it's a good decision is that the carbon price under the OBPS will allow for competitiveness to be taken into consideration, and energy-intensive and trade-exposed industries will not have the same regulatory burden under that price as they would have under a dedicated clean fuel standard, we'll call it, for industry.

The other thing that I would add to something Mr. Larocque said—

The Chair: Very quickly.

Mr. W. Scott Thurlow: —is that natural gas is a very good substitute fuel for a lot of the other solid fuels that have a much higher carbon intensity.

The Chair: Okay. Thank you very much.

Thank you, Mr. Serré.

Mr. Simard, we'll go back to you for two and a half minutes, please.

[*Translation*]

Mr. Mario Simard: Thank you, Mr. Chair.

I would like to quickly go back to a phrase used by Mr. Samray. Mr. Kumar can also feel free to join in.

Mr. Samray, in an answer to my friend Mr. Serré, you talked about seeing how far Canada can go.

Mr. Kumar said that we have major potential in biomass. I am interested in finding out how government action can support that major potential.

Let me give you an example and you can tell me if I am wrong.

I know that, in the 1970s, we did not have the technology we needed to make the oil sands profitable. It took a major investment from the federal government in research and development to successfully make that technology available.

Do you think that we could consider similar government action in order to develop the technologies required for biomass?

Both Mr. Samray and Mr. Kumar can answer my question.

● (1450)

Mr. Jean-François Samray: I think that would be in everyone's interest.

I gave Finland and UPM as an example. They consolidated a sector that was already in place and was needed in order to build more wooden buildings. The wood used in that construction is carbon negative.

The best way to protect industries from certain commercial fallout is to support their research and development and to help them position themselves in the market by developing new products.

Given the size of our forests, I sincerely believe that Canada has everything to gain by developing new technologies. Bioenergy is part of that, in that it fits into our value chains.

[*English*]

Dr. Amit Kumar: If I can add to what was said, I mentioned there is large potential, and that potential comes from some of the feedstocks that I talked about that are not being used—forest residues or straw, which currently is mostly not being used. Also, if you look at just the amount of biomass that we cut, the whole tree, in different provinces there are different regulations, but if I think about annual allowable cut, how much is allowed to be cut every year, typically, if you look at that over the years—10 years, 15 years—you will see that is still about 50% to 60% of the total annual allowable cut.

If there are regulations that make it mandatory to use a small percentage of that for biofuels or even making these residues available for bioindustry—if there is some kind of regulation that helps in doing that—it will help to get the secure supply of biomass to convert to biofuels.

The Chair: Thank you, Dr. Kumar.

Mr. Cannings, we'll move over to you.

Mr. Richard Cannings: Thank you.

Mr. Serré ended up asking Mr. Larocque the questions I had lined up for him. I'm going to turn back to Mr. Gustafson and go back to canola.

I'm just trying to drill down on this, the routes that canola takes or the end uses of canola that we produce here in Canada. A large proportion, as you say, is exported. Do you know the end uses of that canola, the export canola, the canola we send to the United States or Asia? What proportion of that is used for fuels versus cooking oil, that kind of...?

Mr. Josh Gustafson: I don't know the stats off the top of my head. I do know that anything we export goes into the edible market and renewable fuels—largely it has to do with how it's refined at the different crushers. Obviously, if you're looking at an RBD canola oil, that's largely going more into the edible markets, and most of the stuff that went offshore was a crude super degummed oil that was bound more for the biofuels market. It depends on what type of oil and where it was going, but certainly, those are the two main destinations.

Mr. Richard Cannings: You also mentioned aviation fuel. I remember a news story a couple of years ago. I think it was Qantas that did a flight from North America to Australia. I forget the details, but they were using aviation fuel that was, I believe, made from canola or at least a blend. Someone did a calculation of how many acres of farmland had gone into that flight.

I'm just wondering if you could comment on the prospect of using canola for aviation fuel in terms of how much production we need to make a meaningful dent in the aviation fuel that we need or will need in the future.

Mr. Josh Gustafson: Yes, absolutely. One of the first things to say is that—and it's something that I'm very proud of—Canada is one of the best canola-producing countries in the world, if not the best, and Saskatchewan is a very huge part of that canola production. We produce a lot of it. We have the capacity, as I said. The government is trying to push to go from 10 million tonnes of crush capacity up to a 14 million or 15 million tonnes of crush capacity. We're looking at trying to add an extra two million tonnes of oil to the idea.

I do think that canola oil can play a very big part in the production of sustainable aviation fuel. Certainly some of the tests that are going on are proving to be very effective in emissions reductions, and when you look at the way the industry is going, you have announcements from massive companies like Boeing saying they're going to have 100% renewable aircrafts by 2030. The bottom line is that the industry is moving very aggressively towards sustainable aviation fuel, and we feel that canola oil can play a very big part in that.

● (1455)

The Chair: Thank you, Mr. Gustafson, and thank you, Mr. Cannings.

We'll now go over to Mr. McLean.

Mr. Greg McLean: I'll take the second half of this. Mr. Patzer can start off the questions.

The Chair: Sure.

Mr. Jeremy Patzer: Yes. I'll be splitting my time with Greg.

I'll go back to Mr. Gustafson, with two quick questions.

How many acres, every year, is it going to take to meet the demand you spoke of for one year's worth of fuel from your plant?

Mr. Josh Gustafson: I don't have that number. I could very easily figure it out, but I don't want to waste your time here with my calculator.

Mr. Jeremy Patzer: If you could submit that to the committee, that would be great. That would be really helpful for our report.

My last question is this. If the fuel you're making is superior to conventional diesel—I'm looking at your website and the statistics look really good—why do we even need the clean fuel standard if it's already a superior fuel, on performance merit alone, to conventional diesel?

Mr. Josh Gustafson: It's a process to get it produced. The bottom line is that to compete with the economics of producing fossil diesel, at the large scale at which they are doing it, is very tough, so we need the government support. We need the clean fuel standard to bring in the blending mandates to require that fuel to be put in there and to bring that home, and then to kind of help break into the industry of having renewable fuels blended in.

In certain areas, it looks like they're going to straight renewable diesel. You see what's happening in the cities of San Francisco and Oakland. They are converting entire fleets of city vehicles to 100% renewable diesel and seeing a significant amount of emissions reductions.

The bottom line is the scale at which fossil diesel is used right now in Canada. There is no way we can touch that sort of production at the time being.

Mr. Jeremy Patzer: Thank you.

Go ahead, Greg.

Mr. Greg McLean: I'll continue with Mr. Gustafson.

Let's pretend for a moment that the world is going to eat the same amount of oilseeds going forward, with no increase or decrease, and you are going to produce a bunch of oilseeds for production in fuel. I think that means you're going to have to break more land.

Is this going to be a lot like what happened in southeast Asia, where they have deforested great amounts of natural land in order to make palm oil?

Mr. Josh Gustafson: No, is the short answer, and I'll tell you why.

Looking at the “Keep it Coming” strategy that was put out by the Canola Council of Canada and the federal government, they are looking to hit, as my report shows, 26 million tonnes of production, up from 20 million tonnes, over the next five years, and they're looking at doing that with the same number of acres. As I said, the yield is expected to go from 39.9 bushels per acre up to 52 bushels per acre. That is largely due to better farming practices, better products and—

Mr. Greg McLean: Would it be more fertilizer as well, would you say?

Mr. Josh Gustafson: I don't know about more fertilizer, but better usage of fertilizer, for sure.

Mr. Greg McLean: Good. Thank you.

Do I still have time, Mr. Chair?

The Chair: You have about a minute and a half.

Mr. Greg McLean: I'll go to Mr. Larocque for a quick question.

Mr. Larocque, you talked about $20 billion to $30 billion being required in investment—I hope you mean that's industry investment—over the next little while, in order to get us up to speed on what we need.

How well have we done in producing our own biofuels since—what was it—the 2008 mandate to get to 5%?

Mr. Bob Larocque: If you don't mind, I will have Mr. Dave Schick answer that question. He has a bit more information than I do on this.

● (1500)

Mr. David Schick (Vice-President, Western Canada, Canadian Fuels Association): Thanks very much for the question.

We've seen a lot of growth. It is federal policies that really drive the economics to build these larger-scale facilities. We're seeing, under the low-carbon fuel standard in British Columbia, like the CFR federally, that the carbon intensity-natured policies are driving changes like we've seen with low-carbon fuel.

Mr. Greg McLean: Mr. Schick, it's a very direct question: How well have you done in meeting the last standard, which was imposed in 2008, to get to where we are now, and how much are we importing as opposed to producing here?

Mr. David Schick: I don't have a specific number. There is a significant amount being imported. We can do better in manufacturing these products in Canada.

Mr. Greg McLean: We have failed as far as meeting our own needs here. We have imported over half of our biofuels in the last 13 years.

Mr. David Schick: I don't know if "failed" is the right word, but we can do better, for sure.

Mr. Greg McLean: Thank you.

That's it, Mr. Chair.

The Chair: Thank you, Mr. McLean. You are right on time.

Ms. Jones, you are going to finish off the question portion of the meeting.

Ms. Yvonne Jones (Labrador, Lib.): Thank you, Mr. Chair.

I also want to thank all the panellists today. It's been a very informative discussion, no doubt.

As you know, the Government of Canada has worked very hard, both with many of you who are here today and with those across the country in the industry sector over the last few years, to look at federal initiatives for developing new carbon and low-carbon and renewable fuels. We like to think that we're hitting those programs in the right direction. You're the people out there in the industry transforming this. What recommendations would you leave our committee with today?

Anyone can feel free to start the reply.

Mr. Jean-François Samray: Mr. Chair, if you will allow me, I will answer the question.

The Chair: Please go ahead.

Mr. Jean-François Samray: I think I was quite clear and that my fellow witnesses were in the same place. We need some financial support to bring this to the market and some clear regulations to facilitate getting capital from the market. These are the two things that will give us the proper pace with regard to phasing in the new production plan.

I would say definitely financial support and a clear regulatory framework.

Mr. W. Scott Thurlow: I would say let carbon be carbon. Any reduction in carbon is a reduction in carbon anywhere in the country. Don't limit yourselves to limiting carbon. Think of other environmental impacts, and there are lots of them.

The Chair: Mr. Larocque, did you have your hand up?

Mr. Bob Larocque: Do not pick a winner. Allow every potential lowest cost abatement to reduce carbon, and please keep in mind what's happening in the United States. This is very important for this committee.

The Chair: Thank you.

Have you finished, Ms. Jones? I think we're pushing....

Ms. Yvonne Jones: I am, Mr. Chair. Thank you.

The Chair: All right. Thank you. We're pushing the limit.

Committee members, do not leave when the witnesses leave. We have a couple of things to take care of.

I want to say thank you to all the witnesses. It was an incredibly interesting panel and very informative. As I say every meeting, we never have enough time. We could spend so much more time discussing all of these topics, but it is what it is and we're very grateful. We appreciate your time. Enjoy the rest of the afternoon.

Committee, very quickly, there are two things.

The subcommittee had a meeting on Monday at the conclusion of our meeting solely for the purpose of discussing future timetabling. The subcommittee report was circulated on Tuesday, I believe. We need to adopt that because it deals with what we're going to do on Monday, which is to review Bill S-3, which was sent to us from the House last Friday.

Madam Clerk, do we need a motion to adopt the subcommittee report?

The Clerk of the Committee (Ms. Hilary Jane Powell): We do.

The Chair: I see Richard's hand up.

Are you moving that we adopt the subcommittee report?

Good. Why don't we do a show of hands?

(Motion agreed to [*See Minutes of Proceedings*])

The Chair: That's great. The report is adopted.

On Monday, then, we will be doing clause-by-clause on Bill S-3 pursuant to the report. The agenda will be circulated almost immediately after this meeting is over, I suspect.

An email went out yesterday, which all of you should have received, requesting that any proposed amendments be sent in by yesterday at noon. None were received. Can I assume that means there are none?

● (1505)

Mr. Bob Zimmer: Could you ask that again? There is clearly a dissenting report.

The Chair: Is that on Bill S-3?

Mr. Bob Zimmer: I'm sorry. That's my mistake.

The Chair: On Monday we're going to be doing clause-by-clause on Bill S-3. There are only three clauses in it, but if there were any amendments, we had asked that they be circulated by yesterday so that people could have advance notice of them and that they could be translated.

None was received.

Mr. Greg McLean: We have no changes, Mr. Chair.

The Chair: All right. That's what I thought. I just wanted to make sure that everybody saw the emails. Okay. We're good there.

The only other thing is that next Friday we have witnesses who are going to be coming. The notice of the meeting will go out. One of the witnesses, Mr. Normand Goyette, from H2V Énergies, has responded by saying that he would like to attend but would like to bring his lawyer with him.

Now, I'm not sure if he misunderstood what the nature of the invitation was, but the rules do provide that he can bring his lawyer with him. It's just that the lawyer can't answer or ask any questions. I think he's probably just being overly cautious, or maybe he just wants him there for his own purposes. In any event, unless anybody has any strenuous objections, I'm going to tell him that's okay.

Go ahead, Mario.

[*Translation*]

Mr. Mario Simard: Mr. Chair, I have met with him. I could call him to clarify the objective of the testimony. I have no objection if he wants his lawyer to accompany him, but I can call to tell him that it is not necessary. Basically, he is free to do what he wants.

[*English*]

The Chair: Yes, I'll let him know that he's free to bring him, but if you want to have that conversation with him, tell him he doesn't need one. Let's put it that way.

Okay. We're good there.

Mr. Greg McLean: No, we're very curious now, Mr. Chair.

The Chair: I will admit that I am, too, Mr. McLean.

Mr. Paul Lefebvre: What does he know that we should know that he doesn't want to divulge? That's what I want to know.

Some hon. members: Oh, oh!

The Chair: People are going to really prepare for next Friday now.

I think it's just a misunderstanding, but we'll get it cleared up and we'll go ahead for next Friday when we get back to this. I think that's it. On Monday, it's Bill S-3, and then next Friday we'll get back to the study.

The only other thing is that I'm glad to see that Mr. Lloyd has his young child there. It brings a positive element to the meeting, Mr. Lloyd, so thank you.

On that note, I want to wish everybody a good day and a good weekend. We'll see you on Monday.

The meeting is adjourned.