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Chair

Mr. Leon Benoit

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● (1140)

[*English*]

The Chair (Mr. Leon Benoit (Vegreville—Wainwright, CPC)): I call the meeting to order.

It still is the morning. We are here to continue our study on innovation in the energy sector.

You have a point of order, Mr. Gravelle.

Mr. Claude Gravelle (Nickel Belt, NDP): Yes, thank you, Mr. Chair.

At the last meeting we had the minister appear. I am sure the minister didn't do it on purpose, but I would like to correct the record. I wouldn't want the minister to be accused of doing something on purpose, so I would just like to clear the record.

First, he stated he never had a request for a joint review panel for the massive Ring of Fire development. He said:

> I haven't personally received a specific request about that but we're very interested in how we can be helpful to advance development in Ontario's north.

As I said, I'm sure he didn't do it on purpose, but I want to show you this binder full of letters and petitions that went to the ministers. I would like to deposit this as information that the minister did know about a request for a joint review panel.

The Chair: Okay. I really can't speak to that, of course, Mr. Gravelle, but you have noted it. That is fine.

Let's get on with the meeting, then, and with the witnesses. I will now introduce the witnesses for today's meeting.

From the Quality Urban Energy Systems of Tomorrow, we have Brent Gilmour, executive director, and Mike Cleland, member, board of directors, and Nexen executive in residence at the Canada West Foundation. That's a long title, but it's good to know where you're coming from. Welcome.

From Devon Canada Corporation, we have Robert Dutton, vice-president, facilities and construction. Welcome to you.

Then, by video conference from Vancouver, British Columbia, from Clean Current Power Systems Inc., we have Christopher Gora, president. Welcome to you, sir, by video conference.

I apologize to all of the witnesses for the delay. It's something that happens around here, especially at this time of the year. Let's get on with the business of the meeting now.

We will get on to the presentations from witnesses in the order that you are listed on the agenda, starting with Quality Urban Energy Systems of Tomorrow.

Mr. Gilmour, are you going to start the presentation on that? Go ahead, please, with your presentation. You have up to 10 minutes.

Mr. Brent Gilmour (Executive Director, Quality Urban Energy Systems of Tomorrow): Thank you very much. We really appreciate that.

Good morning, everyone. Thank you for the opportunity to present on what QUEST—Quality Urban Energy Systems of Tomorrow—is doing to advance energy and innovation.

My name is Brent Gilmour. I am the executive director. I am joined here today by Mike Cleland, who is a member of the board of directors for QUEST.

We understand there is an immediate need to keep Canada competitive in a global economy in terms of energy costs, ensuring our communities are resilient and adaptable, and minimizing environmental impacts in a meaningful way. In the face of these challenges, integrated community energy solutions offer real value for improving efficiency, capturing lost energy, using all forms of waste as an energy source, and drawing on all types of local alternative energy sources.

QUEST was started by government, industry, academia, and environmental organizations to advance an integrated energy approach versus traditional silo thinking to energy issues in communities. As a national non-profit organization, we're working to make Canada a leader in the design, development, and implementation of integrated community energy solutions. For us, integrated community energy solutions are all about creating smart energy communities by linking energy to land use, buildings, transportation, waste, water, and related infrastructure. We are focused on mobilizing a national network of stakeholders to create and apply integrated community energy solutions. Our focus is on the importance of reducing energy waste, a central approach in the federal government's efforts to advance energy efficiency and innovation.

The solutions provided by ICES are wide-ranging. For some communities, this might mean capturing methane from landfills and using it to generate electricity. For other communities, it might mean taking advantage of solar or geoexchange systems for their space and water heating. The solutions are different for each community. At the end, they are all integrated community energy solutions.

ICES are happening, thanks in part to the continued and directed policy, technical, and innovative support of the federal government. Most recently, ICES was accredited in the report “Moving Forward on Energy Efficiency in Canada”, released at the energy and mines ministers' conference in Charlottetown, P.E.I. It concluded with the importance of ICES to advancing energy efficiency across multiple sectors and to a collaborative approach for energy innovation. This report and other studies by the federal government document the importance of ICES. More importantly, those involved with ICES are growing across Canada quickly, from industries such as manufacturers of solutions, such as GE and Siemens, to utilities doing new models of energy delivery, to academia who are training the next generation of professionals on integrated energy.

My colleague Mike Cleland is going to continue on with some more detailed examples and understandings of ICES.

● (1145)

Mr. Mike Cleland (Member, Board of Directors and Nexen Executive in Residence at the Canada West Foundation, Quality Urban Energy Systems of Tomorrow): Thank you, Brent.

Mr. Chairman, for the record, the long title is actually two different parts of my title. I am here as a member of the board of directors of QUEST.

For your reference, we've handed out copies of a deck. Brent has talked about QUEST in the context of communities more broadly. I'm going to talk about energy innovation.

Something that I'm sure is familiar to all of you is that energy is a long game, and so is energy innovation. Energy's built on long-lived infrastructure and involves natural resource development, inescapably. All of those involve investments that last for a long time. We're living today on energy infrastructure that was built 50 years ago. We will be using energy infrastructure 100 years from now that we're building today. In fact, our energy-using communities are even longer-lived.

Energy technology has evolved slowly but surely. A good example is the incremental improvements to internal combustion engines. Notwithstanding predictions to the contrary, internal combustion engines will continue a long way into the future, albeit in high-efficiency, hybrid applications. Other technologies have come up to the line, but have not been as successful. Small changes eventually add up to very big changes in environmental performance. Occasionally, we get surprises. Hydraulic fracturing has completely unhinged our expectations with respect to natural gas and increasingly with oil.

My point here is simply that none of us is very good at predicting the kinds of changes that might be coming along, and that includes government policy-makers. I think that says something about the way you need to approach energy innovation. Above all, we must remember that reliability and cost are critical. Big leaps that ignore those issues will lead to big surprises, and not very pleasant ones. Finally, public acceptance is fundamental. If we don't have the public with us, the best ideas in the world will go nowhere.

QUEST argues that innovation is about getting the institutional and policy environment right, after which the innovation will follow. I'm going to talk about two different things: policy principles that we need to guide the process, and some technical principles based on what we think is the right kind of engineering for energy in our communities.

With respect to the policy principles, a lot of these go into community design, or at least some of them do. I won't talk about all of them, but let me just flag a few.

It starts with price signals. That means avoiding subsidies, and it means thinking seriously about how you price carbon. It means managing risks and being flexible. You need to maintain technology and fuel diversity. You need to emphasize performance and outcomes in policy, as opposed to prescriptive approaches. Finally, policy should be stable, because investors need that stability.

Then there are the technical principles. The basic point here is that if we get the institutional and regulatory and policy environment right, investors are going to follow it, and they're going to follow it in this order. Small changes are what make sense. It starts with reducing your energy use, and it goes on from there. We need to use the grids strategically. Basically, we have the gas grid, the power grid, and increasingly a thermal grid. These need to interact, and they need to interact so as to bring in a whole variety of technologies that will improve the performance of our energy systems.

Integrated community energy systems are part of a long and growing list of innovations from across the country. Brent mentioned at the outset that this is happening, that serious organizations are engaged in this. That includes serious investors and communities putting these kinds of systems in place. We believe these will grow.

In remote northern Canada, we're increasingly starting to work. Here there isn't the big energy prize that there is in urban Canada, but there is a big prize for the people who live in those communities. There is a big opportunity to reduce the costs of sustaining energy systems in those communities, and there are all sorts of ancillary benefits, such as health benefits, that go with that.

● (1150)

I think this needs to be an increasing focus for what we do on energy innovation in Canada. We are, after all, a northern, resource-based country.

Let me wrap up with the last slide. It enumerates several areas of federal policy interest. I won't go through all of them all in detail. They're there and undoubtedly are familiar to you as committee members.

Let me just speak briefly to the first one: federal policy and organizational support. The amounts of money are small, but for an organization such as QUEST, they are absolutely critical. We receive project funding from Natural Resources Canada in the order of $70,000 or $75,000 a year.

We leverage that 10 times with contributions from private sector companies, foundations, and provincial governments. Part of the reason that turns into leverage is the fact that the federal government is taking this seriously, which is a signal to everyone else that this matters. Federal leadership is the critical starting point for this sort of thing.

Mr. Chairman, I'll leave it at that. Thank you very much for your time.

The Chair: Thank you very much to both of you for your presentation from QUEST.

We'll go now to Robert Dutton from Devon Canada. He is vice-president for facilities and construction.

Go ahead with your presentation, Mr. Dutton, for up to 10 minutes.

Mr. Robert Dutton (Vice-President, Facilities and Construction, Devon Canada Corporation): Thank you, Mr. Chairman.

Good morning, and thank you for the opportunity to provide information and perspective on your study on innovation in the energy sector. My name is Rob Dutton. I'm the vice-president, facilities, for Devon Canada Corp. Devon is an upstream oil and gas company with its Canadian headquarters in Calgary and nine field offices in Alberta and British Columbia. Our job is to responsibly explore for and produce oil and natural gas.

I and the 2,000 people who work for Devon in Canada are proud of the work we do. We believe it's possible to be a strong economic contributor to this country and be a leader on innovative land stewardship techniques. The team I lead, the facilities team, is responsible for building the infrastructure of our business. We build roads, install pipelines, and build the plants that process oil and natural gas. Ostensibly, we are in the construction business.

We are also a team of innovators. While in some cases it's about the use of new technology, for the most part it's about looking at old problems in new ways and coming up with collaborative solutions to improve our performance. As you can see, not all innovators are guys in lab coats. Like me, my guys are 20-, 30-, and 40-year veterans of the construction business, and they have a passion for finding better ways to do it.

The focus of my discussion today is an innovative solution we've come up with for the installation of small-bore pipelines. Just to add some context, you may be surprised to learn that there are hundreds of thousands of kilometres of pipelines just within the province of Alberta. On average, 13,000 kilometres a year, give or take, are added to that inventory. Of that, 85% are what we consider to be small-bore pipelines. Those are pipelines that are less than 16 inches.

Most of the pipeline network within that province is gathering oil and gas from wellheads. They aren't transmission lines. About 40% of that installation happens on agricultural land. Traditionally—and by traditionally, I mean in the very near and recent past—when a pipeline is built, the topsoil is segregated from the subsoil. It's stripped along a big stretch that goes down the length of that pipeline. When the pipeline is then lowered back into that ditch, of course the subsoil is put back, and so is that topsoil.

Without compaction, without a number of different elements, that ditch line will subside over time, which doesn't sound like a very big deal, but I know many of you represent areas with agricultural operations—I, myself, come from one—and know what this may mean to farmers. This method can reduce the quality of the topsoil and have a negative impact on crop growth and yield.

Sunken ditches aren't visible until a farmer drives over them, largely because the crop has grown over top. Why is that important? During a growing season, these depressions are passed over hundreds of times, forcing adjustments to speed, spray, and fertilizer rates, so to the individual farmer, there's a long-term impact.

We, of course, as industry, come back and do repairs to those lines, but we felt it was something we wanted to address more fully. For my company, for Devon, it meant some strained relationships and high repair costs to land and equipment, which were not acceptable to us. The innovative pipelining strategies challenge this 40-year-old standard practice I just walked you through. In partnership with Alberta's department of the environment, the landowners, our contractors, and people on my team, we turned that around.

Our focus was threefold. The first was conservation versus reclamation: if you minimize the impact initially, there will be less to reclaim later. Second was to reduce the industry impact of operations on the land. The third was to increase stakeholder participation in decision-making.

This isn't a very technical innovation. It really challenged a long-standing practice of how it was always done.

What we did was minimize the topsoil we moved, minimize the main pipeline trench to reduce the width of it, and reduce the amount of subsoil being moved, but the big one was that once the pipeline was lowered back into the trench, we came back and added the additional step of compacting that earth in and around the pipeline, and on top as well, to constrain that pipeline and to minimize the future impact that we would have going forward.

What did that get us? The stakeholders came together to solve a problem before it was regulated. Through that, a social trust was built between the agricultural community and our industry.

● (1155)

Depending on the project, we have seen very small to very large reduction in surface disturbance. To put that into perspective, Devon Canada will traditionally install between 150 and 200 kilometres of pipeline. In the three quarters of 2012, the amount of topsoil or deforestation that we avoided.... It's usually measured in hectares, and I obviously have to put it into something I can relate to, so it's football fields. Over 150 football fields of disturbance was avoided by using this technique.

We have not had to re-enter land to repair sunken ditches, and landowners expressed satisfaction with early engagement and results. Their farmland can, immediately after our work, return to workable condition.

It can also be done in frozen-ground conditions. Then we asked ourselves, if this could be done in agricultural land, why not forested land? We've done work in northeastern British Columbia and we've had great success in doing that, as well with our SAGD operations north of Cold Lake.

With this innovation, we decided to take it one step further. We've started to employ horizontal drilling techniques that have provided for the opportunity to have no trench at all. There are only intermittent bell holes where we can reach the extent of our drilling to connect to the next line that goes out.

In cooperation with the municipal government of Grande Prairie, which helped to build the centre of excellence in research at Evergreen Park, we have engaged the local community to make sure there's an area where we can test these techniques in real conditions.

It's taken us over five years to get here, and we still have a long way to go. We feel that the more exposure this technique can be given, the better the opportunity for others in the industry to have the opportunity to try it out.

A barrier to innovation is the fear of failure. Certainly that is something that has to be managed and mitigated. Although it sounds very simple and you ask yourself why this hasn't been done previously or in other constituencies, the answer is that there is a higher degree of technical expertise required to pull this off correctly.

On that note, I would extend the invitation to you or any of your colleagues to come and see this work in person. There's nothing like seeing it in person to gauge the true impact.

Thank you for the opportunity to tell our story. I would be pleased to answer any of your questions.

● (1200)

The Chair: Thank you very much for your presentation, Mr. Dutton, from Devon Canada.

We now go by video conference to Vancouver, British Columbia, to Clean Current Power Systems Incorporated and Christopher Gora, the president.

Mr. Gora, please go ahead with your presentation for up to 10 minutes. Thanks again for being with us today.

Mr. Christopher Gora (President, Clean Current Power Systems Inc.): Thank you for the opportunity to provide input on this question.

By way of a brief introduction to our company, Clean Current is a technology developer of river and tidal turbines that generate renewable electricity through water currents. We have been around since 2001, and I think it is safe to say that we're recognized as one of the pioneers globally.

I'll be giving a perspective on your questions from the standpoint of marine energy because that is where our experience lies. We sent over a document, so I won't repeat every word, but I will follow that general outline and the questions asked of us.

On where the marine renewable energy sector is at the moment, I would characterize it as being at the pre-commercial stage. There have been a number of R and D initiatives. The technology has been under development in a meaningful and material way for about 10 or 15 years, and in various other ways for the last 30 years. At the moment, there are also an increasing number of pre-commercial demonstration projects, consisting mainly of single-unit installations at either a test centre or another control centre where data can be gathered on performance and environmental impact and that sort of thing.

The next stage of the technology development, I would say, is to move from this pre-commercial stage to a commercial stage consisting of multi-unit arrays, either in rivers or in the ocean, in the form of multi-unit power projects.

In which areas is Canada a leader, and in what areas can it improve? It is safe to say that the U.K. is the recognized global leader in marine renewable energy. It created one of the first and the largest marine energy test centres and has demonstrated clear political support for marine energy. This has been demonstrated in things like funding for R and D and market studies and the like; funding for the creation of quasi-governmental, governmental, and non-governmental agencies; financial support for the demonstration of technologies; the introduction of feed-in tariffs and other market-pull mechanisms; and the active delineation of resources and, as of a few years ago, the active licensing of areas that can be exploited for tidal energy production.

That said, Canada is also recognized as one of the leaders. The vast majority of the work in this area is taking place in the U.K., Canada, France, and increasingly in Asian countries like Korea. As I said, Canada is recognized as a leader. It has, of course, an immense amount of potential resources and it has certainly contributed to the development of the industry in various ways. The test centre set up in the Bay of Fundy, Nova Scotia, the FORCE centre, is recognized worldwide and is one of the largest grid-connected test centres.

Of course, Canada is also a leader of in-river electricity generation. That is recognized by a number of projects that have taken place across the country, including here in British Columbia and a number of initiatives in Quebec. There are new initiatives popping up in Manitoba.

Although there has been a great deal of effort, there are certainly areas in which Canada can improve. The need for a greater number of funding mechanisms bears repeating, even though it sounds trite. Other areas include a more established feed-in tariff mechanism or other market incentive programs and a greater engagement of the academic community and more applied academic-industry collaborations. That is one of the things that stands out for me—and, by the way, I've just returned from an international tidal energy conference in London last week, where I got a very useful perspective on where the industry is and how things are progressing in the U.K.

● (1205)

In this area, academic and industry and governmental collaborations have struck me as being significant.

There's also a need to focus on how to accelerate the really strategic parts of this industry. There are some key challenges to generating energy, either in rivers or in the tides, and there are some significant obstacles that I think can be overcome if resources are targeted towards them.

I think we also need a better identification of our tidal and river sites. There are initiatives here in Canada that identify potentially useful and resource-rich sites, both in river and in tidal, but a more specific and targeted initiative would be very useful.

Finally, I think there could be improvement in the way that regulators approach this kind of energy development scenario.

As for what the most promising technologies are, I'll speak from the perspective of river and tidal. There's no doubt that there are some significant river innovations. Utilities in Quebec and in British Columbia in particular, but also elsewhere, have been participating in various demonstration projects in order to assess the performance and the viability of these technologies. Nova Scotia is revealing itself as one of the leaders in Canada in the marine energy sector, not only because it hosts the Fundy FORCE installation, but also because of its own feed-in tariff initiatives for both community and larger-scale tidal energy projects.

In building a viable industry, there are two main challenges: reliability of the technology and cost reduction, or cost-competitiveness. The reliability seems obvious, but it bears repeating that we operate in a very hostile environment. Rivers and most certainly oceans present a very difficult environment in which to operate machinery. Not only is it difficult to install machinery, but maintenance is also very difficult. To access machinery and equipment on a regular basis is certainly a challenge. The cost of building prototypes and performing larger-scale tests is high, and it takes a long time to develop a prototype, test it, and bring it to market. This is also very much a challenge for our industry.

At this point, I would most definitely like to add our voice of support for organizations such as Sustainable Development Technology Canada. We have benefited from support that SDTC has provided to us for our pre-commercial demonstrations. Without that support and without the funding we got, which we were also able to leverage with private funds, we would not be in the position we are in today. I would strongly encourage the government to further support SDTC.

What can the Canadian government do? I think number one on my list relates to scientific research and experimental development credits, SR and ED credits. I'm aware that as of January 1, 2014, capital expenditures for SR and ED credits will no longer qualify. I have to underline that this will have a very important impact on small and medium-sized enterprises like our own that are engaged in what is undeniably technology development with a high capital cost. Without the ability to access the kinds of tax credits that we have had in the past, we will be at a real disadvantage. One suggestion is that small and medium-sized enterprises should be exempted from this new rule under the SR and ED credit system.

● (1210)

The other way in which the Canadian government can assist is by developing and implementing a feed-in tariff that would apply to all marine renewable energy projects. We suggest that this type of tariff be applied to the life of the project. That sends a real message of predictability and bankability to the various players that need to be involved in projects.

We also think a one-window regulatory process is an extremely important element. We have recently been through a very rigorous regulatory process in Manitoba, which involved, I would say, over a dozen different departments and permits. It took a very long time and was very resource intensive.

Finally, we need shared infrastructure: I think initiatives like FORCE in Nova Scotia, to which the government has contributed, are really useful, and there should be more.

That brings my remarks to a conclusion, but I would hasten to say that there have certainly been many ways in which the Canadian government has supported renewable energy in the past. My remarks are by no means meant to be a criticism. Hopefully they are delivered as a set of constructive suggestions.

The Chair: Thank you very much for your presentation, Mr. Gora, president of Clean Current Power Systems.

We'll now go directly to questions and comments, starting with a seven-minute round. Mr. Anderson, you have up to seven minutes. Go ahead, please.

Mr. David Anderson (Cypress Hills—Grasslands, CPC): Thank you, Mr. Chair. I'd like to thank our witnesses for being here today.

We don't have a lot of time, but Mr. Gora, would you take a couple of minutes to identify what specific technologies you are working on? You mentioned various technologies. Could you quickly give us a summary of what some of those might be? Where do you see the real promise being in the future, in terms of the technologies you're dealing with? Do you see one that stands out for the next five to 10 years? Where do you think your industry is going?

Mr. Christopher Gora: As I said, we developed turbines for the generation of electricity through water currents, so we currently have two product lines. One is for river currents, so it's a smaller turbine that will sit on the riverbed and generate electricity through the current. The second product line, which is effectively a scaled-up version of our river turbine, would be installed in the ocean to generate electricity from tidal streams.

Our unit looks like a jet engine. It has a set of blades inside a ducted device.

In terms of where I see the shorter term, the five-year to 10-year horizon, I think the most promising applications of our technology, or technology like this, is on the river side. It would be with off-grid or remote-grid communities. These are communities that spend a great deal of money on diesel generation.

A study was recently undertaken to look at the sources of energy generation for these remote communities. A vast majority of them still generate with expensive diesel. I'm told that in Quebec, in the north, diesel generation cost can be as much as $1.40 per kilowatt hour. We see a real opportunity here not only to introduce a renewable energy system, but to introduce one that will save these communities money.

In terms of tidal generation, there are a very few key areas in Canada that have strong tides that do have a real potential to generate electricity. The Bay of Fundy is the most obvious, but it is certainly not the only one.

There is a cost-competitiveness challenge right now. That challenge can certainly be met in the next five to 10 years, but it will take a multisectoral approach from industry, academia, and government.

● (1215)

Mr. David Anderson: You talked a little about commercialization challenges. cost-competitiveness is one of those, and reliability of technology as well.

Mr. Dutton, you'd argue that yours is probably cost-competitive already and on the market.

QUEST, you've been at the committee before. We've had some of these discussions about the cost-competitiveness of integrated systems prior to this as well. Have you been able to deal with some of those challenges over the last few years? We probably spoke four or five years ago. How are you dealing with those challenges of cost-competitiveness?

The Chair: We'll hear from QUEST first. Go ahead, Mr. Cleland.

Mr. Mike Cleland: I'll start, and Brent may want to add to this.

One of the key things is doing it incrementally. By that I mean there are examples of projects that have been built, and if you don't overbuild supply beyond what the load will take, you can make it work.

Another one is putting the infrastructure in place that will allow you to bring in renewable sources but also use natural gas. I'm not here to advocate for natural gas; it's just that at current prices, if you're putting in thermal systems, you can run them on natural gas but you can also have them set up so you are able to incorporate solar, geothermal, biomass, or other sources.

If you take it in small bites and demonstrate the technology and its application, you can get at some of the cost issues incrementally. That's one approach, at least.

Mr. David Anderson: Okay. Good.

The natural gas situation has changed since you were here last, I think.

Mr. Mike Cleland: A little bit.

Voices: Oh, oh!

Mr. David Anderson: Mr. Dutton, you're comfortable with your....

You're commercialized, so that's not an issue for you folks in terms of cost-competitiveness and so on.

Mr. Robert Dutton: Not in the same way, no.

Mr. David Anderson: Okay.

To switch direction, how do you see your innovations and the things you folks are doing influencing either international markets or international technology developments? You talked a little about how you're tied into the international level. I think Mr. Gora probably will have something to say about this a little bit later.

At QUEST do you deal externally as well? We know you're doing a good job internally within the country. I'll let you answer those questions.

Mr. Brent Gilmour: We recently hosted an international conference, so directly on that point, we had representation from Alaska, from China, and from of course Scandinavia, particularly Sweden.

The point here is that the innovations going on there are reflective of what we're seeing here in the sense that the people focusing on community-scale applications, such as thermal energy systems, as Mike was referring to, are looking to deploy here in terms of business operations and opportunities.

Our focus in Winnipeg was reflective of the Government of Canada's encouragement of international investment. I think we're starting to see that now in integrated community solutions, such as—

Mr. David Anderson: If I can I interrupt you for a second, did you see anything there that would be promising technology for the next decade? Did anything stand out?

Mr. Brent Gilmour: I think what you're seeing now is a lot more focus on waste-to-energy and how you can apply that. The conversations, particularly for communities, were on landfill; gas capture was another big area, particularly because of the stress that communities are facing where they can't flare anymore, particularly in Ontario, and what innovations can be brought forward so that they can turn that to renewable natural gas. That has been a real point of conversation as well.

That's what we're seeing. I'm not naming companies, but there were companies there—Bizcat, an international company, and Ericsson—all with existing technologies in play throughout Europe, looking to see if they had application here.

If you were to look anywhere here to see what was going on as international opportunity, the city of Edmonton would probably be your first example. You'll see Ericsson and some other big companies trying to install.

Mr. David Anderson: Okay.

Mr. Dutton, I think I'm probably running out of time fairly quickly, but your technology obviously can be applied internationally. Have you done anything to develop that or to carry that forward?

● (1220)

Mr. Robert Dutton: We have not taken this internationally. We're really focusing on trying to establish a toehold with our peers and competitors within the western Canada sedimentary basin. We don't enjoy international operations any longer, so we don't necessarily have international exposure.

The Chair: Thank you, Mr. Anderson.

We go now to the official opposition.

Mr. Julian, go ahead, please. You have up to seven minutes.

Mr. Peter Julian (Burnaby—New Westminster, NDP): Thank you very much, Mr. Chair. I'll be sharing my time with Mr. Nicholls.

I thank our guests today. You're giving us a lot of food for thought.

I'll start with you, Mr. Gora. You said you didn't mean to be critical, but...well, obviously the government is falling well short of where it needs to be in terms of providing supports. When we look at what's happening with research and development, the ending of SR and ED, and when we look at what's happening with energy efficiency programs being wrapped up, we're seeing that this government is falling far, far short of what's needed.

We have a worldwide market of $1 trillion, moving to $3 trillion, and we're seeing from this government systematic cutbacks in the kinds of programs that can actually facilitate research and development here in Canada in green energy. The reality is that we're falling further and further behind. It's simply not taking advantage of where Canada should be.

I'll start with you on the issue of tidal power. We have the world's largest coastline. We should be innovative leaders. We have one project in Nova Scotia, as you mentioned.

Do you not see this as a sea change that the government has to go through to support these green technologies and look to providing support, not only for the project in Nova Scotia but for projects right across the country?

The Chair: Mr. Gora, go ahead, please.

Mr. Christopher Gora: I'll answer that question by saying that we're at a stage, in terms of tidal energy particularly, where we need to cross what is essentially a difficult gulf—namely, from a pre-commercial stage to maturing the industry as a real and viable generator of power, a real player in the industry.

I would underline that it certainly will require collaboration and support from academia, industry, and government. The sea change is coming. I certainly witnessed it in the U.K. in the sense that there were strong policies, with strong support and a strong desire to coordinate these three sectors of the industry.

My point is that I think Canada can look to the U.K. as a good example of that, and build on what it's already done.

Mr. Peter Julian: We have to note that Canada is the last in the industrialized world in public investment in R and D, last in patent development, and second-last in the production of doctorates, so we obviously do need to go through this sea change that you mentioned. The current attitude of the current government simply isn't acceptable.

I'd like to move on to the QUEST folks. You mentioned that energy efficiency programs are the foundation. We've seen ecoENERGY wrapped up. Do you feel the government really should be investing in energy efficiency?

Certainly in the official opposition, the NDP feels very strongly that energy efficiency programs are a real foundation for bringing to bear energy savings both for individuals and also for the types of communities that you're envisaging.

Mr. Mike Cleland: I'll start, and I'll admit to something of a conflict of interest: I was the assistant deputy minister of Natural Resources Canada in the 1990s and was responsible for a lot of the energy efficiency programs there. They grew a lot after that.

The basic point I want to make is that there is a foundation of basic energy efficiency programs that you need to have, including information—what I'll call, if you will, the wholesale end of energy efficiency—where national leadership is absolutely critical. A lot of the retail energy efficiency programs should be delivered, I believe, by the provinces and by utilities through demand-side management programs, but without that kind of federal infrastructure, that foundation, it's really very difficult to do it. I think the federal government has provided leadership on that over more than two decades, and that needs to continue.

Mr. Peter Julian: I'm going to pass my turn to Jamie Nicholls.

Mr. Jamie Nicholls (Vaudreuil-Soulanges, NDP): Thank you.

I'm going to continue with questions to QUEST.

Mr. Gilmour and Mr. Cleland, this is obviously not the first time you've testified before this committee. You're somewhat veterans of this process.

I believe in 2009 there was a federal road map developed about integrated community energy solutions. I'm sure the government has acted on some of the recommendations in that road map, but in the interests of improving performance, could you maybe address some of the places where we could improve on that road map and achieve the targets that were set out in it?

● (1225)

The Chair: Go ahead, Mr. Gilmour.

Mr. Brent Gilmour: Thank you.

One of the key aspects of that road map that was endorsed unanimously by the Council of Energy and Mines Ministers in their presentation of it at the rollout in 2015 was the actual application of what people had encouraged and thought was beneficial from both a federal and provincial standpoint.

In the lead-up to that, the thought was to invest in the demonstration and pilot projects to help understand what the cost opportunity or benefit might be and how you could advance certain applications, whether it's run of the river, as we're hearing about, or other types of applications, such as a thermal grid network opportunity or solar thermal energy or all of the above. That was one area I think we would like to continue to see move forward, that opportunity to partner with industry. We're starting to see those initiatives, such as SDTC, being a key aspect for that.

The other area we were hoping to see was a continued focus on the policy application. In that road map they outlined the importance of energy efficiency, as we've just touched on. I think that underscores the notion of infrastructure. Infrastructure is something that isn't always seen as directly aligned with energy, but it is. We have to realize that the important part was understanding that as you invest in infrastructure across Canada for roads, water, sewers, buildings, or transportation, that has an energy impact and has an energy demand.

Mr. Jamie Nicholls: So all those investments should be looked at with a sustainability focus.

Mr. Brent Gilmour: Exactly, and that was one of the underscoring aspects encouraged by the road map: to understand what that impact might be.

Mr. Jamie Nicholls: Mr. Cleland, you mentioned signals. Other witnesses who have come before the committee have said the same thing: that the role of the federal government can be to send a signal to investors and basically globally about the direction we're going.

We see that the government has $1.3 billion in oil industry subsidies, and I was somewhat shocked that your organization receives $75,000. Was that the number? That seems to be sending a signal that.... I would prefer to see a stronger signal sent, putting your organization higher in terms of the importance that's given to investment by the federal government.

How could we strengthen this signal toward the transition to renewables and what you mentioned, the multi-modal energy, and how we can develop systems that use multiple sources of energy? How could the federal government send that signal?

The Chair: Could you be very concise, Mr. Cleland, as Mr. Nicholls' time is up?

Go ahead, please.

Mr. Mike Cleland: I'll be very brief.

First, I would not want to comment on the number with respect to subsidies to the oil and gas industry. I'm not sure that I know the facts.

We listed several areas where we see the federal government having a role in support of what we're doing. The answer would be to continue doing what you're doing. Brent talked about demonstration projects. That would be a big step, and that would be new money. That would be the prize, if you will.

The other one that is really obvious is that as you support infrastructure development, as Brent said, that be taken into account in projects. Of course SDTC, which is increasingly working in this area, maintains support there, and I encourage it to work in this area.

The Chair: Thank you very much.

Thank you, Mr. Nicholls and Mr. Julian.

We go now to Ms. Duncan. Welcome to our committee today.

Do you want to question the witnesses? Go ahead, for up to seven minutes.

Ms. Kirsty Duncan (Etobicoke North, Lib.): I have seven minutes; okay.

Thank you, Mr. Chair, and thank you to the witnesses.

I have a question for Mr. Gora. How would you qualify the current state of funding of R and D and innovation in the Canadian energy sector, please?

Mr. Christopher Gora: I can qualify it by our own experience, which is that it involves a very critical mix of R and D tax credits, because in our business with our long development timelines, we spend a lot of money on labour and on capital costs because we're building demonstrators, we're using test sites, and that sort of thing.

Having the tax credits at our disposal is very important. So is the project funding for demonstrator projects, etc. That allows us to engage with industry and other potential investors to participate in projects and effectively leverage the money we've received. Again, SDTC has been very useful in this regard.

The creation of FORCE and the support for FORCE from various levels of government is a great signal. That is one aspect that has put Canada on the map in terms of the tidal energy industry. People around the world now recognize that Canada is a player and has this resource. For us, of course, that provides us with an opportunity to test at a larger scale in what is a very energetic place.

● (1230)

Ms. Kirsty Duncan: In order to keep the industry moving along, you've been very clear about SR and ED. What specific recommendations would you make to this committee in terms of project funding? You've made some recommendations about tax credits. I'd like to hear about project funding. I'd like to hear what recommendations you'd make regarding SDTC and even non-fiscal policies, please.

Mr. Christopher Gora: In terms of project funding, because this is going to be and still is relatively unproven technology, there is a certain discomfort among investors who have a range of options in front of them in terms of the energy projects they can invest in.

One of the keys to creating a viable tidal energy market or industry, for example, is to actually build in or introduce some safeguards or some initiatives that provide that level of security. Feed-in tariffs are just one example of that kind of mechanism, and so are power purchase agreements. I acknowledge that's not necessarily within the jurisdiction of the federal government, but that at least provides a solid foundation on which project developers can bank, because they can now show that there's a revenue stream for the life of the project that will enable them to raise more funding.

In terms of the specific—

Ms. Kirsty Duncan: The more specific you can make it, the clearer the recommendations will be to the committee.

Mr. Christopher Gora: Sure.

Again, one of the recommendations is.... I know there was a feed-in tariff introduced with wind through the WPPI initiative. I don't have the full name in front of me right now. That was an example of a mechanism that probably spurred on a great deal of project development. That, again, is a very important point.

There are probably going to be a few more pre-commercial projects as we get into multi-unit arrays and that sort of thing. Real, substantive funding to enable those kinds of projects to go forward is extremely important. SDTC comes to mind, but only as one potential source of that project support.

Ms. Kirsty Duncan: What would be other sources beyond SDTC?

Mr. Christopher Gora: I've already mentioned tax credits. We have a situation in which effectively we need a fairly significant source of funds for our projects. Where do those funds come from? For us, they come from our investors. The way we get investors is to demonstrate that this is an industry that, even if it's not mature today, has a strong possibility of becoming a significant player in the energy production field, which means that there are potential revenues there.

From the government side, what does that mean? That means for us that the government has taken a really substantive interest in the resource, that it's dedicated resources to identifying areas that are going to be good energetic sites, and that it's actually starting to put into place policies and mechanisms for leasing those sites, for actually making those sites available to project developers.

Ms. Kirsty Duncan: What policies and mechanisms would you recommend to this committee?

Mr. Christopher Gora: The very first step that needs to be taken is to delineate the resources across this country and to identify, in terms of tidal energy and also river hot spots, areas that have good flow regimes and decent access to the grid for the example. If there's no decent access to the grid and you have a remote community situation in which you have expensive diesel being purchased, the first step is to get data and information and really focused analysis. After that you have to put into place a regulatory structure that is predictable and understandable and fair so that it will attract various companies—and not only from Canada, I would add.

This is a global industry, and we rely on the expertise of complementary companies from Europe and other parts of the world so that they can come to Canada, look at the landscape, and be able to say with some confidence, “Here are some good resources. Here is how the leasing or the licensing of sites will work. We can wrap our heads around that. Now let's see if we can put together a business plan based on our own financial resources and on the kind of investment that we might be able to get through banks and funds and potentially even the government.”

● (1235)

Ms. Kirsty Duncan: If you have any recommendations you'd like to make to the committee, you have 15 seconds.

Mr. Christopher Gora: I think I've covered the gamut. I think it requires funding support but also policy support and a really positive and concrete structure around how this resource will be exploited in the future.

Ms. Kirsty Duncan: If there is policy support or policy recommendations you'd like to share with the committee at a later date, please send them in.

Mr. Christopher Gora: Absolutely.

The Chair: Thank you, Ms. Duncan.

We will go to the five-minute round.

We'll start with Mr. Leef and then Mr. Calkins.

Go ahead please, Mr. Leef.

Mr. Ryan Leef (Yukon, CPC): Thank you, Mr. Chair.

Thank you to our witnesses for attending today.

It's always great to be able to follow the preamble that Mr. Julian tends to make when he introduces his comments. It got me thinking that he makes Canada seem so horrible that if we could only find a way to remove the dark cloud they cast upon the country when we talk about these things and then somehow harness the sunshine that appears to be emanating from their backsides, I think we'd be a world leader in solar technology. I know you're here to provide advice to us, but maybe consider that as an option to explore as an innovation.

Mr. Gora, you mentioned that the provinces of Quebec, Manitoba, and British Columbia have expressed interest in development and are participating in project trials. What level was that driving up from? Was it from a municipal or provincial level, from industry, or from multiple levels of interest?

Mr. Christopher Gora: I was specifically referring to involvement by both provincial governments and utilities. There are obviously some large utilities involved that are exploring other alternatives in energy generation. I would say it is less the case in our business on the municipal level, although I'm certainly aware of municipalities, Vancouver included, that are quite involved in other kinds of technology development.

Mr. Ryan Leef: Thank you.

You listed some of the challenges. I noticed you didn't list as a challenge or barrier any sort of social or environmental concerns. Maybe I could just get you to comment. We've seen projects like wind energy come up, and some communities just don't want them. They're in favour of cleaner, greener energy, but they don't want them in their communities.

How is the public receiving these technologies in terms of that social aspect, and are there any environmental challenges that you see facing this innovation?

Mr. Christopher Gora: In terms of our industry, we're certainly not saying that there aren't concerns meriting further study. Our point on the environmental front was that we need to coordinate various levels of environmental review and make it a streamlined process.

I can tell you that in terms of our own industry, yes, we have to respect and consult various stakeholders. In tidal energy, those stakeholders include water vessels, the fishing industry, and that sort of thing. Without very robust stakeholder consultation and communication, I think we will see opposition to these projects simply because people don't know.

I know that the various levels of government and other technology developers, including ourselves, do undertake environmental reviews. So far, in terms of our own projects, we did an installation off the coast of Vancouver Island, specifically at the Race Rocks environmental reserve. We had to do an environmental.... We did a baseline assessment, and then we did an assessment of the effect of our turbine in the water. We came up with positive results, but that doesn't mean that.... I think this process has to be repeated in future projects, but it's the coordination that we're really pushing for.

● (1240)

Mr. Ryan Leef: Thank you, sir.

Do I have a bit more time, Mr. Chair?

The Chair: You have a little over a minute.

Mr. Ryan Leef: That's great.

Mr. Gilmour, you listed in your deck some of the communities you've operated in. Do you have an idea of just how many communities across the country you're working in? Do you have any specific northern locations? Maybe you could just touch on any of the challenges or differences between northern locations and other parts of Canada that would be of interest to the committee.

Mr. Brent Gilmour: Sure. Thank you very much.

In terms of the total number of communities engaged in the application of integrated community solutions, our hope is to have all of them, and there are 5,400 across Canada. The intent, though, is that you could assume that every major city over 50,000, say, is trying something in some regard.

We are documenting at this time, with support from Natural Resources Canada, how many communities are actually doing integrated community solutions on some scale. Right now, we have 65 to 75 that we've just pulled together, but it all depends on how you define them.

When you start looking at northern and remote communities, you see that their challenges in terms of energy are the same. They need electricity and they need heat. In terms of what they rely on primarily for electricity, of course, it's diesel; there are 300 off-grid communities. At the same time, they might also require other types of fuel—oil for heating, maybe—and what they're looking at is that the prices and costs are of course escalating, particularly as they have to fly it in. What we're looking at in the hope of encouraging it is what could be done locally. Could they be looking at alternative sources of energy that might be there already, whether that's biomass or others?

We have a couple of communities to highlight. Beaverlodge is one. High Level is one. These examples are communities in Alberta; they wouldn't be so much remote or northern. They are communities that are still on the grid, but they're looking at combined heat and power, as examples, and at drawing on local biomass sources for what they could be doing to offset their activities. When we start looking even further, up into the Northwest Territories, Yukon, and Nunavut, they get into creatively different challenges.

Mike, would you like to add anything?

The Chair: Actually, Mr. Leef's time is up, so maybe someone will give you an opportunity to go that way later.

We have Mr. Calkins for five minutes, followed by Ms. Liu.

Mr. Blaine Calkins (Wetaskiwin, CPC): Thank you, Chair.

I just wanted to remind committee members of one particular change in SR and ED. If we go back to the budget document in 2012, the expert panel that made recommendations on the budget implementation talked about some of the problems that our country is facing. From a perspective of per capita investment in R and D in the higher education sector, Canada is faring better than Germany, the U.K., France, and all of the other G-7 countries. However, in business investment in research and development, as a share of our economy, Canada is lagging behind, so when Mr. Cleland and Mr. Gilmour talked about the 10:1 leveraging ratio, I think that's exactly what our budget changes were proposing to effect.

In fact, the budget document says, “Canada lags behind peer countries in leveraging government procurement to promote private sector innovation”. The key recommendation was to “shift resources from indirect support through the Scientific Research and Experimental Development Tax Incentive Program to direct forms of support, including the Industrial Research Assistance Program”.

This is a large amount of money. We're basically talking about $1 billion, I think, going directly into that particular set of programming, and another $500 million into venture capital, which was going to help companies like yours, Mr. Gora, and everybody else's here at the table.

With the record corrected, I would like to ask a few questions of the witnesses who are here today.

Mr. Dutton, I grew up on a farm and I've seen pipelines go through. We have them across our property. I'm a little curious about line location and if there's been any innovation on this matter. That's a big issue when you have as many kilometres of pipeline as we do in Alberta.

Second, my observation has been that any time we have a disturbance from a pipeline that goes through our land, the most productive land in the subsequent years is usually that patch of land. You can see the dark, more green, more lush vegetation growing over where a pipeline has just gone through—and you can see that for several years, notwithstanding the depression. I'd like to know a little bit more about how your compaction technology works, if you can explain that in the time that's provided.

Mr. Gilmour and Mr. Cleland, I'm very curious about this. Places like Drayton Valley in Alberta, close to my riding, have things like the Bio-Mile. There's a lot of support at the municipal level to get involved in these kinds or projects. I'm curious: what are some of the barriers?

When I used to be on municipal council, the idea of creating a community with a common power source that would be off the grid but connected was an attractive one. Such a power source might use wavestreams from a lumber mill, or whatever the case might be, to provide heat for a number of buildings, municipal and residential. Byproducts of electrical generation from a biodigester, for example, might be used to power the homes in a different type of grid system.

One of the key barriers to success in such projects is that some of this technology is so new that many of the contractors and developers aren't aware of it, and neither are some of the people who work on the ground. Are there some barriers there that you could identify? I'm wondering if the Government of Canada could provide some assistance in making sure we have the boots on the ground to provide the training to get people with the knowledge to come and install something. For example, if you're putting a solar panel on a roof, you might have an electrical engineering certificate, but you might not have studied that in school or in your area of expertise. If you're a journeyman electrician, you might not have the capability or knowledge to do a project like this, so the will might be there, but the ability to deliver might not be. I'm wondering if there are any gaps that can be addressed.

Mr. Gora, please answer me quickly. I don't know how much time I'm going to have after my rant.

● (1245)

The Chair: You have 50 seconds, Mr. Calkins. They're going to be brief answers.

Mr. Blaine Calkins: I'm sure the magnanimous chair will allow some complete answers. What are we looking at for a price-point entry on, say, a generation system that would sit in a river or a stream, and is it capable of powering a home?

The Chair: We'll go to Mr. Dutton, and we'll see if we get beyond your answer.

Go ahead, please.

Mr. Robert Dutton: With respect to line location, ground disturbance is a major concern for us, and line strikes are something that we take very seriously. Over the course of time, we have in a more complete way taken ground disturbance to a new level with respect to how we implement it. I'll leave it at that for the moment.

Our compaction techniques employ things like sheep-foot compactors. We use narrow compacting equipment, rollers and tampers. Some of the lines require some fairly exquisite geometry, but they've been made for this purpose.

Mr. Blaine Calkins: Will it improve the ability to drive large equipment over the line in the future? If it's compacted well, it protects the line, right?

Mr. Robert Dutton: Absolutely. In fact, the line is in a better condition when it's left after this is implemented. What happens over time is these lines become constrained through natural compaction, and that provides a more integral pipeline. Compacting it after it has been installed makes for a more complete installation.

The Chair: Thank you, Mr. Calkins. Your time is up.

The witnesses may get a chance to answer those questions, if others ask the same questions.

Ms. Liu, you have up to five minutes. Please go ahead.

Ms. Laurin Liu (Rivière-des-Mille-Îles, NDP): Thanks.

I'd invite my colleague to familiarize himself with the changes to SR and ED. As we know, only a portion of the funds invested from SR and ED were reinvested into IRAP and other programs to support research. If the witnesses have any further comments on SR and ED to table with committee, I'd invite them to do so.

My question is for Mr. Cleland. You mentioned pricing carbon and policy stability in your presentation. If the Canadian government decided to respect its international engagements concerning reduction of greenhouse gases, what impacts would this have on your sector in particular?

Mr. Mike Cleland: Let me take it back to the premise of your question, which goes to carbon pricing. I am not going to comment on the government's respecting its obligations or not. On a personal basis, I think Kyoto was a vast overreach, and it didn't surprise me at all that we haven't been able to meet it. This is harder than anybody thought when we were doing this in the 1990s.

One thing is for certain, in my view and in the view of my colleagues at QUEST: if we are going to get at carbon, we need to get at all of the carbon in the economy, and we need to do it as efficiently as possible. The only way to do those two things is through pricing.

● (1250)

Ms. Laurin Liu: Thanks.

I'd like to share my time with Mr. Julian.

The Chair: Go ahead please, Mr. Julian. You have three and a half minutes.

Mr. Peter Julian: Thank you very much, Ms. Liu.

I am going to share my time with Mr. Nicholls, so we're getting all our questions out.

Mr. Dutton, I just want to come briefly back to what you raised around the innovative pipeline strategy. This is a real issue. Pipeline safety in Canada is increasingly a matter of concern to a lot of Canadians right across the country. The whole issue of best practices and the lack of government regulation is something that comes to the fore.

Could you give us in a few words what you think the regulatory framework should be, so that all companies—and I'm thinking particularly of some of the bad apples that had spills that were caused through negligence—would have the same standard of safety applied and some of the good practices you're bringing would actually be current throughout the industry?

Mr. Robert Dutton: With respect to the current environment that regulates pipeline construction and installation, it's my opinion that what currently exists is absolutely adequate. What we've innovated is simply an installation technique that doesn't necessarily affect the final product, per se, but it does affect the installation. Where we have focused our intention is on minimizing our environmental footprint and making sure we have done as little harm as we possibly can in the installation of our pipelines.

Mr. Peter Julian: I certainly appreciate your message on that. The reality is the public would not share any statement that says the regulatory framework is adequate right now. There is increasing concern in the public right across the country because of the spills we've seen over the last few months.

Thank you for that, and if you have any specific suggestions to make to committee, if you could follow up in writing, it would be very helpful.

Mr. Robert Dutton: Certainly.

Mr. Peter Julian: I found your presentation very interesting.

I'm going to pass my turn to Mr. Nicholls.

Mr. Jamie Nicholls: Thank you, Mr. Julian.

Going back to Mr. Gilmour and Mr. Cleland, I'm glad you mentioned the long game about energy, because it truly is a long game. Transition through renewables isn't going to happen tomorrow, obviously, but we have to start on that path.

One of the challenges to implementing renewables is the implementation of a smart grid. The sums involved in making that smart grid across Canada will be substantial and will require a vision that goes beyond the current electoral cycle. I'm happy that you mentioned that.

I'd like you to address that briefly and also this fact: Canada is not in the top 10 innovators, according to the World Economic Forum, but a lot of the countries that are in that top 10 have embraced renewables. These are countries like Sweden, Denmark, the Netherlands, and Switzerland.

Could you address where Canada stands vis-à-vis those international partners and how we can improve? How can we get into that top 10?

The Chair: Mr. Gilmour, go ahead.

Mr. Brent Gilmour: Thank you.

I'll start with the last question first. I think what we're seeing across Canada is it's a long game, but we're catching up. I think that's the underlying theme that you're hearing from all industry, and hopefully that has been presented to the committees. They're now starting to see the opportunities for their marketplace, but the way you create the marketplace is by investing in their adoption.

Therefore, the point for QUEST is that you have to have the policy framework. That's one of our key points that we've been talking about. If you don't have the policy environment, it doesn't matter what you throw at it: it's not going to stick. You have to have something that people want to invest in. I think that's what we're seeing now, both from the federal and the provincial direction. I think the committee's work in the past has helped to create that policy framework across Canada, and we want to encourage that.

I have one other point on your first question, and it really speaks to how you get the institutional knowledge across Canada about creating a smart energy community or a network or using any of these technologies: people have to understand what they are, and they also have to understand what to do with them.

A point that was raised earlier was what the federal government could continue to do. Colleges and universities are now starting to come up with programs for training, whether it be engineering or electrical. These are from photovoltaics to geothermal exchange systems to what have you. What we have not done, though, is engage HRSDC with mapping. What would be required to have a degree in this area? What does it mean to be a specialist in this area, to be ready to apply these technologies that are coming forward? I think that's something we should be looking at.

Programs like SSHRC and others that are encouraging research and development in these areas have been focused on this, but it's not coordinated, and I think that's what we really want to be talking about: how to coordinate investment in training and education programs across Canada. We're at that stage now; it's time to take a really solid look at that, and that will help to build the road and the framework for smart energy communities across Canada.

● (1255)

The Chair: Thank you, Mr. Nicholls and Mr. Gilmour.

Mr. Trost, you have up to five minutes.

Mr. Brad Trost (Saskatoon—Humboldt, CPC): We have four minutes left in committee, Mr. Chair.

Really quickly, could we have 10-, 15-, or 20-second summaries to answer Mr. Calkins's questions from those of you who still remember them, if you want to.

Mr. Gora, he'd asked about the price point. Do you have any comments about that?

The Chair: Go ahead, please, Mr. Gora.

Mr. Christopher Gora: Thank you.

In answering that question, I think it's very important to point out that the tidal and river business is where wind was in its first year, so we're really talking right now about a pre-commercial industry. We certainly have some initial prices, but those aren't the ones we're shooting for. I would say we're still multiples of where wind is, but that is just the function of where we're at.

Mr. Brad Trost: You're still a few years out there. Not to cut you off too quickly, but—

Mr. Christopher Gora: That's right.

Mr. Brad Trost: —the other gentleman who got Mr. Calkins's questions—

Mr. Mike Cleland: Mr. Chairman, I will give a brief.... You talked about the barriers, and I think you touched on a number of them, as did Brent in his comment.

To take it back to the basics, and I thought Mr. Dutton captured it very well in his initial presentation, it's not so much that they're new technologies as it's doing things we haven't been doing, but doing them differently.

You have to start there, and that's where we think a network like QUEST adds real value, because it helps people take that step back, and then you can get at the more specific barriers. You really have to get over that initial leap that the way we've been doing it for 100 years isn't necessarily the way we should be doing it.

Mr. Brad Trost: Mr. Gilmour and Mr. Dutton, do you have any remarks to clean up what Mr. Calkins asked?

Mr. Robert Dutton: I have nothing further to add.

Mr. Brad Trost: The other week I was reading about the shale industry and how it's developed in North America, and that other places in the world may not be able to take advantage of the technology because they're not set up for it. They have state-owned enterprises, and shale fracking was mostly driven by smaller companies.

Mr. Cleland, because of your background on various things, how can we take advantage not just of innovations in our country, but take that raw science, those raw innovations from around the world, and apply them here?

I know you're going to go back to your basic principles, but it's a little different from taking the technology from its inception. We want to sponge off the rest of the technology in the rest of the world. Do we do anything differently than we would if we were trying to get it from the initial light bulb?

There are many places where you can take technology, and in the shale gas industry a lot of countries are going to lose that opportunity because they can't take advantage of a technology developed in Canada and the United States.

Mr. Mike Cleland: That's a tough question. I'm not sure that I have a very good answer for you, but let me make just one observation.

What this really goes to—and again, it's a little bit related to my last point—is skills, business models, and understanding how you actually get it done. The way you do that is by free exchange, which includes an open investment environment. To the extent that our investors are working in other parts of the world, and vice versa, we're going to get those sorts of exchanges. I think that's probably the most critical variable.

Mr. Brent Gilmour: Just to follow up on that, there are opportunities, and I think this is what the committee would like to hear about.

There are organizations like BRE from England. We've heard Mr. Gora refer to England quite a bit. They are interested in coming over to Canada and setting up an innovation park. That park would be targeting, though, those groups in Canada that are manufacturers and producers of products for energy efficiency or integrated community solutions and systems. What they would like to do is showcase that and allow people to come and visit and tour. You have to touch, feel, and engage with this stuff to understand how you can actually draw on it and use it in your community.

I think these are the kinds of activities and directions that, in terms of time and effort, we would like to see further investment in. I think that would actually lead you to allow that kind of opportunity.

● (1300)

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

I'd like to thank all of you for your presentations today and for your answers to the questions. We had an abbreviated meeting, and you've delivered a lot of information that will be helpful to the committee as we put together the report. Thank you very much.

Thanks to all the members of the committee. We'll see you on Tuesday.

The meeting is adjourned.

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