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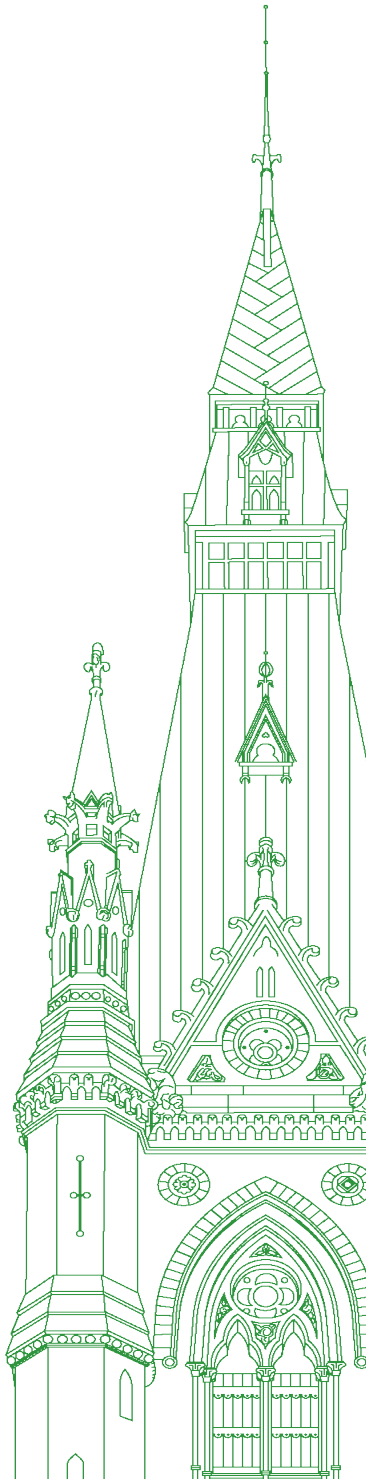

Chair: The Honourable Judy A. Sgro

Standing Committee on International Trade

Monday, May 10, 2021

● (1105)

[*English*]

The Chair (Hon. Judy A. Sgro (Humber River—Black Creek, Lib.)): I'm calling the meeting to order.

This is meeting number 30 of the House of Commons Standing Committee on International Trade.

Today's meetings is webcast and is taking place in a hybrid format pursuant to the House order of January 25, 2021. Pursuant to Standing Order 108 and a motion adopted by the committee on Friday, March 12, 2021, the committee will resume its study of Canada's exports of environmental and clean technology goods and services.

Before us today we have from AddÉnergie Technologies Inc., Travis Allan, vice-president, public affairs and general counsel. From Ballard Power Systems Inc., we have Nicolas Pocard, vice-president, marketing. From Opus One Solutions, we have Hari Suthan Subramaniam, chief strategic growth officer. Finally, from LNG Canada, we have Peter Zebedee, chief executive officer.

Mr. Allan, you have the floor please.

[*Translation*]

Mr. Travis Allan (Vice-President, Public Affairs and General Counsel, AddÉnergie Technologies Inc.): Good morning, everyone.

Madam Chair and committee members, thank you for the opportunity to participate in your study on Canadian green technology exports.

[*English*]

I know many of you saw me already a few weeks ago at the Special Committee on the Economic Relationship between Canada and the United States. I'm sorry to retread on some of the same territory, but I'll try to keep it interesting.

For those who don't know me and our company, AddÉnergie was founded by our current CEO, Louis Tremblay, in 2009, with a head office in Quebec City. It was the fruit of work that he did as a Université Laval student. Over the last decade, we have grown to be one of the largest EV charging networks and manufacturers in North America, with more than 200 employees. Our Shawinigan plant has produced over 40,000 charging stations for deployment across North America.

We are a company that proudly uses a very Canadian supply chain, with approximately 85% of expenses paid to Canadian suppliers. We've seen significant growth, especially in Canada, and now increasingly in the United States. That's important because the domestic market in Canada is likely not big enough to support the demand needed to build a globally competitive EV charging network and to be a manufacturing leader. That's why access to large, international markets like the United States and elsewhere is critical.

We've made some significant forays into the U.S. market, including deploying curbside charging stations across Los Angeles. We just announced last week that we're starting to deploy stations in all five boroughs of New York City in partnership with Con Edison, and we've also started deploying in the U.S. Midwest, starting in Cincinnati.

There is significantly more opportunity for us in the U.S. market. Recently, President Biden announced an investment plan for 500,000 charging stations to be deployed in the U.S. by 2030 to help support the American target of halving its greenhouse gas emissions by 2030, along with Canada's enhanced commitment to reduce its own emissions by that date. In order for the U.S. to be able to meet this target, it has a critical need to get quick access to the best EV charging networks, services and equipment. We believe that AddÉnergie can play a very important role in providing these services and equipment to the U.S. market.

That's why, in addition to growing Canadian domestic demand, we've already started making significant investments to expand our own production capacity in Quebec, including our network and R and D centre, and we'll also be significantly expanding our manufacturing square footage in Shawinigan.

At the same time, we are looking at a U.S. plant to help service the U.S. market. Ideally, much as other major manufacturers across North America that make clean technology equipment, we'd like to do that by adding complementary production lines so that we can get those to maximum efficiency in both Canada and the United States. That's the dream, and that's what other major companies like automakers tend to do with their production.

What we're facing right now is a major challenge with the likely implementation of buy America. Unlike our American competitors, to whom we give access to freely participate in Canadian federal procurement, we may not get the same access to the U.S. market, which would of course limit competition.

The possible impact of these challenges is that we may be required to duplicate our production lines, which would certainly be less efficient for the purchasers of EV charging stations. The second possible issue is that we may face significant uncertainty and delay in getting products to market because, depending on how buy America is implemented, it could have significant impacts, not just on the end assembly of clean technology goods but also on their supply chains, which can slow down things including certifications.

If this happens, it's certainly not going to be good for manufacturers of charging stations, but it also will really impact our ability to get this clean technology product to market in a fast way and to help meet those American timelines. I would argue that it's also not very good for the Canadian economy. Being forced to produce entirely in the United States doesn't allow us to leverage some of that great work we've done building supply lines here in Canada. When we're looking at our ability to expand, this is certainly a major point of questions and concerns that we're hoping to see some progress on.

We really appreciate the opportunity to be here today and to share our views on how we believe we can contribute to exporting Canada's clean environmental technologies.

● (1110)

[*Translation*]

Thank you. I look forward to answering any questions that you may have.

[*English*]

The Chair: Thank you very much, Mr. Allan.

Nicolas Pocard for Ballard Power Systems, please go ahead.

[*Translation*]

Mr. Nicolas Pocard (Vice-President Marketing , Ballard Power Systems Inc.): Thank you.

Good morning.

My name is Nicolas Pocard. I'm the vice-president of marketing for Ballard Power Systems.

[*English*]

Ballard is a company based in British Columbia. For the past four years, we have been developing clean zero-emission hydrogen and fuel-cell solutions. As a technology developer, we are bringing zero-emission engines to market. Today more than 3,500 buses and trucks are powered by Ballard technology globally.

From day one of its life, Ballard has been relying on the export market because of the lack of domestic markets. We're been relying solely on exporting our technology. As of today, over 98% of our revenue is from exports. We have many working in the U.S., Europe and China. Today we are seeing really a growing demand for technology as part of the efforts by different countries towards lowering carbon emissions and towards carbon neutrality. In the transportation sector, which has a significant impact on emissions, different alternatives are being deployed in order to reduce those emissions.

Hydrogen and fuel-cell technology is now being recognized as an important part of this effort towards decarbonization. Even in Canada, at the end of 2020 the federal government published a hydrogen strategy, done by NRCan, recognizing the key role of hydrogen in the decarbonization of our economy, especially for heavy-duty mobility. When looking at applications like buses, trucks, marine and trains, this is where hydrogen and fuel cells provide the most attractive path to decarbonization.

Today at Ballard we employ around 950 people, the majority at our headquarters and production engineering facility in Burnaby, British Columbia. In addition to that, we have probably around 80 people based in Europe, with some R and D and production facilities in Denmark. We have around 10 to 15 people in the U.S., with an R and D office in Bend, Oregon. We have around 15 people in China, in our Guangzhou office.

International growth has been absolutely paramount to the success of Ballard. We have been investing in that development and the export of our technology from the birth of the company. We have worked very closely with and would like to take the opportunity to thank the support we got from the network of trade commissioners worldwide where you're active—Japan, Korea, China, France, Austria, Germany, Denmark and Norway. We have worked very closely with that network. The trade commissioners have helped us to better understand the market conditions, have provided support at events that Ballard has organized by bringing in customers, organizing one-to-one meetings or introductions, and inviting us to events for our industry. I think that has been a really important part of our growth. Even today, we continue to leverage the network with the trade commissioners. We would really like to thank them for their support and for being very proactive and very professional and very knowledgeable, especially when it comes to clean mobility.

As was highlighted by the previous speaker, we are also facing now in many different jurisdictions local rules and regulations. The U.S. is one of our biggest markets. Buy America, as was mentioned earlier, is today threatening to really challenge our cross-production efforts. Today, as a new technology, our key focus is to drive down the cost. We need to be able to drive down the cost to use the local-global supply chain and be able to manufacture at scale. Most of our core technology is made in Burnaby, and we need to scale up. Having delocalized plants and smaller plants doesn't enable us to drive down the cost. It's an impediment to cost production. It's actually increasing the cost.

Requirements like buy America are forcing us to actually increase the cost of our product, which is slowing down the adoption of the technology. We see that not only in the U.S.

● (1115)

In China, there is very stringent regulation in terms of localization. The number of components that need to be produced in China is forcing us actually to enter joint ventures and to produce our product in China for China.

Now we're starting to see the same level of protection rising in Europe in order to have access to some of the programs of development. We need to be able to show that we are producing our products and technology in different geographies.

As we are trying to lower the cost to enable wider adoption of the technology, this comes as an impediment to that growth.

This just provides a bit of a perspective from Ballard. I thank the members of the committee. I would be very happy to answer your questions.

[*Translation*]

Feel free to ask any questions that you may have.

Thank you for your time today.

[*English*]

Thank you.

The Chair: Thank you very much, Mr. Pocard.

We'll move along to Opus One Solutions, with Mr. Subramaniam, please.

Evidently, he's still having difficulty.

The Clerk of the Committee (Ms. Christine Lafrance): We will have IT call Mr. Subramaniam.

The Chair: We will go on, then, to LNG Canada, with Mr. Peter Zebedee.

The floor is yours, sir.

Mr. Peter Zebedee (Chief Executive Officer, LNG Canada): Thank you very much, Madam Chair.

Members of the committee, thank you for inviting me to speak to you here today on behalf of LNG Canada on this important subject.

We fully support this committee's efforts to examine how the export of Canadian clean technologies and products can help shape and support a low-carbon future. I'm happy to talk to you this morning about how LNG Canada fits into that strategy, both here at home but also abroad.

As you know, LNG Canada is a joint venture with five international partners: Shell, Petronas, PetroChina, Mitsubishi and Kogas from Korea. While we here at LNG Canada are proudly Canadian and I myself am Canadian-born, -raised and -educated, we do indeed have a very global outlook.

To start with, we began with a very bold vision. That was to set the benchmark for economically, environmentally and socially responsible LNG development in Canada, working collaboratively with first nations, indigenous groups and local communities, non-governmental organizations and local, provincial and federal levels of government.

Our liquefied natural gas and export facility is now in its third year of construction in Kitimat, British Columbia, and is located on the traditional territory of the Haisla Nation. It represents the single largest private-sector investment in Canadian history, and it has already begun to benefit communities and provincial and national economies with meaningful, lasting employment and social investment. To date, the value of our awarded contracts and procurement in British Columbia alone is worth more than $3 billion.

Revenues from our project will start flowing to governments as we enter into production and are delivering low-carbon LNG to customers. These will reach tens of billions of dollars over the course of our 40-year life, and we are on track to deliver our first cargo by the middle of this decade.

LNG Canada will provide a security of supply for global LNG markets that rely on Canada's natural gas reserves to advance their economies and to reduce global GHG emissions, as natural gas replaces such higher-emitting sources of energy as coal. This is important in the context of commitments that Canada has made to reducing GHGs, while helping our international partners meet their own climate change commitments.

While we'll be the first major LNG company in Canada to export internationally, we're entering a highly competitive global market looking for low-carbon energy.

Our project is advantaged by access to low-carbon natural gas right here in British Columbia. We're located in a harbour that is ice-free year-round. It's at the end of the Douglas Channel in Kitimat, about 650 kilometres north of me here in Vancouver. Our shipping distance to north Asia is about 50% shorter than that from the U.S. Gulf of Mexico, and it avoids the Panama Canal.

Together with our EPC contractor, JGC Fluor, we designed a project to have the lowest carbon intensity of any large-scale LNG plant anywhere in the world, and the GHG emissions from our Kitimat operation will be lower than those from any facility. That's a full 35% lower than the world's best-performing facilities and 60% lower than the global weighted average for equivalent plants. This is all underpinned by our use of energy-efficient gas turbines and the latest methane mitigation technologies, and that's what is going to help us reach our low emissions standards.

LNG Canada will use B.C. natural gas that is produced with the highest standards and compressed using renewable energy from the B.C. hydro grid. A good example of putting these standards into practice is provided by Shell's Saturn gas plant. Located in northeastern British Columbia, it is fully electrified.

As I mentioned, natural gas is displacing coal for power use and production in cities with air pollution problems, where renewable resources are limited and where consistent energy supplies or firm power is required.

We know that future population growth and development around the world will require more energy with fewer CO2 emissions. To that end, LNG provides CO2 emissions 50% lower than those from coal. That's really the big reason that LNG is displacing coal in so many places and why this represents an opportunity for Canada, which has an abundance of lower-carbon natural gas.

● (1120)

Demand is indeed growing in places such as China, where natural gas is expected to almost triple by the year 2040. LNG from all sources, including ours, will make up 60% of China's demand for imported natural gas, and global LNG demand is expected to hit 700 million tonnes by the year 2040. According to Shell's latest market outlook report, that's up from 360 million tonnes in 2020, so it's almost double. Asia is expected to drive about 75% of this growth as LNG substitutes for higher-emissions energy sources, and that's going to tackle items like air quality concerns while at the same time meeting emissions targets.

Of course, this isn't to say that LNG will displace more carbon-intensive forms of energy all on its own. You've already heard how the clean-tech sector in Canada is an increasingly busy place with hundreds, if not thousands, of companies driving innovation and finding new export opportunities. We believe that LNG is but one tool in the low-carbon tool kit, and that tool kit obviously includes renewables. While natural gas complements renewables as a baseload power due to intermittencies in energy supply, it is not likely to displace it fully, nor is LNG going to slow the build-out of renewables in electricity sectors in countries such as China. Mostly that's due to pricing. Renewables in the long term are less expensive than natural gas and LNG.

As technologies continue to develop and as businesses, builders and homeowners turn to energy-saving efficiencies such as retrofits, energy requirements, in general, will change, and they may even decrease in certain scenarios. We're certainly starting to see those changes in our resource sectors. I already mentioned Shell's fully electrified plant in Groundbirch, B.C. The fact is that we are seeing innovation and advancements up and down the value chain. These are absolutely critical as our sector turns its focus to reaching carbon neutrality.

In the past year, and excitingly so, we've seen net-zero LNG shipments reaching ports in Asia and Europe. We're excited to be entering an environment where net zero can actually be achieved. I think this is critical, because creating space in the LNG marketplace going forward—our project has a 40-year lifespan—really means, for us, identifying those opportunities across the value chain upstream, at the point of production and indeed on the shipping routes.

Picking up on that, I'd like to point out another example that demonstrates how the LNG Canada project is creating momentum towards a lower-carbon future and at the same time creating local opportunities. HaiSea Marine is a local partnership formed between the Haisla Nation and north Vancouver-based Seaspan.

HaiSea Marine has a large contract with LNG Canada to build and operate the escort and harbour tugs required for our export facility in Kitimat. They are going to use battery-electric power and natural gas instead of diesel fuel, and they're going to form one of the greenest tug fleets ever assembled. They are designed by Canadian, Vancouver-based naval architects and marine engineers Robert Allan. These new escort and harbour tugs are expected to reduce carbon dioxide emissions by up to 10,000 tonnes per annum compared to their diesel-fuelled alternatives, with major reductions in other oxides and particulate matter as well.

In addition to creating local, long-term jobs that will benefit the Haisla and other nations on B.C.'s northern coast, HaiSea Marine really plugs into the full value-chain proposition I've talked about: lower-carbon Canadian natural gas; world-leading low emissions at our Kitimat export facility; advantageous export routes to international markets; and markets in countries that are focused on bridging to low-carbon energy sources, and ultimately to all ultra-low and zero-emitting sources.

Together with our partners and with support and encouragement from all levels of government, LNG Canada will play an important role in this energy transition.

Thank you very much. I'm happy to answer your questions.

● (1125)

The Chair: Thank you very much, sir.

Do we have Opus One Solutions functioning now, Madam Clerk?

Mr. Hari Suthan Subramaniam (Chief of Strategic Growth, Opus One Solutions): I believe we do, Madam Chair.

The Chair: There you are.

Please go ahead, sir.

Mr. Hari Suthan Subramaniam: Thank you so much, Madam Chair, members of the committee and my colleagues from industry. It's a great honour to be here to talk about how we may be able to take part and inform the discussion on Canada's export of environmental and clean technologies on goods and services.

I'll take a bit of a departure from my colleagues. I think I'm one of the only software companies to talk about software exports and what they mean.

My name is Hari Subramaniam, as Madam Chair has introduced me. I head up strategic growth and global sales for Opus One Solutions. We believe we are probably a good fit as a litmus test or a canary in the coal mine with respect to how we've been able to garner help from domestic support, from the government's policies and regulations, while at the same time we can give you a sense of the competitive landscape that we and other colleagues in the sector face.

As a quick snapshot, Opus One was Canadian-founded. We have two offices, Richmond Hill in Toronto and downtown Toronto. Hopefully, we will be moving out for more talent across the country. Opus One is one of the few companies that has been named four times to the top 100 clean-tech companies globally. We share that honour with CarbonCure in Nova Scotia.

We started to build our pilot technology in about 2016, really moving to commercialization in 2019-20. We have grown about 500% in employment, hitting well past about a hundred this year, and we've actually grown during COVID, or the global pandemic. That's the uniqueness of the sector that we're in. Overall on revenues we're at about 300% since about 2016, and we're one of the few leading companies from a software perspective to facilitate energy transition. Our customers tend to be utilities, whether they're privately owned or government-owned.

I should probably provide you with a sense of how we segment our customers and how we serve from Canada internationally.

One of our other unique attributes is that we've actually grown into about six to seven countries between 2020 and 2021. We've actually gone international and global during the global pandemic, and 90% of our staff are Canadian-based.

First, I'd love to thank the committee and the governments writ large for the policy framework and the funding associated that have really helped to drive-start our start-up nation, giving birth to companies like ours. We just happen to be in the clean-tech sector. One of the stats that I do not have, and I'm not sure if it's robustly there, is the split between hardware from clean tech; money that leaves us, whether it be renewable developers that are Canadian or are elsewhere; software; and then services in clean tech as an export quantity.

From a software perspective, I would think Canada is one of the biggest exporters of clean-technology software globally. How do we help that sector? That's probably why I'm here to share my thoughts.

I'll give a shout-out to a Canadian company that is a little less known, but pretty big here actually, called CGI out of Montreal. They're one of the largest clean-technology services firms globally. I think there's a lot of diamonds in the rough that perhaps through this process we can unearth.

I'll get to the two questions that, I think, were posed. One is, what is going well? I think we've built a great ecosystem for start-ups: the federal agencies, the incubators. We have a wonderful job done with the trade commissioners engaging in a meaningful but also a metric-driven manner to help Canadian companies export abroad. I think from ISED to SDTC to NRCan, they've done a fantastic job with IRAP in terms of how to construct funding or leveraging to help companies grow. I think EDC and BDC have done a good job from a venture cap perspective. I'll give credit to Diana Cartwright from the trade commission for really shaping that organization. We have definitely been blessed and have benefited from that.

There's some great funding with collaboration, the Canadian-Indian industrial partnership, the Canada-U.K. funding in terms of helping Canadian companies enter the market by collaborating with one of their own. I think they've been a big benefit. I would like to commend Amanda Wilson and Cynthia Handler,from the departmental side, for really leading that and paying attention to companies like ours and our growth.

A lot of MOUs that have been signed by the government in innovation have actually helped us, and the same thing with FedDev in terms of scaled and continued growth. However, having said all of that, which has built the ecosystem, one of the things I'd like to share is that I think we've done a great job on start-ups, but I think we haven't really looked holistically at the scale-up of companies. I think there are gaps in the scale-up aspect.

● (1130)

Opus One Solutions is no longer a start-up. We're a scale-up, so where do we go?

There are a couple of things to point out. Every jurisdiction in the world is revolving around clean tech. They want a sector to be grown there. They want taxes to be paid to their jurisdiction. What I would urge departments in the government to do is to actually take a competitive benchmarking. I personally don't think we do that well as a nation.

What I mean by that is that Germany and the U.K. are really pushing in tandem with companies in their jurisdictions to move globally—more, I would say, than we are. In terms of whether it be financing or giving funding to enter the market to do a pilot, I think that's critical for a lot of technologies. The majority of customers for our products or even my colleagues' prefer to have a case study or someone who has bought their product and tested it in their local market rather than having that done in a Toronto, Halifax or Vancouver. It doesn't carry as much weight. Everyone wants to know if you've done it in Illinois or Brazil, and so on and so forth. I think that's a big gap. That's missing.

The other one is in terms of financing or funding as you move towards profitability. I think most of EDC and our venture capital, whether they're government-backed or independent, have a tendency to try to want to deal, so we'd rarely invest in companies that have reached a valuation of $50 million-plus. We are one of the few companies that see, from a Canadian perspective, that there are not enough folks willing to bet on our own companies' growth because our valuation has gone up.

It's very much on start-up, not on scale-up. There we look at financing from other investors, which generally means that over time we will stop being a CCPC. I think that's something we should focus on. How do you ensure that there are more companies that continue to be CCPCs, that continue to apply for IP in Canada and are as Canadian as possible?

The other attribute I'd say that can be improved on is MOUs. Trade relationships are critical. As my colleague said, with buy America and buy Europe, how do we continue as a trading nation be in those discussions and help companies? There's also the fact that, in most of our agreements, we have a reliance on joint research and development. I think we should be cautious in pushing that. As a private entity, I would like to do customization of research to sell my product into a market of choice. I do not want to be beholden to doing research with a third party if there's an agreement or funding attached to that. I think uncoupling some of that would help us move into markets faster.

One of the other things I would also urge the committee to look at is that the goal of the Paris accord is a good one, but if we are to drive clean-tech companies abroad, I would rather that, as a nation, we would have objectives and goals that are audacious. An example of that would be that some of our provinces were chasing solar manufacturing or renewable manufacturing about a decade ago, 15 years after Germany had defined it. Germany defined it because they had an objective or a goal well before anybody else did, and by virtue of that, entrepreneurs came to that segment.

The U.K. and France, for example, have said they will not have a single combustion vehicle on their road by 2050. It's an audacious goal. What it means is that they're starting to think about what new industries have to be born to serve such a market if they're serious about that goal. I would urge Canadians and Canada to have an objective that we're driving towards.

I shall not talk more about buy America, it is of concern for us, especially with cybersecurity and security as an issue as well. I think it was covered by some of my colleagues. Really, what I would ask is to rethink some of our government funding and protocols to play more holistic role in terms of enhancing our growth in exports and paying taxes to Canada and employment in Canada.

Thank you.

● (1135)

The Chair: Thank you very much, sir.

Before I go on to our speakers, I need the committee to approve a budget in the amount of $1,750 for headsets and phone lines. Are there any objections to that?

Not seeing any objections, I call on Mrs. Gray, please, for six minutes.

Mrs. Tracy Gray (Kelowna—Lake Country, CPC): Thank you, Madam Chair.

Thank you to all the speakers for being here today. My first questions are for Mr. Zebedee.

Thank you for the information that you provided to this committee about how significant LNG is, not only to my home province of B.C. and Canada, but also to the world as a tool to reduce GHG emissions. We heard from another witness earlier on in this study that because of article 6 of the Paris Agreement, which hasn't been finalized yet, countries' work to reduce emissions internationally is not counted towards their domestic reductions.

Obviously, exporting LNG could play a huge role in reducing emissions, so would you say that getting article 6 of the Paris Agreement finalized should be a priority of Canada's?

Mr. Peter Zebedee: Thanks very much, Ms. Gray.

I absolutely would suggest that. Canada's leadership to establish a credible regime based on not only environmental integrity but a level playing field, and to ensure those credits are recognized and acknowledged should absolutely be a priority of this government.

Mrs. Tracy Gray: That's great. Thank you.

What are some of the biggest non-tariff barriers that your sector is facing when it comes to exporting? We heard from a previous witness on this study that the uncertainty and cancellation of pipelines is a significant one.

Would you agree with that, and are there other non-tariff barriers that you see?

Mr. Peter Zebedee: Uncertainty in the regulatory regime certainly is one of them. We want to ensure that we have a competitive capital cost to construction. That's one of the barriers on which this government has helped support us within the construction of phase one pipelines, and as you know, Coastal GasLink is a single-source gas pipeline into our Kitimat facility. Hopefully it won't be a barrier for us going forward.

Looking at future growth potential, the biggest opportunities are capital cost of production, the certainty in the regulatory environment as it relates to GHG emissions, and then ensuring we have a competitive position within the global portfolios of our five joint venture partners.

Mrs. Tracy Gray: That's great. Thank you.

What's the job potential in this sector if LNG Canada has a stable growth environment? How many potential jobs do you see spurred by this growth in Canada as it develops?

Mr. Peter Zebedee: I can give you an example of where we're at now.

In Kitimat alone, we have just over 3,000 trade craft. At the peak of our construction, which will take place in the years 2022 and 2023, we're looking at up to 7,500 full-time equivalents here in Canada just for construction in Kitimat.

We're looking at just over 500 long-term jobs to support phase one of our operation, and as we look at future investment in phase two, it comes close to double that, so it's around 1,000 long-term positions to support that operation.

● (1140)

Mrs. Tracy Gray: Thank you.

What are the other large LNG-producing countries? Would you say that Canadian LNG is in a position to be extracted and exported in a more environmentally and I believe you also used the words "socially responsible" way? In your view, how does that work on a global scale?

Mr. Peter Zebedee: We certainly have a very compelling value proposition from all those dimensions.

As I mentioned, our facility will be globally leading in terms of the lowest emissions anywhere in the world, more than 30% better than the next best—so it's by a long margin—and 60% better than the global average. That's going to prove to be a competitive advantage in a world that's clearly changing its societal expectations. There will be value to that.

Our big global competitors in the LNG business are Qatar, which has recently announced a massive expansion to their operations, and Australia is another large producing LNG nation.

Mrs. Tracy Gray: Thank you.

I have one last question here.

Peter Findlay, at the Oxford Institute for Energy Studies, stated that it's strange that Canada "is frustrating, if not undermining, its own LNG prospects."

In your view, what changes need to be made at the federal level to ensure increased exports of LNG?

Mr. Peter Zebedee: Ms. Gray, I will go back to the first question you asked me, which was around article 6 of the Paris Agreement. We need to create a level playing field and a regulatory regime that recognizes the value of carbon offsets and trading. Couple that with offset-type solutions like nature-based solutions so that we have a robust and level playing field to compete in international markets.

The Chair: Ms. Gray, you have time for a short question.

Mrs. Tracy Gray: Thank you very much.

Lastly, this might not affect your industry, but do you see buy America affecting some of the subsidiary companies that you might do business with?

Mr. Peter Zebedee: I can't say that it has hit my radar screen in any significant way. We have a global supply chain. Most of our supply chain is focused on providers here in Canada but indeed reaches out across the world, America being number two, but it hasn't been something that's been flagged to my attention.

The Chair: Thank you very much.

Mr. Dhaliwal, please.

Mr. Sukh Dhaliwal (Surrey—Newton, Lib.): Thank you, Madam Chair.

I want to thank all the presenters for the leadership their companies have shown when it comes to clean technology and services. My first question will go to Mr. Subramaniam.

Mr. Subramaniam, you mentioned that you are going to expand across Canada. British Columbia has beautiful weather and wonderful people, and more important when it comes to environment technologies, it is a leader in those technologies. We have LNG, Ballard and many more to come.

How might you take advantage of what British Columbia has to offer? Do you see prospects for your company here?

Mr. Hari Suthan Subramaniam: Thank you, Mr. Dhaliwal.

From a software perspective, we're a people-based business so talent is one of our biggest drivers. If I may speak openly and honestly, Toronto is a lovely city, but its growth in software and talent has ensured—in a good way, I think, for the federation—that we look at the talent pool across the federation. Vancouver is pretty good from a competitiveness perspective but also with respect to the talent pools coming out of universities and coming into the country through immigration.

We're looking at Vancouver but we're also looking at Prince Rupert and Victoria, while also looking at eastern Canada and Alberta as a talent base from a software perspective. Given the pandemic that has driven us to a virtual environment, the beautiful thing about Canadian companies like ours is that we can go to our own nation to find the best talent, irrespective of province or physical location.

Mr. Sukh Dhaliwal: Thank you.

My next question goes to Mr. Zebedee of LNG.

Mr. Zebedee, British Columbia is a net exporter of energy and exports the majority of its natural gas to the U.S. You had mentioned that with LNG, we will be open to markets in Asia. Could you please speak about some of those markets? In particular, you mentioned Australia is one of our competitors. How would we be able to take advantage of those emerging economies when it comes to their needs for energy?

Also, could you touch on the environmental impacts that this will have on those markets and locally?

● (1145)

Mr. Peter Zebedee: I think the growth in the LNG market, as I discussed at the start, is significant. We have a market today that has a demand for about 360 million tonnes a year. By 2040, that's going to increase to 700 million tonnes a year globally, with the majority of that demand coming from Asia. You'll also note that many of my joint venture partners are headquartered in Asia and will be bringing the volumes of Canadian natural gas into their respective global portfolios.

I think the demand is robust. We are structurally advantaged relative to our nearest competitor here in the U.S. In terms of sailing distance, we are geographically advantaged. It's a 10-day sail from Kitimat into Tokyo Bay to deliver gas into Japan, versus 25 days out of the U.S. gulf coast. I think there's a structural advantage. I've talked about the advantages in terms of our GHG emissions.

Fundamentally, it's really important that LNG is displacing these more carbon-intensive sources of energy, such as coal, but it's helping to improve air quality in cities like Beijing and Shanghai. In China alone, over 1.6 million people a year die from health issues due to poor air quality. By helping to displace those higher-emitting sources such as coal, LNG is going to help clean up the skies and clean up the air in Asia.

Mr. Sukh Dhaliwal: You mentioned the private sector investment. When it comes to private sector investment, in budget 2021, the government announced one billion dollars over five years to help draw those private sector investments for Canadian clean technology projects. How do you think the government should work with industry to attract more private investment in the clean-tech sector?

Mr. Peter Zebedee: I think we should continue to encourage opportunities for innovation for clean Canadian technology. One key consideration would be to spur and drive innovation by leveraging and directing the revenues from the carbon tax back into the sector.

Mr. Sukh Dhaliwal: My next question is for Ballard Power Systems.

Mr. Pocard, you mentioned that this is going to help, particularly the buses and trucks. You have already expanded into China and I see opportunities in countries like India where there are millions of trucks and buses. You said the trade commissioners are helping you.

Are you exploring India? How is the trade commissioner helping you move into that market?

Mr. Nicolas Pocard: Absolutely, this is something we are starting to look into. It's very early days.

I think the ecosystem is still at its beginning. What I mean by ecosystem is the production of the hydrogen, which is necessary as a fuel. However, we have seen in the past year or 18 months a lot of inquiries coming from India. We are starting discussions with large industrial groups in India, which are considering hydrogen fuel cells as a path to decarbonization.

We need to understand the market requirements better. We need to understand how our technology can be applied in India and we need to get the best partners, which will enable us to access the market and also to scale up. I think it's very important. If we want to serve the Indian market, we need to find a local industrial partner that will help us bring our technology to market.

For that, we'll probably be using the network of the trade commissioners to help us vet and provide some guidelines about some of the companies that are approaching us, but also maybe to find local resources because, at some stage, we'll have to invest in having our own Ballard people there to be able to assess opportunities and engage our partners. This is where the service of the trade commissioners can help us.

● (1150)

The Chair: Thank you very much, Mr. Pocard.

We will move on to Monsieur Savard-Tremblay, please.

[*Translation*]

Mr. Simon-Pierre Savard-Tremblay (Saint-Hyacinthe—Bagot, BQ): Thank you.

I have a question for Mr. Allan from AddÉnergie Technologies. I want to thank him for being here. I actually want to thank all the witnesses for their presentations today.

My question is quite broad. If anyone wants to expand on Mr. Allan's response, please feel free to do so.

Three years ago, Innovation, Science and Economic Development Canada's clean technology economic strategy table set a goal of making the clean technology sector one of Canada's top five export sectors by 2025. This is the focus of our current study. The clock is ticking. We have about three and a half years to go before the deadline.

Do you think that this ambitious goal is still achievable? Is it still realistic to think that the goal can be achieved by 2025?

Anyone who wishes to respond is welcome to do so.

[*English*]

Mr. Travis Allan: I'll take a first crack.

It is a really big challenge to compete in these spaces because there is so much focus in Europe, Asia and the United States to be leaders in clean technology. There is a growing consensus that this is where the market is moving, so countries are really putting their best innovation and their best funding programs together and doing everything they can to try to support growth in this sector.

I think we have some really great advantages in Canada. We have an excellent labour force. We have great talent coast to coast. We have made some very early and important investments to support our domestic industry. Supporting the domestic industry is really the first step to building a global exporter because you need a home market to be able to grow your proof points and actually export that overseas.

Again, I think we've done some really important first steps. Everything is going to come down to the next three to five years. The real question is going to be whether we can make sure we have the market access that our companies need. Are we doing everything at home to continue to expand those domestic markets?

I'll pick up on a comment earlier about making sure our procurement is figured out and making sure that our tax structures make sense as companies grow from start-up to scale-up, as Mr. Subramaniam said. These are going to be the real questions. If we can answer them well and if we can deliver, I think we have a real shot, but it's not going to be easy. There is a lot of competition.

[*Translation*]

Mr. Simon-Pierre Savard-Tremblay: Is this really feasible if the American market closes even more, or is opening up, obtaining an exemption for Canadian and Quebec green products, a condition for achieving this?

[*English*]

Mr. Travis Allan: The question of what happens if the United States chooses to keep out competitors is a really good one. I think every time we deploy a station, we are also still getting benefits in our head office, because we run the network out of Quebec City, so all of the software and firmware, the R and D work, is still happening in Canada. Even if we produce part of our product in the United States, we're still getting really important benefits for Canada. Obviously they would be even better if we could manufacture both in Canada and the United States. There are still benefits even if we're not able to get an exemption, but I think we should really try.

Whether we've done everything we can to get an exemption, I think, is still an open question. The real push on buy America started with President Biden announcing some of these big, ambitious investments that he's going to make, so it is a relatively new conversation.

My hope is that we will see enhanced work by the Canadian government and Canadian business working together. In previous trade challenges, I think there's been some really great work done circling the wagons and getting collaborative discussions happening at the CEO level and looking to our industry associations and our American partners. I think there are some real opportunities there if we can get together and work on this.

● (1155)

Mr. Hari Suthan Subramaniam: I think I'd echo what Travis was saying in terms of seeing the trade commissioners already taking the pulse for us in terms of what we're hearing from our U.S. colleagues and the U.S. market.

At this present time, at least from a software perspective, I think the requirement is very much on national security. To Travis's point, where is it hosted? To date, they have not said, “Is it hosted in Canada? Is it hosted stateside?” and it doesn't seem to be an issue.

We as a company are prepared. As we work with a majority of the tech firms, it's easy to host the data if data becomes a critical issue from a national security perspective, but we don't think from a software.... From the Biden administration, I think there seems to be more focus on hardware and usually building materials, which we saw before in the former administration.

[*Translation*]

Mr. Simon-Pierre Savard-Tremblay: Thank you.

Since certain subtleties can't be described in the short amount of time available, I'll ask you to provide a rough summary of the situation. In terms of competition, we know that the Americans also have their own companies in this field and many of them are located in California. Our SMEs operate in a different way and in certain sectors, whereas the American companies operate based on a different expertise.

Can you tell us where we can find Canadian and Quebec expertise as well as American expertise?

Mr. Nicolas Pocard: I'll use hydrogen as an example. At Ballard Power Systems, we're working on hydrogen fuel cells. I think that Canada's expertise in this area is really unique, even compared to the United States. We have American competitors. However, Canada has always been at the forefront of hydrogen and fuel cell technology development.

We currently have an advantage, but it's under threat. Major investments in innovation and research pose a threat. The United States Department of Energy, the European Union and the Chinese government, in particular, are investing heavily in technology development and intellectual property in their jurisdictions. That's one of our current concerns. In some cases, we've had to relocate some of the research to obtain the research funding needed to develop the technology over the long term.

I think that we must continue to invest in Canadian technology, in Canada, to protect and develop the intellectual property that has made Canada a leader in the hydrogen and fuel cell field. This is critical if we want to maintain that leadership, which is really under threat right now.

Mr. Simon-Pierre Savard-Tremblay: Thank you for your response.

So, we're talking about—

[*English*]

The Chair: Thank you very much.

[*Translation*]

Mr. Simon-Pierre Savard-Tremblay: We'll talk about this later.

[*English*]

The Chair: We'll go on to Ms. Ashton for six minutes please.

Welcome to the committee today.

Ms. Niki Ashton (Churchill—Keewatinook Aski, NDP): Thank you, Madam Chair.

First of all, I would like to thank all of the witnesses. I certainly appreciate the urgency that many of you have shared to get this right. There's no question that the climate emergency is one of the biggest crises we face. There's so much we need to do to be able to take on that crisis and, in large part, the use of clean technology. Clearly, we've heard—not just today, but every day—the way in which Canada is, frankly, not just not part of the solution in so many ways, but also part of the problem.

For my first question, I want to go to LNG Canada. Certainly there's no question that in order to be able to deal with the climate crisis, we have to be certain that our approach is rooted in respecting indigenous rights and respecting indigenous communities. Many of us were appalled to see the attack on Wet'suwet'en lands and women last year in the face of your proposed development.

Considering that in order to deal with the climate crisis we need to respect indigenous communities, what do you have to say about what took place just a few months ago?

Mr. Peter Zebedee: Thank you very much, Ms. Ashton.

We want to acknowledge that we actually have the support of elected and hereditary leadership spanning 20 first nations along the entirety of the pipeline route and that of many of the other communities and individuals engaged in the project since its inception.

We look forward to building a project that adds significant benefits for indigenous communities, for British Columbians and for all Canadians. We also, of course, respect people's right to conduct peaceful protests. We think we have a strong argument for LNG as a lower-carbon fuel. That's going to help countries—not only Canada—transition away from coal-based energy. We want to encourage people to learn about LNG and its role in the energy transition.

We see a great deal of support for our project. The more that people understand about LNG, the more support we get. We recognize that we're not going to be able to change everyone's mind here. That's okay. People have the right to disagree, but I think it's telling that every level of government with which we interface has suggested and continues to support the project. This includes first nations and it includes government formed by different political parties, because they indeed see all of the benefits that this project brings.

● (1200)

Ms. Niki Ashton: There's no question that government has a critical role to play when it comes to respecting the constitutional rights of indigenous peoples. I would say that many of us are deeply concerned about the way in which Wet'suwet'en voices were not respected. We are currently dealing with the UN Declaration on the Rights of Indigenous Peoples, which is a framework, frankly, for reconciliation. Part of that is free, prior and informed consent. For us, it's very critical that this be followed.

I want to ask some of our other witnesses, as well, about what Canada needs to get right, right now.

Mr. Subramaniam, your presentation touched on the role of innovation and making sure we reach climate targets that will realistically slow global warming. You have worked on smart grid systems, on electrifying transport. What do you think the government could do to prioritize clean exports? Where are there barriers?

What can we be doing to make Canada a climate champion on the international stage?

Mr. Hari Suthan Subramaniam: I would say a couple of things. One is to have a bit more holistic look from inside the government as we engage with companies, again focusing on more scale-up. Can the hand of government come in broadly to help our companies that are starting to scale up to move internationally?

One thing I would re-echo, which I think my colleagues would share, is the ability to look at funding and financing as a way to help companies enter a market. The trade commissioner service and the others are fantastic at making their connections and the networks, and we can definitely drive to get the deals ourselves, but what makes it easier is if you come together and say, “Let us ensure that we get into that market”. We find that our European colleagues are doing a much better job from a government perspective in really pushing their companies to enter such markets.

We've done a great job, but that doesn't mean we can sit on our laurels. I will say we need to competitively benchmark what others are doing and ensure that we do the same amount of support for our companies so we can be leaders globally, while at the same time—a couple of my colleagues shared this—we look at and create a domestic market.

There is a little bit of a mismatch, I would say, Madam Ashton, in that we look at domestic policy and domestic funding as being a bit aloof from helping companies to go international. The Americans, as we talked about, are linking it together. I'm not saying we need a buy Canada framework, but there are different avenues by which we can ensure Canadian companies do prosper while keeping trade regulations open for international companies to compete with us at home.

Ms. Niki Ashton: Thank you.

I would say that I, for one, do support a buy Canada framework. There is much to be gained, and I agree with you that there is so much work to be done here within our own country in prioritizing the work that Canadian researchers and companies are already undertaking.

Because buy America has come up quite a bit, I want to ask AddÉnergie and Ballard if you could make known to this committee if you think Canada should be exempt from the buy America policy.

● (1205)

The Chair: Give short answers, please.

Mr. Travis Allan: That would be our preferred outcome, certainly. We think it gives the best products to the U.S. market, and we really hope there is a way to come to some sort of agreement for an exemption.

Mr. Nicolas Pocard: Absolutely, I support that. Our supply chain is so integrated between the U.S. and Canada that we really need to support that exemption.

The Chair: Thank you very much.

We will go on to Mr. Aboultaif for five minutes, please.

Mr. Ziad Aboultaif (Edmonton Manning, CPC): Thank you, Madam Chair.

Thanks to the witnesses. We have four companies in front of us. It seems they're mostly net exporters.

I believe that, if you can sell your product domestically, you should be able to sell it internationally, and it takes both the private sector and the government to be able to set the competitive benchmark, as Mr. Subramaniam has mentioned.

I'm interested in knowing what the government can do to help on a scale-up, first of all. On start-ups we could probably do okay, but a scale-up is a different game altogether.

Second, it is common knowledge that to become competitive, on the government side, you need less red tape. You need a better taxation policy. You need better programs in order to be able to upgrade when you need it for your equipment and your ability, so, Mr. Subramaniam, what are we lacking in order to be able to set the competitive benchmark?

Mr. Hari Suthan Subramaniam: First would be a competitive benchmark from government, policy to policy. I know it's ever-evolving, but especially if we look at post-COVID, apart from stimulus, what are each of the countries doing to help their companies in the sector grow? That's one benchmark.

The second benchmark is around financing. I know there's a rebirth of the Canadian Commercial Corporation, which looks at how to get our companies very close to governments that are spending. That should be benchmarked in terms of federal government instruments, whether it be through their own bank, like EDC-BDC, or leveraged companies. How do we benchmark that against other competitors, the export development bank type of competitors?

I'm looking at both of them.

The third thing that is really hard to benchmark, which you're alluding to, is around our own culture of innovation as a nation. We are, if I may say so, a nation of cruise control. We like what we have, so why disturb it when things are going so well? Unfortunately, with the global energy transition, some of us have been in this sector for a couple of decades waiting for what we have seen happen today. I'll be honest. It's actually moving at a much faster pace than I thought, whether it be big companies or small companies, but also with the amount of capital that is being unleashed in terms of energy transition and decarbonization.

Therefore, this is the question for a nation like Canada and members of Parliament like yourselves: If the wave is already here, how do we ensure that we build the right surfboard for our companies and our people and then actually ride that wave all the way through? It's not going to be a blip. We think it's going to be at least the next 25 years.

Competitive benchmarks are one thing. Working together is another thing. What I would say to you as members of Parliament is that Germany has employed this through multiple government transitions. All the parties have always agreed on what the core thing is for economic development and have stuck to it. That would be one of my asks. On the key fundamentals, if it is going to be greenhouse gases and climate change, can we all align to ensure that there's a consistent wave forward so that we can crest this from a company perspective, but also a people perspective?

Mr. Ziad Aboultaif: Thank you.

In 2016, I asked a question at the finance committee about how competitive we are in Canada compared with Germany and compared with the United States, and the numbers are horrible. The numbers are scary. We are down on a scale of 25% to 30%. That is very concerning, because you touched on the culture. I was an exporter myself before politics and I know that you need a cocktail of it all in order to be able to provide a competitive environment for our businesses.

As I said, again, if you can't sell it locally, you're going to have a hard time selling it internationally. That's where, if we're not competitive locally, we can open the door for competition from outside to come and sell products here. In the area of the green revolution and everything going toward that, I'm concerned and I'd like to hear from you one more time what the government role is going to be in order to be able to enhance that.

● (1210)

The Chair: I'm sorry. That was a long question, so we'll have to get a brief answer.

Mr. Hari Suthan Subramaniam: A strategic plan that looks at a time frame of two to three years is needed if our internal goal is to create jobs within the sectors, and then it's literally asking the sector what it needs to succeed and ensuring we do it.

Thank you.

Mr. Ziad Aboultaif: Thank you.

The Chair: Thank you very much.

We'll go on to Mr. Sarai, for five minutes, please.

Mr. Randeep Sarai (Surrey Centre, Lib.): Thank you, Chair, and thank you, witnesses.

I'll first go to Ballard Power, which is local here in British Columbia and which I've seen grow and go through challenging times but still be there and be resilient.

Could you expand on what role your industry, the fuel-cell industry, can play in the green recovery that this government wants, going forward?

Mr. Nicolas Pocard: Yes. Thank you very much for your question.

We have the objective to be carbon-neutral by 2050. If you look at what the key contributors are to emissions today, the transportation sector, for example, represents close to 25% of emissions here in Canada, and in some countries, it's even higher. When you look at how we're going to get there, when you look at decarbonization, heavy-duty mobility like buses, trucks, rail and trains, hydrogen fuel cells really bring a unique solution.

In Canada, we have the opportunity to really be able to develop and produce this technology. This is an economic opportunity. At Ballard, we have been growing really quickly in the last couple of years. When I joined the company back in 2012, we were only 300 employees; now we are more than 900. The majority of those jobs, which are based in British Columbia, have grown in the past 12 to 18 months. At the moment, we still have 50 positions open. In phasing in the recovery on green and sustainable technology to enable decarbonization and meet our objective of 2050, that will also help in the development of the Canadian economy.

Mr. Randeep Sarai: In budget 2021 there has been $1 billion announced over five years to help draw private sector investment for Canadian clean-tech projects.

Do you think the government could do more to work with industry to attract more private sector in the clean-tech sector?

Mr. Nicolas Pocard: I think so, and then there also needs to be some clear.... We don't really have any domestic market for us today so it is all exports. I think seeing the development of a domestic market will help and this is done by really helping the deployment of zero-emission fuel cell vehicles, especially for buses and trucks.

We see some money coming. There are some really good announcements that have been done by Infrastructure Canada in order to deploy zero-emission buses on the transit side, so I think we are seeing on the transit side really good progress, which will lead to the deployment of zero-emission and fuel cell buses across Canada.

I think on the truck side there is more to be done. How are we going to help the truck industry to green up? How are we going to help to put more zero-emission trucks on the road in Canada, using Canadian technology? This can be done by zero-emission mandates in some cases, or at least emission reductions on the truck sector like we have in Europe, as we have in California and as we have in China.

Mr. Randeep Sarai: Do you think the new reduction in corporate taxes that are proposed for clean-tech sectors will help foster or grow these industries, particularly in the truck industry, something that is actually pretty important to my constituents and I, with Surrey being a big logistical hub.

How can the government help spawn or spur on more growth in this clean-tech sector for heavy equipment like trucks?

Mr. Nicolas Pocard: Absolutely. Any incentive that will force users or fleet operators, the big distribution centres, to switch to cleaner trucks is very important. They have some examples in California. There are examples in other parts of the world where incentives, as well as a measure of some regulations, will help that transition and really incentivize large fleet operators to look at adding penalties to diesel trucks.

● (1215)

Mr. Randeep Sarai: Thank you.

Mr. Subramanian, you have said that EDC and BDC have helped foster growth in clean tech, and scaling up is a big challenge.

Can you give us some suggestions? How have EDC and BDC helped, and how can they help further to scale up Canadian businesses in the context of—

The Chair: Could we have a brief answer, sir?

Mr. Hari Suthan Subramaniam: Yes, I think it's twofold. One would be that I think there is extra financing available, but ultimately they are a bank. I think, moving forward, what would be a great discourse is the flexibility that BDC and EDC should offer that other traditional commercial banks wouldn't. I think that's one way.

Second is venture capital. They are both still looking at a small start-up style seed funding. I think there is a little bit of hesitation in terms of betting on, let's say, Canadian companies that are *x* percentage and above, so I think they should be bold. They should bet on our companies that are going to hit $100 million.

The Chair: Thank you very much.

We will move on to Monsieur Savard-Tremblay, for two and a half minutes, please.

[*Translation*]

Mr. Simon-Pierre Savard-Tremblay: Thank you, Madam Chair.

We were talking earlier about Canadian expertise compared to American expertise.

I would like more time to define the American expertise, if you could respond.

How do American companies fill a niche that differs from ours?

Also, given the specific nature of Quebec, how is our niche authentic compared to theirs?

[*English*]

Mr. Travis Allan: Just to confirm, was that for me?

[*Translation*]

Mr. Simon-Pierre Savard-Tremblay: If you want to respond, go ahead.

[*English*]

Mr. Travis Allan: Perfect. I'll start, as a Quebec business.

We have incredibly strong clean energy, which we're already exporting to the United States. It's a huge strategic advantage. We have very strong metals and minerals that are critical to the battery supply chain, but they're also really important for any manufactured equipment such as charging stations.

We have clean production of things like aluminum and other metals and minerals, which is really helpful if you're looking at the full life cycle of greenhouse gas emissions.

We have very strong talent, both homegrown and also new Canadians who bring their own expertise, and having that open market in a place where people love to come to work is really helpful. We have a software R and D team in Montreal, for example.

Then I would say that some provinces, notably Quebec and B.C., have done a really good job of starting to green their own fleets and looking at procurement as a way of supporting homegrown businesses. We honestly can't do enough of that. It's so helpful.

Maybe I'll stop there in case others have answers.

[*Translation*]

Mr. Simon-Pierre Savard-Tremblay: Please do. If other people want to comment based on their expertise, that would certainly be helpful.

Mr. Nicolas Pocard: I think that, in the electromobility field—

[*English*]

Mr. Hari Suthan Subramaniam: Just to add to what Travis said, I think one of the biggest competitive advantages we have is that a majority of the provinces have hydroelectricity. I think it's a huge driver for electrification. I know that's not part of the whole federation but the provinces that are blessed with it should be innovators in driving it. This will catapult specific industries to those provinces. I think Quebec has done a great job of that.

Mr. Peter Zebedee: I would second that comment.

The Chair: Thank you all very much.

We'll go on to Mr. MacGregor for two and a half minutes, please.

Mr. Alistair MacGregor (Cowichan—Malahat—Langford, NDP): Thank you so much, Madam Chair.

Thank you to all of our witnesses for appearing today.

I probably only have room for one question here so I'll go to LNG Canada. I think you very clearly explained LNG's importance in markets like Asia to replace, for example, coal-fired power plants, given that coal, arguably and measurably, is a much dirtier fuel and emits much more greenhouse gas.

What I wanted to know, though, is this: When Canada is out on the market trying to promote its LNG facilities and resources, do importers ever express concerns about methane leakage from our well sites? Is there any concern about whether Canada is doing enough to address this problem? How much does escaped methane contribute to our overall greenhouse gas emissions? How well is Canada doing in addressing this problem vis-à-vis what some of our major competitors, such as Australia and Russia, are doing and so on?

● (1220)

Mr. Peter Zebedee: Thanks, Mr. MacGregor.

Both the Canadian and the British Columbian governments have introduced regulations regarding methane emissions that put Canada at the forefront of efforts to reduce GHGs from oil and gas production. The B.C. government has a methane emission reduction target of 45% by 2025, relative to 2014 levels, and the Government of Canada has set an equivalent reduction target of between 40% and 45% by 2025, relative to 2012 levels.

I'll give you an example. One of LNG Canada's joint venture partners, Shell, announced a target to maintain methane emissions intensity by below 0.2% of total production by 2025. That's in line with the global standards set out by the oil and gas climate initiative, which has a target of 0.25% and a goal of 0.2% by its members.

I think we now have some tangible proof points in industry. I mentioned the electrification of Shell's Groundbirch plants. I know that among all five of my joint venture partners, the same initiative is being looked at well into the upstream. I would say we have a world-class framework. We have producers in our upstream committed to doing that. I think our performance overall is also leading, relative to other gas-producing nations.

Mr. Alistair MacGregor: Thank you.

The Chair: We will hear from Mr. Hoback for five minutes, please.

Mr. Randy Hoback (Prince Albert, CPC): Thank you, Chair.

Thank you, witnesses, for being here this morning.

I'll start off with you, Mr. Allan. We talk about buy America. Other than the U.S., are you seeing any countries starting to go down this path of having their own “buy domestic” programs that we should be aware of and that you would like to have market access to?

Mr. Travis Allan: Thank you for the question.

Our focus right now is really on exporting to the U.S. market, so that's the one I'm most knowledgeable about. However, to echo some of the earlier comments, we are certainly seeing a growing focus on this in other places in Asia and Europe. I think this will be a concern for Canadian exports.

Mr. Randy Hoback: Mr. Pocard, what would you say?

Mr. Nicolas Pocard: Yes, I absolutely agree. We are seeing that in China. There's a policy in China on fuel cell technology, really driven towards localization. There are rules in place. The numbers...every year, more and more components need to be produced in China with Chinese technology. Yes, we will be studying that. It is growing and starting to be a barrier for us to export to China.

Mr. Randy Hoback: Is that something Canada should be raising at the WTO in regard to China?

Mr. Nicolas Pocard: Absolutely, that's something that can be discussed, to see how we can make those barriers less constraining, both for the Canadian technology sector, which has been investing for a long time in developing that technology, and for China, to achieve its emission reduction goals.

Mr. Randy Hoback: Mr. Allan, you talked about having a shortage of supply for components that go into the making of your charging stations. Do you see the stimulus happening in the U.S. and other parts of the world making that even a bigger problem? I think that's what you were saying.

Also, what kinds of solutions do you have to ensure that Canadian raw resources actually go to Canadian companies?

Mr. Travis Allan: The supply chain challenges, certainly during COVID, were real for many components, particularly with respect to semiconductors, which saw a number of global shortages. Our team has been able to manage this issue so far.

I mentioned components and subcomponents. One of the interesting features of buy America is that it can apply at the assembly level or it can apply one or two levels down. Our hope is to be able to continue to use our heavily Canadian supply chain to produce for the U.S. market, but depending on the way it's implemented, it could make a very big difference. It could certainly impact the Canadian supply chain, which would not be great for our economy.

Mr. Randy Hoback: Mr. Pocard, you use a lot of rare earth elements in your battery construction. Are there things we should be doing to safeguard Canadian resources to make sure that Canadian companies get those resources?

Mr. Nicolas Pocard: Actually a fuel cell doesn't use a rare earth element. It uses platinum. There is a bit of platinum, but it is recycled at 95%.

Mr. Randy Hoback: Okay.

How about you, Mr. Allan? What do you think of that solution? When considering cobalt and such items, should we start making sure that we take care of Canadians first? How should we handle this in the international marketplace?

● (1225)

Mr. Travis Allan: One thing I think we have a huge opportunity for in Canada is building up our domestic mining sector for some of these major resources. If we can do that and really execute on a metals and minerals strategy, not only will we have more production that Canadian companies can use, but we also will be able to export internationally.

I really think building our productive capacity is the number one priority to ensure that we have good safeguards and are not totally dependent upon imports for those metals and minerals.

Mr. Randy Hoback: When we look at the export market and we look outside.... I'm going to get off the buy America question, because we've studied it in the special committee.

We're trying to make sure that we have Canadian companies exporting outside of Canada with new environmentally friendly products. Where do you see the biggest market opportunities, and where do you see the opportunities lying for Canadian companies that may not have been tapped by other regions?

We touched on the way Germany moved forward on solar technology 15 years ago. What are the new markets that we should be trying to find a Canadian home for?

I'll open this up to all panellists, because I'm sure you all have different perspectives based on the sectors that you work in.

Mr. Hari Suthan Subramaniam: Maybe I'll start off. It's a great question.

I'd say, from the space we look at—our vantage point—it's data analytics and AI. I know that many folks talk about these, but they interplay pretty much seamlessly in all sectors. Whether you're in forestry or in mining, it becomes very much a robotics and data play, moving down. The proliferation of those segments is a great point for Canada to continue to keep a field advantage on. That's one point.

The second one, I'd say, is that export markets.... Honestly, I think it's the globe in its entirety. One thing I should have probably said is that the government, or we as a nation, seem to have five or six preferred countries that we think we should.... I think that idea should be uncoupled. I think we should let our companies go where the markets are and support them accordingly. There could be technologies that can decarbonize for the entire African continent, and I think their development should be encouraged.

From an Opus One-centric perspective, however, I would say that our biggest markets are Japan and Australia, which is never talked about as a big trading partner for Canada. What the Australians are going through themselves presents a huge market, I believe, for a lot of Canadian clean-tech technologies.

We haven't looked at South Africa. I'd say let's look at some non-traditional countries that Canada has not focused on. That would be my advice.

The Chair: Thank you very much.

I'm sorry. Your time is up, sir.

Mr. Sheehan, go ahead please.

Mr. Terry Sheehan (Sault Ste. Marie, Lib.): I'll stick with Opus One Solutions.

Before I begin, thanks again to all our presenters. We've had some excellent testimony as we've undertaken this work.

During your testimony you mentioned a few things that your company has accessed—the EDC, the BDC, the regional development agency FedDev. I would like to find out what FedDev has done. We heard in testimony before what FedNor had done for a company in being able to unlock what was a $5-million loan from FedNor that basically leveraged about 25 million dollars' worth of investment. There is, then, that one.

The other piece, which I haven't heard about from any of the people testifying today but we've talked a little bit about, is research and development—IP and such. Are there any comments about IRAP or SR and ED credits or anything else related to research and things that Canada is doing well or could be doing better in that field of getting people ready to export?

Mr. Hari Suthan Subramaniam: On EDC-BDC, absolutely, we have been beneficiaries of IRAP. Personally and professionally, we're huge proponents of IRAP.

There are two things. I know the current budget seems to have given IRAP far more runway, from going all the way up to $10 million for scale-up companies. That's fantastic. My only thing is that I think cultural changes are probably needed in most of the agencies, with external folks looking at where we are going and how the government keeps in tandem with the pace of commercial growth. I know it's hard for us to talk about government agencies trying to know where the commercial growth is, but that kind of synchronicity would be better served if we could achieve that. IRAP is fantastic. It should continue, and we as a government should double down on it.

In regard to FedDev, we were a recipient of a $2.5-million loan that leveraged about $15 million, so it's probably well spent. It is a loan, which is fantastic, and I think it's one of the few instruments we have been able to go to for really scaling up. Our request to this panel is to allow them the flexibility, if we're doing well and if we're meeting the targets, to help us more, give us an additional loan without having to go through the bureaucracy or the red tape that was mentioned before. Make it easier for us, as long as we meet the metrics, and just like a bank, give us more in terms of a loan at 0%, which allows companies like ours to scale quite aggressively.

● (1230)

Mr. Terry Sheehan: Thank you for that.

For my next question I'm going to start with Travis.

Everyone has talked about the buy America policies that the current president, Biden, is speaking about. “Buy American” is not a new term. I believe it first started in the 1930s in the United States, and periodically in different decades they introduce those ideas.

Travis, you had mentioned, and this is something I've looked at in the past not only as an MP but as a former city councillor, about how we can do more procurement internally within Canada. The research shows that, for a lot of the infrastructure programming, the federal government funds the provinces and territories through the various programming and transfers, and a lot of times it's really a buy Ontario program, a buy Quebec program or a buy B.C. program.

For the record, would you encourage provinces and territories to evoke some policies that would encourage, I'm going to use Ontario since I'm an Ontario MP, a buy Ontario type of process?

Mr. Travis Allan: Just because of the market size differential, we're so eager to get into the United States and sell, we're so eager to grow internationally, that we get a little concerned about express buy America, buy Canada or buy Ontario programs. We think, frankly, we're globally competitive, so the first thing we'd love to see is making sure that governments are looking at their procurement, making sure they're not keeping out Canadian providers, which has happened a number of times. That's the number one focus.

Number two is looking at ways to educate and make sure that Canadian companies, especially small and medium-sized businesses, know how to work the procurement systems and have people who can help them. We really hope that we can be competitive and we can get the best products from Canada for Canadian governments.

Mr. Terry Sheehan: I agree with that. I'm a big proponent of free trade, the free flow. I'm also co-chair of the all-party steel caucus, and I know how many times a product goes across the border, whatever it's manufacturing. Let's say it's windmills: Iron ore could be coming from the States to a steel mill in Canada to make those windmills, back and forth. I agree 100% and I wanted to get your thoughts on that.

Keeping on that procurement note—

The Chair: Mr. Sheehan, I'm sorry, but your time is up. I'm not sure if anybody can give you a quick comment.

I don't see that happening, so I'll go on to Mr. Lobb, please.

Mr. Ben Lobb (Huron—Bruce, CPC): Thanks very much, Madam Chair.

The first question is to Mr. Allan. You might not know the answer to this. It's a bit of an aside question.

On social media and different places, you see these charging stations that are hooked up to a diesel generator or a natural gas generator. Do you guys track that? As to your customers who are buying from these stations, what percentage of people are actually hooking into the grid and what percentage of sales are hooking into a diesel generator?

I was on the highway the other day, and at Canadian Tire they had some, I think they were Teslas, set up and it looked to me like they had little diesel generators or gas generators on there.

What do you know about that?

Mr. Travis Allan: Our stations are designed to be grid connected, so the only situation in which we'd expect them to be off grid would be either in a power failure or if they were used in a remote or off-grid community. For power, quality-wise, grid is best. We haven't heard many reports of that.

The one thing you might have seen, if it wasn't a generator, is that sometimes the fast-charging stations have a big separate piece of infrastructure that actually helps ensure the right voltage and amperage is coming. It could also have been that, or it might have been a temporary situation with the generator.

Mr. Ben Lobb: Thank you for that answer.

When they see that, I think there are a lot of people who wonder if it's true or not true or what percentage it is.

Is the gentleman from Opus One still online?

I have another related or unrelated question. I hear this from many different people in my constituency, and again you see this online. They say, if we meet the EV standards for vehicles by 2040 or 2050, or whenever, the grid would never handle the demand for electricity. Is that a farce, or is that true? What's the situation we're in on that?

● (1235)

Mr. Hari Suthan Subramaniam: That's a great question.

Absolutely, the grid is built. One of the funny things about the electricity sector, and that's why it's ripe for innovation, is that it hasn't really changed much in the last 100 years. The poles and wires that you see going into buildings and going above your homes all have to go through some sort of upgrade, especially where electrons and electricity are moving back and forth. There will be upgrades and there will be costs associated with it.

The question, and I think this may fall outside the purview of the federal government when working with the provinces, is how we ensure that cost effectively the grid is upgraded for the electrification revolution or even the hydrogen revolution that's coming. Ultimately they all need electricity to make hydrogen, and so on and so forth, so I think there does need to be an upgrade on it.

Our company, for example, is one that has technologies that can ensure that the cost is mitigated enough that the residents don't have to bear the cost of a grid upgrade because we're going electrical.

Mr. Ben Lobb: I have one other question, and I think you touched on a couple of parts, about the growing pains of a new software company or a new technology company in regard to the protection of intellectual property as you expand outside the domestic borders.

For 12 or 13 years I've been talking about this. I used to work for a software company. What were your experiences? What do you think the government can do to further support growing companies that want to export, that face IP lawsuits in the eastern district of Texas and things like that?

Mr. Hari Suthan Subramaniam: I don't know if my colleagues would agree, but I think it's the biggest expenditure, because IP is such a tough game. It protects your company in terms of the ability to get money because you have a patent, but the real thing is that it's about enforceability and defensibility of the patent.

What governments can perhaps look at is a rebate of some sort around ensuring that more IP is patented out of Canada to the U.S. Therefore, we file in the U.S., we also file in the EU, and let's say the World Intellectual Property Organization. Some sort of incentive for start-ups, scale-ups, any companies, to ensure that we accelerate IP patents and IP filing would be probably the best help.

It is probably very expensive. I'll defer to AddÉnergie. They probably spend a bundle on that every year.

Looking at that would be one thing.

Mr. Ben Lobb: I've always thought—

The Chair: Thank you very much, Mr. Lobb. You have 20 seconds.

For the information of the committee, the bells are ringing. A vote has been called. It's a 30-minute bell.

Do I have the direction from the committee? I would need unanimous support from the committee to continue until approximately 12:45 or 12:47, something like that. Is that acceptable to the committee?

Some hon. members: Yes.

The Chair: Everybody is good with that. All right, we will continue on.

Mr. Arya, you have five minutes, please.

Mr. Chandra Arya (Nepean, Lib.): Thank you, Madam Chair.

Mr. Subramaniam, as a former board member of Invest Ottawa, I agree that companies need a lot of support for scaling up.

Mr. Peter Zebedee, 20 years back I worked in Qatar, obviously not in the LNG industry. I know the importance of LNG and I have seen the growth of the LNG industry. In fact, I was a tiny, minor shareholder of the first LNG project in India. I look forward to your first shipment.

Back then, 20 years ago, I used to wonder why, since we had so much natural gas, we were not setting up LNG plants. I'm glad yours is coming up. I look forward to many more coming up.

Mr. Pocard, in Qatar, 20 years back, I hosted a seminar on futuristic technologies. The two technologies I chose then were, one, nanotechnology in materials; and two, hydrogen fuel cells. I had a Fuel Cells Canada executive come down to Qatar and make a presentation. Since then, even now, hydrogen fuel technology is almost within reach. What I heard then, I'm hearing even now. I know Ballard has gone through ups and downs. It was the most valuable company 21 years back. Still, you are the supplier of 3,400 trucks and buses. It's good, but it is still not there. I still hear the same thing as before: It is just a couple of years away from major transformation.

Anyway, with my limited time, I have questions for Mr. Allan.

I'm glad to know about what you're doing on the charging side and your exports to the U.S. As you may know, our government has invested funds in the recent budget to develop and implement the codes and standards for the retail of zero-emission vehicle charging and fuel stations. Obviously, we are proposing to do this in coordination with other international partners.

With your background in this and with your exports to the United States—and I'm not sure whether you are exporting to Europe also—are you facing constraints because the codes and standards are not the same across the world? Do you foresee any problems that will curtail export from companies like yours?

● (1240)

Mr. Travis Allan: Thank you.

Yes, codes and standards in the EV charging industry have been critically important since the very early days where people were arguing over what type of connector they would use for the different vehicles. They continue to be a major source of uncertainty and non-tariff barriers in our sector.

The investment you're referring to, where Measurement Canada will be looking at metrology standards, is a really important step that was requested from industry: Electric Mobility Canada and our sector. We want to make sure that when we're dispensing energy we're charging people correctly. We are trying to get consistent metrology standards across all of North America. That lets us sell to a broader audience. It's very important.

Mr. Chandra Arya: Mr. Allan, I have very limited time and I have one more question.

This morning, I was reading in Bloomberg Hyperdrive the specialized articles on electric vehicles. I'm sure you, too, follow that. An article was about the chicken-and-egg problem. Because there are no charging stations, I don't want to buy an electric vehicle.

Which comes first? Because there are not enough electric vehicles in Canada, obviously we don't have so many charging stations. Obviously the first mover is the government sector. We have supported the development of 6,000 charging stations, but that is very low compared to the requirement in a geographically wide country such as ours.

Where do we go? How do we achieve that balance so enough charging infrastructure is there so that people are encouraged to buy electric vehicles?

Mr. Travis Allan: That's right. Canadians typically will not buy electric vehicles unless two things are in place. One, they have to see charging stations and know that they work, and two, there have to be enough electric vehicles.

Investments by NRCan under ZEVIP and the EVAFIDI program have been critical as a first step to getting Canadians comfortable with the idea of driving electric. I think we need to do substantially more in that area, as well as making sure we have enough makes and models of electric vehicles on the market.

The Chair: Thank you very much.

We'll move to Mr. Savard-Tremblay for two and a half minutes, please.

[*Translation*]

Mr. Simon-Pierre Savard-Tremblay: Thank you.

Earlier, the speaking round was about to continue. I believe that Mr. Zebedee was about to respond. Unfortunately, there wasn't any time left. I would like to give him the opportunity now to answer my question. Remember that it concerned Canada's niche of expertise.

My question is as follows: how does Canadian expertise differ from American expertise?

[*English*]

Mr. Peter Zebedee: For my business in particular, we really need to focus on our structural advantages. Certainly with our main export market out of the west coast for gas being Asia, the geographic advantage is there and it's structural.

However, indeed, as my colleagues mentioned before, our ability to use hydroelectric power and the export and the liquefaction of our LNG is essential and provides us with a competitive advantage.

Thirdly, we have a highly skilled workforce here in Canada, and particularly in western Canada, on building these large energy infrastructure projects. We need to leverage that to our utmost advantage to construct projects that are competitively advantaged economically through the capital cost to construction relative to our competitors, and the U.S. is one of our main competitors for LNG export out of North America.

● (1245)

[*Translation*]

Mr. Simon-Pierre Savard-Tremblay: Thank you.

Madam Chair, how much time do I have left?

[*English*]

The Chair: :You have 45 seconds.

[*Translation*]

Mr. Simon-Pierre Savard-Tremblay: Okay. That's fine.

I'll turn briefly to Mr. Allan from AddÉnergie.

We know the importance of product reputation in international trade.

Is Quebec's expertise currently recognized, or is there more work to do?

[*English*]

Mr. Travis Allan: We consistently hear, particularly in the United States, about Americans who are looking for the expertise in not just building but also deploying charging stations.

The City of Montreal, for example, is known across the continent as a leader in our particular sector for its curbside charging and the work it has done on EV charging, and Hydro-Québec as well, as a leading utility network.

In general, Quebec is already doing a very good job, but I still think there's more room to grow because there is so much expertise there.

The Chair: Thank you very much, Mr. Allan.

We'll go on to Mr. MacGregor, for two and a half minutes, please.

Mr. Alistair MacGregor: Thank you, Madam Chair.

Mr. Subramaniam, earlier you had an exchange with my colleague Ms. Ashton. I wrote down one line. You were talking about how we needed to ensure that we get into markets. You listed off some countries, such as Australia and South Africa, non-traditional areas that we need to get into.

The other committee that I'm a permanent member of is the agriculture committee. We've often had discussions with our agricultural exporters about what's needed to get past non-tariff trade barriers. Often what has come up has been suggestions that we need to staff up our Canadian embassies and consulates with officials from CFIA who could understand the local market, the culture, and try to find ways to get more Canadian agricultural exports into those emerging markets.

Is something similar needed for our export of clean technology? Do we need to staff up Canadian embassies and consulates to get more on-the-ground intelligence about what's needed for us to really maximize our push in this area?

Mr. Hari Suthan Subramaniam: Yes. If I may, I would say it's great work on agriculture. I do believe in that. We are a huge agricultural economy and the exports are crucial to that.

There are also clean-tech ambassadors embedded in certain embassies, and then there are some revolving ones for major ones like the region of Africa from, as they call it, a science and technology perspective. However, can we use more for specific sectoral growth to Canada, even outside clean tech? The answer is yes.

The model we should as a nation be looking at is the U.S. Commercial Service, where the Department of Commerce has embedded folks from specific sectors in State Department-run embassies that do their job amicably well. That's a great model.

Mr. Alistair MacGregor: Yes, we just want to—

The Chair: I'm sorry, Mr. MacGregor. You're down to 15 seconds.

Just for the interest of the committee, I'm watching the clock very carefully, trying to finish this round if possible.

Mr. Hoback, you have five minutes, please.

Mr. Randy Hoback: Thank you, Chair. Thank you, witnesses.

I'm going to continue down the same line I was on before with regard to what opportunities are sitting there in the international marketplace and what niches Canadians should be carving out in those opportunities.

Mr. Subramaniam, you've already talked about this. I wonder if the other witnesses would like to talk about this a little bit.

Mr. Allan, let's go with you. What other opportunities do you see in the marketplace?

Mr. Travis Allan: I think it's anything to do with using energy more efficiently, because we have such a strong energy sector. Then I think, frankly, its some of Canada's traditional legacy sectors like mining and all the work that goes around mining and mineral resources. Those are going to be essential to building up the battery supply chain.

Then we have some really exciting emerging manufacturers of zero-emission vehicles, not only in Winnipeg but also in Quebec and Ontario. I think those are areas where we stand to really get some great growth.

● (1250)

Mr. Randy Hoback: Mr. Pocard.

Mr. Nicolas Pocard: I totally agree with that.

I think we're starting to see that, whereas traditionally, conventional internal combustion engines are not produced in Canada—only part of them—I think that with the zero-emission mobility we have the opportunity now to see that value chain being redeveloped in Canada, where we have complete zero-emission vehicles being made in Canada. I think this is one very important area of growth, as in the past, for Canada to regain some position in the value chain.

Mr. Randy Hoback: Thank you. That's excellent.

Mr. Zebedee, at LNG, you have supported the British Columbia NDP government. Is that not correct?

Mr. Peter Zebedee: That is correct.

Mr. Randy Hoback: In fact, they are very actively supporting you. Is that fair to say?

Mr. Peter Zebedee: Yes.

Mr. Randy Hoback: Can you explain to me the difference between the provincial NDP and federal NDP, because Ms. Ashton was almost hostile towards you?

Mr. Peter Zebedee: I don't know if I want to get into any comments between respective political parties.

I think we have a good story. We have the opening up of what will be the first LNG industry in Canada. It's a good story for Canadians at all levels, both for political parties and also for everyday Canadians and workers. We have a good product that we're going to export that will make the world better.

Mr. Randy Hoback: Back to article 6, if we don't see that, how does it impact your future?

It may not be this project but further projects down the road.

Mr. Peter Zebedee: We certainly support the implementation of article 6. We think carbon offsets and trading are essential components of future growth in the LNG industry, both for LNG Canada and also for other players.

Beyond that, we will have to look for the implementation of things like nature-based solutions and technological innovations to reduce the carbon footprint of LNG production in Canada to support future growth. We think it's kind of a basket of all of those things that are going to be required going forward.

Mr. Randy Hoback: It gives us a diverse basket then. Is that correct?

Mr. Peter Zebedee: That's correct.

Mr. Randy Hoback: Okay.

Mr. Subramaniam, I believe your company does the online power administration. Is that correct?

Mr. Hari Suthan Subramaniam: We do parts of that, yes.

Mr. Randy Hoback: I'm just kind of curious, with small and medium reactors coming into play, how that fits into the expansion of the network that's required, so that we don't see diesel generators at charging stations and so that we don't see a diesel generator being towed behind a trailer or an electric car. Where do you see that coming forward?

Then, how do we take condos that are built in the 1960s and 1970s and modify them to actually take on electric vehicles at this point in time?

Mr. Hari Suthan Subramaniam: That's a great question.

I'd say retrofit. Just like our home is retrofitted, I think the condos need to be retrofitted. There are so many companies in Canada and elsewhere that have come up with a lot of solutions to do that cost-effectively. If the government wanted to push that as a rebate in energy efficiency, absolutely, I think that would be great.

SMRs, I forgot to mention, are one of the leading things that Canadian companies currently do and that we can offer globally. I'd say that a proliferation of SMRs could go a long way across the federation to help ensure reliability of electricity for our economic growth.

Mr. Randy Hoback: How does that change the build-out of the actual grid itself?

Mr. Hari Suthan Subramaniam: From a climate change resiliency lens, storms and so on, it makes the grid stronger because you're generating power close to consumption, which invariably means it's more efficient. You don't have to take long poles and wires in terms of transmission of power, which also means the grid becomes more resilient to any changes that might adversely affect it.

Mr. Randy Hoback: Okay.

The Chair: Thank you very much.

We still have about 12 minutes of debate before the actual call of the vote, so we could get one more speaker to complete this round.

Mr. Arya, you have five minutes, please.

Mr. Chandra Arya: Thank you, Madam Chair. It's much appreciated.

Mr. Subramaniam, I understand your background was also in energy storage. With the advancement of batteries for energy storage, which I believe has increased the viability of renewable energy generation like solar and wind power, with technologies that are changing, the batteries that are actually being used now, from Australia to the United States, do you think there is the potential for Canada to be one of the leading players in the supply chain for the development of batteries?

● (1255)

Mr. Hari Suthan Subramaniam: Mr. Arya, it's a bit of a loaded question.

In terms of a global supply chain, it's hard to answer that. I think the best way to answer is this: If companies come up where there are leaders, how do we ensure they're part of the global supply chain? That's how I would answer that question. Given lithium expansion and a couple of others, there are different types of batteries, including that of my colleague at Ballard.

Yes, there are definitely clean-tech leaders in it. Storage technology is evolving so much there will be a need for multiple styles of storage based on its use and where it's placed.

Mr. Chandra Arya: Thank you.

My next question is for Mr. Pocard, if he's still there.

We came to power in 2015, and since 2016 we have invested quite a bit of money into the buildup of charging and refuelling stations. As I was saying to Mr. Allan, Canadians need to know there are charging and refuelling stations available before they can go in for zero-emission vehicles. They should have the same level of trust. Today I can drive my car, and I know for sure I'm going to get gas. Canadians should have the same level of trust and certainty, whether they're charging their electric vehicle or they're trying to fill up their tanks with next-generation clean fuels such as hydrogen.

Where do you think that is going? When do you think we'll get a viable number of refuelling stations for hydrogen?

Mr. Nicolas Pocard: It's a very good question. I'd like maybe to respond with an alternative approach.

Maybe one way to do it is to start with heavy-duty mobility buses and trucks. You start with a fleet-operated vehicle. Those vehicles have the largest contribution to emissions compared with a personal car, which is used only a couple of hours per day. We should start with a fleet of buses or trucks. We talked earlier about warehouses and distribution centres. It's much easier to imagine that you have one refuelling station at a fleet location, and then the same infrastructure can be used for tens or hundreds of vehicles.

I think that would be the way to start. You start where you have the biggest impact on emissions. You start with a fleet-based vehicle, and from there you can grow. Maybe it's easier to do it this way than starting with the passenger car market.

Mr. Chandra Arya: That's an excellent suggestion, especially when it comes to buses and trucks. Fleet ownership is the key. You're suggesting that we take that approach and then gradually come out elsewhere.

Mr. Nicolas Pocard: Yes.

Mr. Chandra Arya: Okay. Thank you.

Mr. Allan, I've been calling for a comprehensive Canada-wide strategy to develop everything related to batteries, from mines, minerals and metals to technologies to final manufacturing. In the U.S. today, we find $2-billion plants, I think four or five of them. They are each $2 billion investments in the manufacturing of batteries, while in Canada we are still trying to find our foothold into which part of the supply chain we can and should invest.

The U.S. has identified Canada as a major source of the minerals required for the batteries. In fact, they've identified that as a national security issue. Recently the U.S. Department of Commerce held a meeting of miners and battery manufacturers to discuss how the Canadian industry can be developed. Do you have any thoughts on that?

Mr. Travis Allan: You have perfectly described the opportunity. We need to make sure that Canada is at the forefront in terms of responsibly mining those metals and minerals and using clean electricity, and I hope we can go further. I hope we can also be responsible for processing, and I hope we can have battery manufacturing here, maybe not for all the batteries in the world, but I do think we should be trying to get our fair chance, because that's how we get those value-added jobs with the huge opportunities.

The Chair: Thank you very much.

Thank you to all our witnesses. There has been tremendous, very valuable information from all of you. Thank you all very much.

I move adjournment of the meeting.

Mr. Sukh Dhaliwal: Thank you, Madam Chair. You did a great job. We're just finishing on time.

The Chair: Thank you all very much.

The committee is adjourned.