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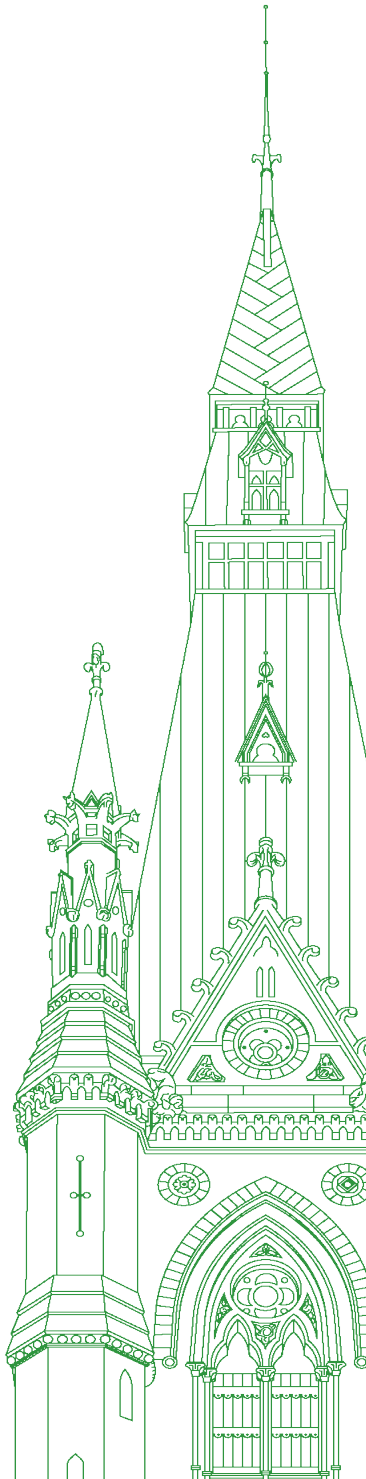

Chair: Mr. Francis Scarpaleggia

Standing Committee on Environment and Sustainable Development

Tuesday, October 18, 2022

● (1550)

[*English*]

The Chair (Mr. Francis Scarpaleggia (Lac-Saint-Louis, Lib.)): Good afternoon, colleagues. I call this meeting to order.

We're welcoming some new members today. On the Conservative side we have Mr. Kurek. Mr. Dreeshen is here in replacement, and then he's going to work on the natural resources committee. We have Mr. McLean with us, who has been here before, and Mr. Deltell, who is a member of the committee. He hasn't arrived yet, but he'll be with us as a permanent member of the committee.

Before we start with the witnesses today I would like to ask for unanimous consent to adopt the subcommittee report, which you've seen and which came out of the last meeting of the steering committee.

Mr. Lloyd Longfield (Guelph, Lib.): It's a fine report.

The Chair: That's adopted.

I thought you were going to raise some objection, Lloyd.

Today we're continuing with our very interesting clean tech study.

On the first panel we have, from the Canadian Nuclear Association, John Gorman, president and chief executive officer. From Clean Energy Canada we have Oliver James Sheldrick, program manager, clean economy. From the Institute for Hydrogen Research we have Professor Bruno Pollet. From Iron and Earth we have executive director, Luisa Da Silva.

Each panellist has three minutes to make opening statements. We'll start with Mr. Gorman, who is online.

You have three minutes. Unfortunately, I'm going to have to be pretty strict on the time. If I interrupt you, don't take it personally. It's just so we can land on time at the end. Thank you.

Mr. Gorman, go ahead.

Mr. John Gorman (President and Chief Executive Officer, Canadian Nuclear Association): Thank you.

Chair, members of the committee, thank you for the opportunity to speak with you today on behalf of the Canadian nuclear industry. Reaching Canada's 2050 net-zero target is going to require a paradigm shift in how we approach the production, distribution, and use of energy in Canada. There are no easy solutions to this problem, and the scale of the challenge is not widely understood or accepted.

What is clear, however, is that meeting this challenge will require the more rapid deployment of all available clean energy technologies, such as wind, water, solar, conventional and nuclear, as well as the dramatic scaling up of emerging technologies such as hydrogen, small modular reactors, marine renewables and long-term storage.

In recognition of the massive challenge and the need to deploy both existing and emerging clean technology at speed and scale, the national associations representing all the technologies I've referenced have formed formal alliances and are jointly working together on policy positions to inform strong decision-making by this government.

Nuclear power is increasingly being recognized as part of the solution in our collective climate challenge and domestic energy security needs. Canada has been a leader in the research of the nuclear industry at home and globally. We are delivering refurbishment of our existing nuclear fleet in Ontario ahead of time and under budget. Small modular reactor projects are being actively planned and executed in Ontario, Saskatchewan, and New Brunswick, and our uranium mining sector remains critical to the world's nuclear industry. However, there's much to be done to enable nuclear power to play the role that is required for Canada to meet its targets.

As this committee studies and considers the required policies to enhance Canada's clean energy sector, we recommend that Canada urgently require the development of a clear clean energy industrial strategy. The strategy should include all clean energy technologies, defined as technologies that do not emit greenhouse gases. As we outlined in our recent budget submission, nuclear technologies must explicitly and purposely be included in all efforts to address the climate crisis and energy security needs.

To enable Canada to meet its net-zero targets, we recommend the following specific actions to support the industry. We recommend the inclusion of nuclear and clean-tech tax credits programs, a clear and predictable process in the Impact Assessment Act to ensure timely deployment, support for uranium and CANDU nuclear technology exports to key countries such as Romania and South Korea, as well as support for the SMR initiatives in key markets such as Poland and Estonia. We recommend the recognition of uranium and other minerals that are used in the nuclear industry as critical to the clean energy economy in the clean mineral strategy; financial mechanisms to support the development and deployment of nuclear energy and technologies; modernizing and aligning regulations, codes and standards to facilitate technology development deployment and export; and recognition of the development of hydrogen through clean energy such as nuclear as preferable to greenhouse gas-emitting technologies.

Through implementation of these support measures, Canada will be putting nuclear on a level playing field with the other low-carbon clean technologies.

● (1555)

[*Translation*]

The Chair: Thank you, Mr. Gorman.

I'd like to remind all the witnesses who are online to make sure that the headset microphone is high enough for the interpreters to hear them properly.

I should also have mentioned that, pursuant to the routine motion adopted by the committee on this subject, all witnesses have completed their technical tests.

Mr. Sheldrick, you now have the floor for three minutes.

[*English*]

Mr. Oliver James Sheldrick (Program Manager, Clean Economy, Clean Energy Canada): Good afternoon, Mr. Chair and members of the committee. My name is Ollie Sheldrick, and I am the program manager for our clean economy work at Clean Energy Canada, a climate and clean energy think tank at Simon Fraser University. I am based in Toronto, Ontario.

I'll be speaking today on how Canada can position itself to innovate and invest in the clean technologies required to reach its net-zero goals, and in turn position itself as a global exporter of the materials and products that will fuel the global clean transition.

Modelling done by Clean Energy Canada has found that between 2030 and 2050, jobs in Canada's clean energy sector are projected to grow by almost 50%. By 2030, Canada's EV battery supply chain could support nearly 250,000 direct and indirect jobs and add $48 billion to the Canadian economy. Fully implementing green procurement policies, or "buy clean", in Canada could unlock up to 14 million tonnes of direct and indirect emissions reductions and support a growing green building materials sector that could reach $50 billion by 2030.

However, Canada faces three challenges in order to achieve this: first, to support the existing clean-tech industry by scaling the market for current technologies; second, to invest in innovation to ready the next generation of solutions; and third, to ensure that Canada capitalizes on its competitive advantages.

In order to address the first challenge, Canada must increase its focus on driving market demand. The government can play its part here through clean procurement practices, or "buy clean", as one of the largest customers for products such as construction materials—for example, buying over one-third of all of the steel in Canada every year. The government has a strong influence and can spur widespread adoption and increased demand for low-carbon products. Due to our low-emissions electricity grid, many Canadian-made products are already lower carbon than our international alternatives. The government is moving on this, but our ambition and pace must be increased.

For future clean technologies that will drive our near-zero economy, we must continue to invest in projects that demonstrate what's possible. The International Energy Agency has found that while we have the technology to get the emissions reductions by 2030, to get to our 2050 goals almost half those reductions need to come from technologies that are currently at the demonstration or prototype phase.

Canada has the potential to be a green-energy and green-technology superpower. We have one of the lowest-emissions grids in the world—it is 83% clean—along with abundant natural resources and critical minerals, vast freshwater reserves and geology for carbon sequestration, and a highly skilled workforce. These are the ingredients for cornerstone clean technologies such as green hydrogen, batteries and CCUS. We must harness these opportunities in the following ways: first, by building a market for low-carbon goods in Canada to support domestic producers and reduce emissions; second, by continuing to fund innovation, and third, by building up Canada's competitive advantage as the first choice for clean-tech development.

With these actions, Canada can seize the opportunity of the clean economy and meet our net-zero 2050 goals.

The Chair: Thank you.

[*Translation*]

Professor Pollet, you now have the floor for three minutes.

[*English*]

Prof. Bruno G. Pollet (Deputy Director and Director, Green Hydrogen Laboratory, Université du Québec à Trois-Rivières, Institute for Hydrogen Research): Thank you for the opportunity to present and interact with you this afternoon.

I have been working in the hydrogen energy sector for more than 20 years, both in academia and in industry in the UK, Japan, South Africa, Norway and now Canada.

I strongly believe that hydrogen will contribute to the ambitious decarbonization goal of 100% by 2050. I would like to emphasize, though, that hydrogen is not a silver bullet for decarbonization in all sectors. It is part of a portfolio of several low-carbon energy technologies.

For now, the primary focus should be on targeting industries and sectors that are difficult to decarbonize—the so-called “no regret sectors”—especially the energy-emitting and carbon-emitting intensive industries and heavy-duty transport.

However, we are currently facing many challenges.

First, we must accelerate the deployment and capacity of low-carbon-intensity hydrogen technologies and renewable energy systems, and work internationally and with provinces and municipalities to accelerate the development of clean hydrogen codes and standards.

Second, we must engage with stakeholders, including indigenous communities, and quickly implement community-led clean energy projects.

Third, we need to innovate in low-cost and highly efficient hydrogen production technologies with better integration with renewable energy systems and better hydrogen storage and transport systems.

Fourth, we must focus on local strategic minerals and sustainable materials for clean energy for the heating, transport and industrial sectors, as well as innovations in recycling.

Fifth, we must implement policy and funding to support low-cost, clean hydrogen production in line with the U.S. Inflation Reduction Act. This would enable Canadian manufacturers and project developers to compete for investment, develop and retain human capital, and create jobs.

Sixth, we need to attract international experts and put in place a faster and much more efficient immigration process.

Seventh, we must also invest in extensive R and D programs and state-of-the-art R and D infrastructure to validate the technology and to generate innovation, IP and new industries. We must also invest in training programs to train the next generations of hydrogen and clean energy engineers, scientists, technologists and economists.

Canada is really blessed with vast territories, an abundance of water, minerals and natural resources, abundant renewable electricity generation and, of course, natural oil and gas. These are perfect ingredients for building a strong clean energy value chain and economy from mineral extraction to clean energy generation. However, Canada must act very rapidly to deploy commercially available clean energy technologies, accelerate the development and deployment of emerging technologies, and develop innovative solutions, while ensuring access to clean, affordable and modern energy services to all Canadians, including indigenous communities.

● (1600)

The Chair: Thank you very much, Professor Pollet.

We'll go now to Ms. Da Silva, executive director of Iron and Earth, for three minutes, please.

Ms. Luisa Da Silva (Executive Director, Iron and Earth): Thank you, esteemed committee members, for inviting Iron and Earth here today.

In 2021, 42% of Canada's greenhouse gases came from burning fossil fuels for transportation, agriculture, and building or water heating. In Canada's 2022 budget, the two big-ticket items are EVs and CCUS, with CCUS receiving almost four times more funding than clean-electricity initiatives.

Despite federal and provincial governments providing an estimated $5.8 billion for CCUS projects since 2000, CCUS captures only 0.05% of Canada's greenhouse gases. Canada's old energy systems are too centralized and not community focused. What Canada needs to do, instead, is simultaneously improve worker well-being and community resilience toward climate change through green housing initiatives, retrofits, community-distributed energy projects, and zero-emissions mobility.

Iron and Earth addresses these goals. Our programs have national reach, from traditional fossil fuel communities in Alberta to remote diesel-dependent communities in northern Labrador. Our programs are focused on community capacity and local, sustainable job creation, which empower workers to build and implement climate solutions.

The growth of a skills base to meet this challenge is critical, but it is a question of the distribution of these skills closer to the need and closer to home, and of them being available across the breadth of the nation. Currently, in spite of having the baseline skills and a desire to work in the net-zero economy, fossil fuel workers and indigenous communities lack opportunities to play a leading role in building the policy and infrastructure required to reach global climate targets.

The United States recently announced the Inflation Reduction Act, whereby, of the $158 billion going toward clean energy solutions, 48% goes toward home energy efficiencies and community resiliencies, whereas only 2.3% of that budget goes toward CCUS.

The solutions Canada needs in the energy transition exist here at home. I agree with my fellow speakers: We are rich in natural resources. We have solar, wind and geothermal. You name it, Canada has it. With a looming recession and Canadians worried about inflation and job stability, Canada should make investments that create projects across Canadian communities. Increasing local jobs and economies prevents a Canadian energy worker diaspora flying across the nation to work and builds resilience against the boom-bust cycles associated with the oil and gas export economy.

Canadians who have worked in the energy sector are mobile workers. Not only have we travelled across Canada for employment, but we have also used our highly sought-after skills internationally. Canada needs to create opportunities within its borders for these skilled energy workers to upskill to a clean economy, or it runs the very real risk of a clean energy skills drain, leaving the nation bereft of skilled workers and left behind in the energy transition.

Thank you.

● (1605)

The Chair: Thank you very much.

We started late, but we have to finish on time. Often, when we start late, we go a little over time, but this time we can't, apparently. I'm going to have to improvise a bit and change the allotted time for questions. We'll see how it goes. For the first round, we'll do five minutes instead of six, and we'll see where that leaves us.

We'll start with Monsieur Deltell.

[*Translation*]

Welcome to the committee, Mr. Deltell. You have five minutes.

Mr. Gérard Deltell (Louis-Saint-Laurent, CPC): Thank you very much, Mr. Chair.

Good afternoon, ladies and gentlemen.

I'm very happy to be here. Thank you for welcoming me to the committee.

To those of you who aren't here, welcome to your House of Commons.

I'd like to address two points, and I'll start with Mr. Gorman.

[*English*]

Mr. Gorman, you talked a lot about the nuclear industry.

By the way, there is an interesting report in La Presse, *le 10 octobre*, which talks about this file and the Quebec perspective. It is quite interesting.

[*Translation*]

You talked about the CANDU reactor. The technology for that reactor dates back to the 1970s, but it would seem that the entire global nuclear industry is more focused on small modular reactors, or SMRs.

I'd like your comments on that.

[*English*]

Mr. John Gorman: You're right. The CANDU technology—a Canadian technology—matured in the seventies and was exported to seven nations around the world. We continue to do refurbishment on those, and we have new build opportunities in places like Romania. What's important to know is that through the work we're doing around refurbishment and the continual work we do with conventional CANDU technology, there is constant improvement in the modernization and digitalization of those assets. The CANDU technology continues to evolve, and it's still world class.

You're correct that there's a lot of emphasis on small modular reactors, and Canada is a world leader. We have technologies being deployed now, as you know, in Ontario. The GE Hitachi model will be connected to the electricity grid by 2028, and we will see that same technology rolled out in Saskatchewan and Ontario, in multiple units, as well as a number of other advanced technologies coming out. Canada needs to maintain that nuclear leadership.

Mr. Gérard Deltell: Thank you so much, Mr. Gorman.

What I understand from your testimony is that we can do both the SMR and the CANDU.

[*Translation*]

I have two questions for Prof. Pollet from the Université du Québec à Trois-Rivières.

Good afternoon, Prof. Pollet.

You gave us a list of recommendations during your presentation. Thank you for that, and I'd like to acknowledge your thoroughness in that regard. In the fifth point of your opening remarks, you talk about the Inflation Reduction Act that was passed in the United States.

What concerns do you think Canadians should have about this legislation, which is much talked about when it comes to green energy?

Prof. Bruno G. Pollet: The United States is a pretty attractive place to invest. It offers a tax credit of up to $3 per kilogram of hydrogen. That makes the business model very attractive to them if they want to take on a big project or if they want to expand.

Some Canadian manufacturers who are interested in fuel cells and, of course, users say that they will really miss the boat if they don't have access to a financial mechanism, similar to the one adopted in the U.S. That's actually a big concern.

In addition, we could also lose labour rather than attract it to Canada. This is a very big issue in the hydrogen sector, where there is a real shortage of skilled workers. It's a big concern in this sector.

● (1610)

Mr. Gérard Deltell: In your last recommendation, you say that we need to act quickly and accelerate access to clean energy.

Can you give us some examples of what the government should and must do?

Prof. Bruno G. Pollet: Yes, I can certainly do that.

I'm thinking in particular of the implementation of a renewable energy system in very strategic provinces. If we really want to produce this green hydrogen, as we promised our German friends, we should really look at clean technologies and the capacity of wind turbines, solar farms, and so on.

The availability of hydroelectricity is also very important. Let's not forget that 85% of our electricity is very clean. We can really use that and build, implement this system—

The Chair: Unfortunately, I have to interrupt you, Prof. Pollet.

Ms. Taylor Roy, you now have five minutes.

[*English*]

Ms. Leah Taylor Roy (Aurora—Oak Ridges—Richmond Hill, Lib.): Thank you, Mr. Chair.

Thank you to our witnesses for being here, and being here in person. Welcome to the new members of our committee.

This is a very diverse and interesting panel. I have so many questions I could ask, but I'd like to hear from all of you briefly on what you feel are the best ways of helping us move forward under a number of criteria.

One is proven technologies—technologies that we're quite sure will work and get us to where we need to go, that have the largest environmental impact in trying to meet our goals.

Also, I think it was you, Mr. Sheldrick, who talked about building a market for low-carbon goods. It's incorporating that, and our ability to export, because as we know we need to help build the private sector. The government cannot do all of this on its own. It cannot possibly fund this. We're all concerned with government expenditures.

Two additional things are leveraging private sector resources to do this, as well as ensuring that this is a fair and just transition. There are lots of goals we're trying to reach, and we're trying to reach them quickly.

You're all here with different perspectives. I'm wondering what your suggestion would be for one or two things that you believe meet those criteria—that it's proven, has a huge impact, is fair and just, can leverage private sector resources, and has a low-carbon market out there, or a market we can create.

Perhaps we can start with Ms. Da Silva, since she's in the room.

Ms. Luisa Da Silva: Absolutely. Thank you.

On proven technologies that are on the ground and would be able to be implemented right away, what come to mind are solar and wind. We have plenty of natural resources here in Canada. It would also benefit many of the communities that right now are completely diesel-dependent and have no other options. It's also part of reconciliation for indigenous communities being able to give them energy sovereignty.

This is something that the private sector is very much wanting to get involved in. The latest numbers I saw were 695,000 people working in clean energy. Those numbers are growing. In 2020 alone they grew by 5%. The demand is definitely there. The private sector is moving into that area to make investments, and where investments come, the jobs will follow. It is a lucrative industry to move into. I think those are the obvious examples.

In terms of the technologies we are still sorting out, we have a lot of promise in certain areas, like hydrogen, for example. It would, for example, help to save on electric vehicles, because people who live in high-rise buildings wouldn't be able to charge their electric vehicles, but if they have a hydrogen-powered car, they would be able to fill that up in the same amount of time as a fossil fuel vehicle.

We need to explore those technologies more, and we also need to get started with the ones that are already proven.

Thank you.

Ms. Leah Taylor Roy: Thank you very much.

Mr. Sheldrick.

● (1615)

Mr. Oliver James Sheldrick: Thank you.

On the point of government spending and creating markets, something like “buy clean”...although I understand your point about not being concerned about government spending.... A lot of this is our ability to leverage spending that is already happening in other spaces—spending on infrastructure, building bridges, building roads. We're going to be spending this money. If you bring in that “buy clean” element, which through a lot of analysis is adding only a 1% to 2% increase to the overall project costs, you could be buying significant volumes of cleaner steel and cleaner cement. Once you start building that market out and showing that there's a demand, a clear buyer, those products become more mainstream. Then the private sector comes in and starts buying those at greater volumes in and of itself, because it becomes the default in the market.

There's an opportunity for the government to leverage existing spending and to also leverage private industry to expand its own use of clean materials. As I mentioned, there's also a real clear benefit to Canada's producers. As we mentioned in multiple places, our cleaner grid means we're already among some of the lowest-carbon producers of lots of these materials anyway. There's a clear advantage there to supporting Canadian businesses.

On the point—

Ms. Leah Taylor Roy: I'm sorry to interrupt, but my time is running out.

Mr. Pollet, can we go to you next?

Prof. Bruno G. Pollet: Yes, I completely agree with Mr. Sheldrick's comments on this point here. The most important thing, actually, is to create that market. We have customers out there who really want to produce the green products, but what they're always asking is where they can get access to this green hydrogen. This is really the bottom line here. Again, it's really to try to increase the capacity.

[*Translation*]

The Chair: Thank you, Prof. Pollet.

As you can hear, the bells are ringing.

I'd ask the committee's permission to continue until there are five minutes left before the vote.

[*English*]

Mr. Damien Kurek: Can we finish the round? I'd prefer to vote in the House.

The Chair: There's no unanimous consent.

Do you want to give it until 10 minutes before?

Some hon. members: Agreed.

[*Translation*]

Go ahead, Ms. Pauzé. You have five minutes.

Ms. Monique Pauzé (Repentigny, BQ): Thank you, Mr. Chair.

I'd also like to thank the witnesses for being with us today.

I'd like to welcome all the new people to the committee. We're used to working in a collegial way on this committee.

My questions are for Prof. Pollet.

I'd like to begin by congratulating you, Prof. Pollet. I learned that you were honoured by the International Association for Hydrogen Energy last July for your work and research on innovative materials related to sustainable development.

You've even been invited to join the Council of Engineers for the Energy Transition created by the United Nations, or UN, which brings together the world's top scientists in energy efficiency. That really calls for congratulations. Thank you for your work as a professor and a pioneer in the field.

Canada has released the Hydrogen Strategy for Canada. Among other things, it's said to be ambitious, that Canada will achieve net-zero emissions and that it will put Canada at the forefront. However, 90% of the hydrogen currently produced comes from hydrocarbons. That's not how we're going to meet our targets.

Thanks to you, we realize that hydrocarbon becomes a tool of choice when it is the product of a renewable and carbon-neutral source.

How could the government help take tremendous steps forward in green hydrogen?

Prof. Bruno G. Pollet: As I mentioned earlier, I see the adoption of a portfolio of different technologies, such as those related to batteries, to achieve that carbon neutrality by 2050. Hydrogen isn't a magic wand that will work miracles or decarbonize all sectors.

Of course, there is also talk about blue hydrogen, which uses carbon capture and storage, or CCS, technologies. This hydrogen will be useful in sectors where electrification is very difficult. Of course, we must also include everything related to heavy transportation.

● (1620)

Ms. Monique Pauzé: Okay.

You're telling us how it's good, but what I want to know—

[*English*]

The Chair: Excuse me.

Go ahead, Ms. Collins.

Ms. Laurel Collins (Victoria, NDP): It's just that the microphones are switched.

[*Translation*]

Ms. Monique Pauzé: Prof. Pollet, hydrogen currently comes from hydrocarbons, which has nothing to do with the energy transition.

What can the federal government do to promote green hydrogen?

Prof. Bruno G. Pollet: First, financial mechanisms need to be provided to increase renewable energy production capacity in Canada. I'm thinking in particular of wind, photovoltaic and solar energy.

Next, what is most important is the production of electrolyzers. Right now, I'm not hearing much about mega-plants in Canada. We can't compare Canada to the U.S. or Europe.

You may have heard the French government announce a few weeks ago that it is building four mega-plants for the production of electrolyzers. This is very important for the French economy.

So there are two important points. Not only should we try to increase renewable energy production capacity in Canada, but we should also promote the production of these electrolyzers, which are very important in this value chain.

Ms. Monique Pauzé: That's the first time I've heard anyone address this issue.

We had an academic appear as a witness. She said that one of the major barriers to the rapid acceptance of renewable energy was the lack of support for innovation in this area. So, there were technological, economic, regulatory and administrative barriers.

In your experience, which barriers are the most persistent?

Prof. Bruno G. Pollet: From a technology perspective, we need to try to improve product efficiency, cost, and so on. At the moment, electrolyzers are quite expensive, but if we increase their production, their price should go down. The Chinese, for example, are putting forward electrolyzers at $200, $300 U.S. per kilowatt. Right now we're in a market where prices range from $1,000 to $3,000 U.S. per kilowatt, so there's a lot of work to be done.

In addition, Canada really needs to develop financial mechanisms to give a boost to Canadian manufacturers who want to mass-produce these electrolyzers.

The Chair: Thank you.

I'll now give the floor to Ms. Collins.

[*English*]

Ms. Laurel Collins: Thank you, Mr. Chair, and welcome to the new members of our committee.

My first question is for Ms. Da Silva.

Energy workers are facing a transition away from fossil fuels, which is understandably creating a lot of anxiety. On the other hand, there are so many potential jobs in clean energy and clean technology. How do you see the federal government supporting the needed move, where we match workers and their existing skill sets with the jobs of the future?

Ms. Luisa Da Silva: The federal government needs to put investments into creating projects, and those projects will then create the opportunities for the jobs.

When we're speaking with people on the ground and talking to them about the opportunities, even just for transitioning, some people are becoming reticent to move over because of the looming recession. They'd rather stay with what they know than take a chance and go somewhere else. If you make it look more attractive to move towards something, I think you will see the movement of workers.

Ms. Laurel Collins: Thanks.

We absolutely need to make sure the jobs are there. The Alberta Federation of Labour is calling for urgent action to reimagine the energy economy into a clean economy and a clean-technology economy. Especially in light of the recent action of the U.S. on the Inflation Reduction Act, how might Canada be left behind if we don't act to match the scale and the urgency of this?

Ms. Luisa Da Silva: Yes, it goes back to what I said in my introduction, which is that for the fossil fuel workers it's just, “We follow the jobs.” That's what we've known for years. Wherever the jobs are—within Canada, in the U.S. or international—we go where the jobs are. That's what we're used to. If the U.S. goes into a boom from the renewables and clean energy, I suspect fossil fuel workers will follow the trend and move towards the jobs.

It will leave Canada behind, because right now we have a skilled workforce that can be implementing the energy transition, and that is found in the existing energy workers. They have been working on the ground and they know everything that's necessary, so we should be helping these workers to transition into the new jobs.

● (1625)

Ms. Laurel Collins: You talk about the need for real projects. Do you feel the approach the government has been taking so far has been matching the scale of what we're facing?

Ms. Luisa Da Silva: The money needs to follow with entrepreneurs, I think, and you need to be putting the funds towards being able to create the projects within the private sector. Having the government put funds towards an upscaling program—for example, like the ESDC program—is fantastic. That's what will get it started, but there needs to be that funding to follow through for the private sector to take on the projects.

Ms. Laurel Collins: We've heard about some interesting developments in clean technologies and the need to rapidly deploy climate solutions that are already available. We've also heard a lot of concern about the availability of workers.

One example is the greener homes grant. The government is running into the issue of not having enough energy advisers and auditors to do the required evaluations. Can you talk a bit more about the issues of workforce development?

Ms. Luisa Da Silva: It's a problem that's going to compound. I'm sure everybody in this room is also aware that people who work in skilled trades are going to be retiring, and there's going to be a shortage looming on the horizon.

We're going to see a compounding effect there, because often it is the skilled trades workers who work in these positions. The commentary is that there is this real urgency to get skilled workers into this industry, because otherwise we will be facing the shortages. That means we won't be able to move forward with these technologies, and we will be falling behind.

Ms. Laurel Collins: You talked a bit about the scale of investment in CCUS. What does it say about the priorities when you see that mismatch in terms of scales of investment?

Ms. Luisa Da Silva: For me, what it speaks to is that the oil and gas sector has been very dominant in Canada. There is this infrastructure that's already in place, so when we're looking to find a solution that fits within the existing infrastructure, CCUS would fit, but CCUS can't be that silver bullet, so the volume of investment that has gone towards CCUS is disproportionate to the available renewable technologies that are out there that will actually make a difference. CCUS removes a lot of the carbon at production, but then the fuels are still burned, so it still produces all of the fossil fuels.

Ms. Laurel Collins: There are some pots of money available for clean technologies.

The Chair: I'm sorry, but you only have time for a comment.

Ms. Laurel Collins: I'll just say that a theme that's clearly emerging is the need for an overarching industrial strategy, and I hope we get a further opportunity to talk about that.

Ms. Luisa Da Silva: Absolutely. Thank you.

The Chair: Thank you very much on that.

We're going to suspend. We will start again exactly 10 minutes after the vote result is announced, and we'll see how far we get. We won't have a lot of time left, but we'll see what we can do.

I suspend until 10 minutes after the vote result is announced.

Thank you.

● (1625)

_____(Pause)_____

● (1700)

[*Translation*]

The Chair: We're resuming the meeting.

We had to reduce the witnesses' time to a minute and a half, which will give us time for a four-minute round of questions. That'll take us to 5:30 p.m. exactly.

We usually extend the meeting, but we can't today for technical reasons.

Mr. Kirkpatrick, could you give your opening remarks in a minute and a half?

● (1705)

[*English*]

Mr. Jamie Kirkpatrick (Senior Program Manager, Blue Green Canada): I will do my best. Thank you for having me.

My name is Jamie Kirkpatrick. I'm with Blue Green Canada, and I'm joining you from Saskatoon and Treaty No. 6 territory.

My organization, Blue Green Canada, was founded in 2008, when Canada's prominent environmental and union organizations agreed that we can create good jobs, maintain good jobs and have a healthy environment across the country. We can be making and building renewable energy, using energy more efficiently, decarbonizing manufacturing and electrifying transportation. We can do that while protecting communities and involving workers in developing these technologies.

We're going to talk a lot about clean technologies and hear about the shiny details of those things. I've heard the previous witnesses speak about ways to reduce the CO2 per barrel of oil and improvements in nuclear technology, but I haven't seen anyone from workers' organizations, or anyone related to the actual doing of these things, present to this committee.

I would encourage the committee in future rounds, if possible, to make an effort to hear from workers who are in those sectors today, and those who will be making the transitions to using the clean technologies we're talking about.

The workers who are in the oil and gas sector now always hear about how important the sector is, but they see the job decline per barrel of oil. They see profits increasing, but not jobs increasing in their sector. Automation takes away those jobs, and that's clean technology in some cases.

Important considerations are needed for the workers of today, and the communities that they're in, through just transition programming and planning—

The Chair: Thank you very much. You have made the point very succinctly.

We'll go now to Mr. Duerr, who's here with Mr. Spady from Carbon Connect International.

Mr. Duerr, you have 90 seconds.

Mr. Al Duerr (Partner, Carbon Connect International Inc.): Thank you very much for this opportunity to appear before the committee and discuss Carbon Connect International's implementation of clean technologies in Canada.

Mr. Darcy Spady (Managing Partner, Carbon Connect International Inc.): Last year, under contract with the Alberta department of environment, we designed and implemented a baseline measurement program and a technology implementation program funded entirely by the carbon levy of large emitters in Alberta.

We provided program management for over 80 emissions reductions projects, real projects in Alberta. For the sum of $40 million, 15.4 million tonnes of CO2 equivalent were saved. These projects used off-the-shelf technology and existing service providers, and created clean-tech jobs. Many of these were in small communities. We did that.

Mr. Al Duerr: One of the big issues is, how do we continue this momentum? One of the things we strongly encourage the federal government to do is to continue to fund the implementation of methane emissions reduction technologies and take advantage of programs that are occurring across the country that are working right now. Just top those programs up.

The other key thing is, given that Canada is a world leader in methane emissions policy, regulatory and implementation, and has been that way for a long time, let's take that to the world. Let's internationalize it. Get our technologies into other jurisdictions and help elevate the industry around the world, not just in Canada. We've done it in Canada. We're continuing to do it. Taking that internationally, we can do that, and with a lot of existing resources, if we do it with our international financial—

The Chair: Thank you. I'm loath to interrupt the former mayor of Calgary, but it's a tough job I have.

[*Translation*]

I'll now give the floor to Mr. Létourneau of Kruger Energy for a minute and a half.

Mr. Jean Létourneau (Vice-President, Community Solar and Strategic Initiatives, Kruger Energy Inc.): Thank you for inviting me to appear before your committee.

Founded in 2004, Kruger Energy is a wholly owned subsidiary of Kruger Inc., a privately held company that is headquartered in Montreal and has been in business in Quebec for over 115 years. The company is owned by the Kruger family, with Joseph Kruger II, the founder's grandson, at the helm.

Kruger Energy has been in business since 2004 and specializes in developing and managing renewable energy power plants. We manage and operate 42 production sites, from wind, energy storage and solar power facilities to biomass cogeneration plants with a total capacity of over 542 megawatts.

My name is Jean Létourneau, and I am vice-president of Strategic Initiatives and Community Solar Development. I am currently leading the development of the community solar subsidiary in the Northeast United States and 20 projects at the development stage. I'm also leading the development of our first solar project in Guatemala. Lastly, I'm also responsible for a pilot project.

The three key factors that I would like to talk to you about are the long-term predictability of renewable electricity needs, the need to avoid stop and go approaches; engagement and integration of host communities, including first nations communities, and social acceptability; and a suitable and competitive environment for each of the renewable energy technologies.

Thank you for listening.

● (1710)

The Chair: Thank you, Mr. Létourneau.

[*English*]

We'll go now to Mr. Graeme Millen, from the Silicon Valley Bank, for 90 seconds.

Mr. Graeme Millen (Managing Director, Climate Technology and Sustainability, Canada Branch, Silicon Valley Bank): Awesome. Thanks, everyone, for having me.

My name is Graeme Millen. I am the managing director of climate tech and sustainability for Silicon Valley Bank in Canada, where I lead SVB's efforts to support and nurture the growth and success of Canadian clean-tech companies.

Prior to working with SVB, I dedicated over a dozen years to the financing, building and operating of clean-tech companies and clean energy projects.

For those who don't know, SVB was established about 40 years ago to be the financial partner for the technology innovation ecosystem. We now bank more than 40,000 tech companies globally, including 50% of all VC-backed companies in the United States, as well as more than 3,000 venture capital and private equity funds themselves. As a result, we have a pretty unique front-row seat at the intersection of innovation and capital.

SVB has been committed to supporting Canadian tech companies for the better part of 20 years, culminating in successfully receiving our Canadian banking licence in 2019. We now have a team of 50 across Canada, backed by a global team of 6,500 people.

The global and Canadian venture capital markets have been extraordinarily active in recent years, with a record $15 billion deployed by venture capital funds into Canadian tech companies in 2021. Despite current market volatility, the Canadian and global tech market remains resilient and well capitalized, with $7 billion of new investment already in 2022 in Canada. North American venture capital reserves sit at a staggering record of over $270 billion.

Trusted programs like SDTC, IRAP and SR and ED have been mainstays of enabling the development and early demonstration of critical technologies, particularly in clean tech. However, there remain two critical drivers to support the clean-tech sector's ability to meet our climate objectives while ensuring we build a robust, competitive economy. First, access to capital—

The Chair: Thank you very much.

Okay. We have time for one four-minute round, but really, four minutes maximum.

We'll start with Mr. Dreeshen.

Mr. Earl Dreeshen (Red Deer—Mountain View, CPC): Thank you very much, Mr. Chair.

Thank you to all the witnesses. Hopefully you can send in some more information if you feel you didn't have quite enough time.

Canada has some amazing entrepreneurs. Canadians care about our water. They care about our land. They care about the air, and they expect everybody to treat our amazing resources responsibly. In order to do that, as I have said many times, we have to make sure we measure any kinds of projects, or anything we do, from the first shovel that we use to dig something up to the last shovel to cover it up. I think that's really what's important.

Again, with Carbon Connect, you're talking about those metrics, and that's what's critical. Not only that, but you're talking about how the rest of the world can benefit from that great technology and the entrepreneurs we have.

I'm wondering if you could take it from that perspective and discuss how managing those metrics is important and how we fit in on the global scale.

Mr. Darcy Spady: In 2018 and for the year and a half on each side of it—so a three-year term—I was the international president of the Society of Petroleum Engineers. I've travelled to 49 different countries in about 75 visits, and I can guarantee you that the Canadian system and the policy we've had in place for 15 years is the best.

There are very clear metrics in the world, and we follow them. OGMP 2.0 is one. We're there, and the rest of the world is not. How we do it and how we influence the cradle to grave, the shovel to bury, is that we have our good practices shown throughout the world, and people are asking for it. We just need to be there. We need to be there with the trade commissioners. We need to be there backed by the World Bank and the African Development Bank—the IFIs—with Canadian dollars already in those banks. We need to be there globally to show that if they do what we do, they will be meeting and exceeding the global UN standards for their methane reduction.

Mr. Earl Dreeshen: Thank you.

To that same point, we talk about greenhouse gases. Whether they be water vapour, methane or carbon dioxide, all of those things are being measured. When we're talking about methane, the intensity is something that I heard you say in your discussion was most critical.

Can you give us an idea of some of the methane collection or projects you're aware of and things we are doing through funding?

● (1715)

Mr. Darcy Spady: I'll start, and I'll probably let Al finish.

In the world, nobody measures. We measure in Canada. The Americans like to talk about it and the Europeans like to estimate it, but we measure it, and we need to talk about that globally.

I'll shut down. Al, you go.

Mr. Al Duerr: It really is critical. We get lectured a lot. In the past, we were lectured a lot by the European Union about how terrible it was in Canada, with dirty oil and all of those things. We all have a way to go to improve everything we're doing here, but we also found at the same time that they were offshoring into Russia and into jurisdictions that didn't have any regulation. If we do anything at all, that's one of the things to bring up to elevate the whole industry.

We're doing it in Canada, but the biggest single impact we can have is if we can take this and help elevate the industry in the rest of the world. That takes resources, but a lot of these countries—especially developing countries—don't have the resources to do things like the baseline work that we're doing in Alberta and the kind of work that's being done here. Canada could be a major source of opportunity for them just in taking our regulatory environment, which is well developed.

Again, nothing's perfect here, but compared to everywhere else in the world, we're doing a good job. We should be really proud of that and leverage it internationally.

The Chair: Thank you very much.

We'll go now to Ms. Thompson.

Ms. Joanne Thompson (St. John's East, Lib.): Thank you, Mr. Chair, and thank you to the witnesses. I'm so sorry it's short. I was looking forward to this.

I'll start with you, Mr. Millen. Could you speak please to the role the federal government can play as a convenor in bringing that venture capital investment to industry?

Mr. Graeme Millen: One of the good things is that the federal government's already doing a pretty good job of leveraging private capital through programs like SDTC, IRAP, SR and ED, and SIF, for example. These are all fantastic programs, which are not only enabling the de-risking of some early stage technologies—which is being matched with private venture capital—but also attracting international capital into these companies.

For context, 50% of all venture capital rounds in Canada now have international participation, primarily from the U.S., of course. I think in many cases, it's because they're seeing that their dollars going into this business can go significantly further than if they put them into other jurisdictions.

One of the conversations that comes up commonly, in this committee and elsewhere, is what happens when technology companies have capital-intensive infrastructure they need to deploy. One of the tools we've seen deployed with massive success in the U.S., as an example, is investment tax credits. I'm aware that's a topic that's been discussed ad nauseam in this committee. Those are other tools that can further incentivize project development and more capital-intensive technology deployments, particularly.

Ms. Joanne Thompson: Thank you.

If I may, I'll switch to Carbon Connect and either one of you gentlemen. You've already spoken to this, but could you provide more detail on Canada's role as a global leader in the clean-tech economy?

Mr. Darcy Spady: Canada is an understated global leader, and this is our problem as Canadians. We want the energy transition to happen. We want to go to renewables. It is absolutely going to happen, but we can lead the way as a resource nation with the best technology. In specific clean-tech stuff—not just policy and consultancy—we also lead out there.

I'll let Al speak to that.

Mr. Al Duerr: For example, six years ago, in Calgary, we established the Methane Emission Leadership Alliance. Methane is one of those examples in which, as Darcy pointed out, 18,000 different facilities were reviewed to come up with a baseline. Many different producers did a lot of that background work. You then need the technologies. In fact, many of these technologies were in place.

In my other company, we had a technology we developed 10 years ago in solar chemical injection. It's one of the most cost-effective solutions to reduce methane emissions. I have some competitors, but there are other technologies. We have over 44 members in the Methane Emission Leadership Alliance. These are Canadian companies that are out there, doing it right now. They're not talking about it; they're implementing it, and they've been doing it for quite a few years.

That's the potential we have to take to the international community. We're not starting from scratch. In some areas—carbon capture, hydrogen and a lot of those areas—yes, we have a lot of work to do and there's a lot of R and D, but on the methane front, we can hit the ground running.

● (1720)

Ms. Joanne Thompson: Thank you.

Mr. Kirkpatrick I will switch to you now. As we pivot towards a clearer energy future that includes a just transition for workers in the coal and oil and gas sectors, one of the barriers from a labour perspective is that many of the jobs pay much better than other jobs do. What do you think would be the best way to overcome this barrier?

Mr. Jamie Kirkpatrick: I would look to the IRA—Inflation Reduction Act—as one tool to create and maintain good-quality union jobs in existing and future sectors. They've put investments in it across the board to maintain energy workers in their work, to train them to do work on clean energy and to do things like build electric vehicles instead of ICE vehicles. That's an initial step.

The Chair: Thank you. That's perfect.

Madame Pauzé.

[*Translation*]

Ms. Monique Pauzé: Thank you, Mr. Chair.

I'd also like to thank the witnesses for being with us.

It's unfortunate that we don't have a lot of time and that we can only ask a few questions.

Mr. Létourneau, it wasn't easy to have you here with us. We had technical problems the first time, and now I have barely four minutes to ask you questions. I'm just going to ask if you're available on Friday, from 1:00 p.m. to 2:00 p.m., because there will be another committee meeting, and I can invite you.

The company has invested more than $75 million in energy efficiency projects since January 1, 2018. Kruger paper mills are building on the success of energy transition and efficiency in its own facilities. No doubt, in-house expertise has something to do with it.

Regardless of the many jobs and billions of dollars that clean technologies promise, the fact remains that Export Development Canada, or EDC, sees exports as the key to the sector's prosperity.

Do you agree with that?

Mr. Jean Létourneau: We often have discussions with people from EDC who, following a change in direction, are also promoting companies that are dedicated to development and that are able, like us, to work on projects abroad.

Our first project, which was carried out in Guatemala, involved solar energy. For this project, all the electricity generated was used by a sanitary tissue and household paper mill. Unfortunately, at the time, EDC did not have the right mandate to be able to support us, so we had to rely on American financing and American suppliers.

However, our relationship with EDC is very good, and we are having serious discussions with them. Right now, we are looking at the possibility of establishing 20 plants, as I mentioned, in New York State. A development company will set up shop abroad to develop projects.

As for energy exports, that's a somewhat more precarious issue.

Ms. Monique Pauzé: Clean energy prosperity is possible here.

Don't you think so?

Mr. Jean Létourneau: Yes, it is.

Ms. Monique Pauzé: So far, you've talked a lot about New York and the United States.

Mr. Jean Létourneau: Allow me to clarify something. We have 326 megawatts of wind power capacity in Canada. Our latest project is for 24 megawatts, and it's in partnership with an indigenous community, specifically the Mohawks of Kahnawake. Here too, we are experiencing great success.

Ms. Monique Pauzé: You're very active in the wind and solar sectors, as well as in biomass cogeneration, hydroelectricity and storage sectors.

What support do you receive from the federal government for your project development and deployment activities?

Mr. Jean Létourneau: Solar and wind energy technologies are quite advanced, although the wind energy sector is well ahead.

In addition, it's important to have an environment that provides predictability. Development projects, from securing sites to selling electricity, take four to six years.

We need an environment that avoids the stop-and-go strategies. For five years, renewable energy is a very good sector, but then people think we have a surplus, which isn't the case. Because of the electrification of transportation and the demand for electricity, it’s going to be increasingly demanding.

Having a stable and predictable environment is key for us.

● (1725)

Ms. Monique Pauzé: Are you able to measure the amount of abandoned hydrocarbons and the economic impact of your facilities?

I think my time is up, so I'm going to have to ask you to give us an answer in writing.

The Chair: Unfortunately, we have to stick to a yes or no.

Ms. Monique Pauzé: I'd like the answer to be sent to committee members in writing.

The Chair: Perfect.

Mr. Boulerice, you have the floor.

Mr. Alexandre Boulerice (Rosemont—La Petite-Patrie, NDP): Thank you very much, Mr. Chair.

I'd like to thank the witnesses for being involved in this somewhat difficult exercise.

My first question is for Mr. Kirkpatrick.

Mr. Kirkpatrick, we know we have to make that energy transition. We can no longer continue to do what we did in the past because of the climate crisis.

Change means stopping doing things the way we used to, but there will be no energy transition if workers aren't involved in the process. It will have to happen with them and their families, because they deserve respect.

What do you think the federal government should do to support workers in this transition?

[*English*]

Mr. Jamie Kirkpatrick: We've talked around workers a great deal with this. We've talked about the great Canadian technology and the measuring that's been done and those sorts of things, but those are all being done by workers today who are not being invited to these tables and conversations. They don't have the same clarity regarding the clean technology future that some of us do perhaps, and they need to know that there's a place for them there.

A lot of these folks and their families are going to move further south to the States if the jobs just continue to grow there. There's a new, as I mentioned very briefly before, Inflation Reduction Act. It's a very strong piece of American federal legislation that is changing the landscape and switching the dominant forces of their economy from fossil to renewable or electric. I think they're doing that in such a way that they are talking about good jobs, the ability for workers to unionize and to maintain jobs within companies.

When we talk about clean tech and bringing people along, we have to talk about the people doing the jobs today, who are cleaning up their existing sectors but also planning for those future ones, and that's where we need the investments that have been discussed.

I know we don't have much time, so I'll stop.

[*Translation*]

Mr. Alexandre Boulerice: We have two minutes left.

[*English*]

Mr. Jamie Kirkpatrick: I was also going to say that you brought up the just transition, and it's been mentioned several times. The thing this government has done is that it has gotten part of the way first. We've talked about emissions reductions and new technology, but we've not yet done the job of talking to Canadians about how we're going to do this with them. That's the part that leads to a lot of these political conversations and difficulties, and where we have people taking absurd positions because it defends a political territory.

Clean technology is crucial for the future, but the person who built the first automobile rode a horse and buggy at work, so we need to make sure we keep those folks in mind and we allow them to help guide how we move forward as well.

[*Translation*]

Mr. Alexandre Boulerice: Thank you, Mr. Kirkpatrick.

There is no doubt that we need to do more to support workers. We need an industrial strategy to create good unionized jobs in renewable energy.

Mr. Létourneau, you are an expert in this area. You work in wind and solar energy.

What's the untapped potential in Quebec and Canada for renewable energy?

Mr. Jean Létourneau: In Quebec alone, we could add at least 3,000 megawatts of installed capacity.

We need to be more strategic in our approach to solar energy. I think solar power generation could be cost-effective in some areas where the resource is good, such as the Prairies.

However, the grid isn't stable in some places, so the combination of solar energy and batteries could be a good solution for some of our facilities in Canada to avoid having to invest in transmission or distribution infrastructure. Avoided costs are an important element.

We have battery facilities on New York Island, where utility company Con Edison decided not to invest in cables, but rather in batteries to make their grid more powerful.

The Chair: Perfect.

That brings us to the end of our meeting.

I want to say to the witnesses that I'm sorry their time was cut short. However, it was a fairly substantial discussion, despite the limited time. As they know, if they haven't already done so, they can always submit briefs, which will be useful for our analysts. Their ideas won't be forgotten. We'll take note of them.

I'd like to thank the committee members. We'll meet again on Friday at 1:00 p.m.

The meeting is adjourned.

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