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Chair

Mr. James Maloney

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● (1145)

[*English*]

The Chair (Mr. James Maloney (Etobicoke—Lakeshore, Lib.)): Good morning, everybody. We've been anxiously awaiting the commencement of the meeting today.

Thank you to our witnesses. We had a bit of a delay. We had a vote in the House, so we're grateful for your patience.

The format was that we would have two panels, one in each hour. Given the late start, we're going to merge the panels. All four witness groups will present, one after the other, and once all the groups are finished presenting, we'll open the floor to questions from around the table.

Mr. Luymes, I understand you might have to duck out a bit early; and Professor Rousse, you might have to leave us a bit early as well. The meeting runs until one o'clock, so if you stay as long as you can, we would be grateful.

Each group will be given up to 10 minutes to do their presentation.

Mr. Luymes, since you are the one with the time constraints, why don't we start with you?

Mr. Martin Luymes (Vice-President, Government and Stakeholder Relations, Heating, Refrigeration and Air Conditioning Institute of Canada): Good morning.

Mr. Chair, Vice-Chairs and members of the standing committee, thank you for the opportunity to provide testimony here today.

My name is Martin Luymes. I am the vice-president of government and stakeholder relations for HRAI Canada, the Heating, Refrigeration and Air Conditioning Institute of Canada. HRAI is a trade association for the heating and cooling industry in Canada and claims 1,300 member companies, including product manufacturers, wholesalers, distributors and contracting firms in all parts of the country.

Our members provide products and services that are essential to life in Canada. We keep homes and buildings warm in the winter and cool in the summer, and we provide essential refrigeration, ventilation, indoor air quality and energy management services to all manner of commercial and institutional entities, from grocery stores to hospitals, ice rinks and high-tech manufacturing facilities.

The HVACR industry generates over $7 billion in the Canadian economy annually and employs close to 50,000 people. Our contractor membership alone employs a diverse range of skilled tradespersons, including refrigeration mechanics, gas technicians, plumbers, sheet metal mechanics and electricians.

I understand that the mandate of this committee is to explore the economic opportunities for energy efficiency in Canada and the contribution of energy efficiency to meeting Canada's Paris climate change commitments.

As a first point on this theme, I will say that as a supporting member of Efficiency Canada, HRAI endorses the position forwarded by that organization at a previous meeting here, which asserts that the concerted investment in energy efficiency will not only help achieve a significant share of Canada's carbon emission reduction targets, but it will also stimulate economic growth and create meaningful jobs across Canada.

According to Efficiency Canada's analysis, an average of 118,000 jobs would be created every year between now and 2030 due to economic activity associated with energy efficiency investment. Many of these jobs will be in the HVACR sector as a result of retrofits on mechanical systems in homes and buildings. In saying that, I would also add that these are for the most part highly skilled and well-paid jobs in all parts of the country where Canadians live, work and play.

As an organization, HRAI and its members have had a vested interest in the promotion of energy efficiency for many years. For our members, of course, the primary focus of their work is to ensure comfortable indoor climates for Canadians, but the promotion of energy efficient products and solutions is increasingly seen as an important ancillary offering that delivers monetary savings for building owners as well as reduced carbon emissions and, as it happens, increased profits for our members.

Unlike many other types of building retrofit contractors who are called in by building owners and homeowners to make planned upgrades for efficiency reasons or otherwise, HVAC contractors have the unique opportunity to identify and act on energy efficiency upgrade opportunities of which their customers may not even be aware. Contractors are almost always called into fix something that's wrong or that's not working, but in identifying the best solutions to fix or replace what's not working, properly trained and motivated HVACR contractors can become in effect ambassadors of energy efficiency improvement, and the opportunities for improvement in Canada are significant.

According to Natural Resources Canada, space heating is the single largest source of energy consumption in Canada's building sector. It accounts for 64% of energy consumed in homes and 56% of energy consumed in commercial buildings. According to their analysis, if today's best technologies were deployed more broadly, total home energy use could be reduced by 30% and greenhouse gas emissions could be lowered by 18 megatonnes per year. Meanwhile, water heating represents between 8% and 19% of energy use in homes and buildings. Again, if today's best technology were deployed, total home energy use would be reduced by 5% and greenhouse gas emissions lowered by more than three megatonnes.

What needs to happen in our sector to fully realize the potential benefits that can be delivered through investment in energy efficiency? One obvious area of focus is product efficiency improvements.

This is something to which our manufacturer members have committed a great deal of time and effort. In the area of product testing and certification standards, HRAI has engaged with Natural Resources Canada for decades, most recently in the development of amendment 14 to the Energy Efficiency Act, which affects numerous products of our industry, as well as current discussions for the next round, amendment 15.

● (1150)

I will note here that a priority focus in our discussions around minimum energy performance standards is the importance of harmonization of these regulations and test standards between Canada and the United States. On that score, we are pleased with the progress that's been made since 2011 under the Regulatory Cooperation Council in the alignment of regulations between NRCan and the U.S. Department of Energy.

Equally important for our manufacturer members is the need for greater harmonization of regulations and standards among provinces and territories within Canada. There's much work to be done here, but we are very encouraged by commitments recently made under the Canadian Free Trade Agreement.

A second area of focus should be on building code development and refinement. There are many ways in which the building code can be reworked to improve the overall energy performance of homes and buildings. More of these refinements concern the building envelope than they do the mechanical systems, but here I would highlight some of the innovative work being done by our industry in co-operation with CanmetENERGY, for example, in exploring the benefits of zoned HVAC systems.

It's worth noting, however, that most of the technologies that are capable of delivering significant energy savings and carbon emission reductions in the heating and cooling of homes and buildings already exist in the marketplace, but they tend not to be commonplace, due to various forms of market resistance. Therefore, a third area where we believe a great deal of effort should be committed is in the facilitation of key measures to overcome those market barriers, measures that have been identified in “Market Transformation Road Map for Energy Efficient Equipment in the Building Sector”. This document was approved by the Energy and Mines Ministers’ Conference last August and is the product of extensive consultations among NRCan, the provinces and territories, and key industry stakeholders from our sector.

The plan identifies where work is needed in terms of R and D and training investment to facilitate a smooth transition to a low-carbon economy, specifically in relation to space and water heating technologies. Initiatives identified in the road map include codes development, support for labour adjustment, training, product market readiness demonstration processes and more, with the aim of paving the road to market acceptance for low-carbon energy-efficient products and services.

The market transformation road map zeroes in on specific technologies from our sector that hold great promise for reducing energy consumption in buildings and for significantly reducing carbon emissions at least in regions of the country where the emissions intensity of the electricity grid is low. Chief among these technologies are electric heat pumps, including ground-source heat pumps and cold climate air-source heat pumps. Neither of these technologies has been deployed on a widespread basis in Canada, for a number of important reasons.

Among the reasons are the relatively high initial capital costs for these systems, especially ground-source heat pumps, especially when compared with heating systems in areas served by natural gas. Second are the concerns about the performance of air-source heat pumps in extreme cold conditions. Third is a lack of standardized test procedures for air-source heat pumps. There is also a general lack of consumer awareness about the technologies in question, as well as a lack of training and awareness among contractors, design engineers, inspectors, and building owners about these products.

Overcoming market barriers will require investment in R and D and market development measures to refine products and develop the workforce needed to install and service these products. Some of the R and D needs include research on how to develop lower-cost cold climate air-source heat pumps, develop hybrid or dual-fuel heat pump solutions, reduce ground loop installation costs for ground-source heat pumps, and develop lab and field testing for gas heat pumps in Canadian climates.

There are also a whole host of measures needed in the area of market deployment or development. These include demonstration projects, developing Canadian-based performance standards or ratings in qualified product listings for heat pumps, experimental financing schemes to overcome initial cost concerns, and development of heat pump training and certification programs for contractors and technicians.

In this short submission, I focused on these few technologies because they have the greatest potential to become mainstream and therefore will deliver higher savings in energy use and reduction in carbon emissions. Other technological solutions—such as VRF, variable refrigerant flow, or building automation systems—hold great potential for energy saving in commercial applications. Research is also under way to develop the marketplace for micro combined heat and power, and natural gas heat pumps.

● (1155)

In summary, the HVACR industry stands at the ready to partner with governments and utilities to help make the marketplace more energy-efficient and to lessen the carbon impacts of space and water heating. We, in fact, have a vested interest in doing so.

Thank you for listening.

I'd be happy to answer questions, if you have any, when the time comes.

The Chair: Thank you very much.

Professor Rousse, you're next.

I should point out that the professor has a presentation that is half in French and half in English, but it has not been translated. It will be done later. I assume that we have consent from around the table to proceed on that basis.

Some hon. members: Agreed.

The Chair: Thank you.

[*Translation*]

Mr. Daniel Rousse (Professor, École de technologie supérieure, As an Individual): My presentation will be in English and French as well.

Thank you for inviting the Technologies of Energy and Energy Efficiency Research Group to participate in your work.

I will try to provide a different perspective on energy efficiency, based on my 30 years of work in the industry and, of course, in the academic and research sectors.

The abbreviation “t3e” stands for “technologies of energy and energy efficiency”. Our group is part of the École de technologie supérieure.

Slide 3 shows the two documents we basically use to talk about the energy situation in Canada in the courses we offer at the École de technologie supérieure. One of the documents is from the International Energy Agency, and the other was prepared by the Government of Canada in 2017. The Office of Energy Efficiency recently decided to use these publications, and we thank them for that.

As indicated on slide 4, today, I will tell you about the economic opportunities for energy efficiency in Canada. This is a very broad theme that has required some thought.

[*English*]

The outline of the presentation will be in four points: context, climate change, energy efficiency, and conclusion.

[*Translation*]

First, I must point out that economic growth has always been coupled with growth in energy consumption, as shown in the graph using the 2018 statistics from BP. From 1992 to 2017, we see that energy consumption increased. As can be seen on slide 7, the 2008 economic crisis clearly highlights the correlation between the economy and energy consumption. Indeed, the economic downturn was accompanied by a slowdown in energy consumption.

Slide 8 provides an overview of the energy demand projected for 2040. According to the International Energy Agency's “New Policies Scenario” document, energy consumption will increase by 25%, while according to BP's “Energy Outlook” report, this increase will be about 33%. So we won't be out of the woods. Demand will continue to increase, mainly because of the development of India, China and Asia more generally, as well as the demographic growth that those regions will experience.

An increase in energy consumption inevitably goes hand in hand with an increase in CO_2 emissions, as you can see on slide 9. Renewable energy accounts for only about 10% of our total energy consumption. Hydroelectricity consumption is shown in blue. Renewable energy is in orange. In grey, red and green are the three sources of fossil fuels, which produce CO_2. However, as shown on slide 10, fossil fuels account for more than 80% of energy consumption. This cannot be changed instantaneously.

[*English*]

How would you maintain your lifestyle with an 80% salary cut?

[*Translation*]

It would be absolutely impossible to do.

It will take decades for us to significantly reduce CO_2 emissions. It will take 10 to 50 years, in my opinion.

On slide 10, the small table shows that carbon dioxide remains in the atmosphere for about 100 years after it is emitted. Today's emissions will still be there at the turn of the next century. The same is true for nitrous oxides, which have a life span of 120 years and are 300 times more harmful for global warming.

There's no need for me to tell you that we have no way of preventing a two degree Celsius increase in temperature on Earth, regardless of what we hear every day in the newspapers, on the radio or on television.

Slide 11 provides some figures that may seem alarming. I am not pessimistic, even though the figures are not very optimistic in themselves. I will talk about this later, if need be.

How can we prevent an increase of two degrees Celsius? As mentioned on slide 12, the problem should have been tackled when it was created in 1784. That's when James Watt designed his steam engine. It might also have been a concern when Joseph Fourier wrote his paper on global temperature in 1824 or when John Tyndall and Claude Pouillet published a paper that very clearly explained what the natural greenhouse effect was due to water vapour and carbon dioxide.

Furthermore, as indicated at the bottom of the same slide, more than a century ago, scientist Svante Arrhenius, who could have been the first to join the Intergovernmental Panel on Climate Change, proposed a model demonstrating that global warming would reach four degrees Celsius if CO_2 concentration doubled in the air, and that is exactly the direction we have taken.

On slide 13, we see that we have enough oil, gas and coal to suffocate ourselves. Over the next 50 or 100 years, we will probably burn all the reserves we are currently aware of.

Slide 14 asks the question: does that mean we shouldn't do anything? Not at all. However, we will not stop climate change for environmental reasons; we will do so for economic reasons. I'm glad you asked the question. There are direct costs, because of hurricanes, storms and fires, as we have seen in California very recently, but there are also indirect costs. At some point in this century, foreign legislation will force us to adopt clean manufacturing methods and processes to create the products and services we will be exporting. One of these days, whether we like it or not, even if some governments are a little resistant to all this, we will be part of a large carbon market. This will become increasingly a problem for everyone. If we cannot stop it, we can at least slow it down for economic reasons.

Let me say a few words about energy efficiency before I conclude.

First, energy efficiency improves the productivity of our businesses. The more businesses consume, basically, the greater the difference will be. I find it very interesting to go into a foundry or an aluminum smelter, for example, and suggest solutions when they are possible. When companies consume less energy, they have more money. They can then invest it in research and development or human resources locally. That's important.

Why do companies prefer to invest in marketing to increase their annual sales rather than in measures to reduce their energy consumption? Well, that's because businesspeople know much more about marketing and sales than energy. That is very clear, in my opinion. As Mr. Luymes mentioned earlier, people don't know much about energy. It is much easier to count sales than it is to count energy. Personally, I have been doing this for a number of years, but it's still sort of a mysterious, strange concept.

In addition, having a five-year payback period is like having a 20% interest rate. When you invest in energy efficiency, the annual bottom line is not very good in the first year. That's why people prefer not to do it.

In addition, energy efficiency puts money in consumers' pockets.

● (1200)

[*English*]

The less energy they consume, the better Black Friday will be.

[*Translation*]

It will be very good for the GST and all the taxes collected. People prefer to spend on goods and services than pay energy bills. However, as Mr. Luymes mentioned, they do not fully understand how it works. Earlier, we were talking more specifically about geothermal energy. They need help to evaluate their options and to know what to do. They need information.

A five-year payback period is like having an interest rate of 20% for individuals as well. However, most of them would rather have a rebate,

[*English*]

a refund or a subsidy, instantaneously, rather than an appropriate payback.

[*Translation*]

That's on slide 18.

I will now move to slide 19.

[*English*]

Where should we stimulate energy efficiency efforts?

[*Translation*]

I would start with the industry, because it is the biggest consumer in Canada and it has international competition. If it reduces its production costs, it will be more competitive.

Transportation is the second largest energy consumer in Canada. Since almost 100% of this sector emits CO_2, we are accomplishing two things at once by working on it.

In addition, as Mr. Luymes mentioned, in the residential, commercial and institutional sectors, there are many savings to be made, hundreds of thousands of jobs to be created and billions of dollars to be spent, whether in refurbishing buildings or creating new ones.

Finally, in agriculture, let's take, for example, the United States-Mexico-Canada Agreement, which has just been signed. Our farmers have to spend less energy to create their products, since they are now more directly competing with the U.S.

How to stimulate energy efficiency efforts? I am going to ask you a few questions, which you can find on slide 20.

[*English*]

Why don't the Danes buy cars? Why do the French buy smaller cars? Why do the Germans use solar energy when there is less sun in Berlin than in St. John's, Newfoundland, or any other Canadian provincial capital? How did Ontario get rid of coal in power production?

[*Translation*]

That's because money is the only language people understand. The Danes have received subsidies. In France, taxes on gasoline are imposed, which means that the cost per litre is twice or almost twice as high as here. For their part, the Germans have decided to make a

[*English*]

massive investment in feed-in tariffs

[*Translation*]

for solar energy, and their power in this area is comparable to that of Ontario, which took such measures a few years ago. I will not elaborate on that any further.

How can we stimulate energy efficiency efforts then? All the solutions proposed on slide 21 relate to money. We must increase the cost of energy. Having a strategic plan is fine, but you need an implementation plan backed by a measurement plan. Restrictive policies on energy intensity and efficiency are needed. We must participate in a carbon market. We could increase the excise tax on fuels or introduce a specific value-added tax on energy products, as in some countries, or implement a system of feed-in tariffs. Slide 22 lists other opportunities, such as investing in research and development or having working venture capital.

I'll move to slide 23 right away so that I don't take too much time.

Let me give you an example. From Newark, you have to pay $6 twice to get to the Lincoln Tunnel and $15 to cross it to reach Manhattan. Implementing tolls on bridges, tunnels and highways, and returning the money to public transportation is a practical solution, not just for aliens; our neighbours are doing it. This would create many jobs for decades. It would be much better than giving $8,000 to every person who buys a Nissan Leaf in Quebec, for example.

Proposing—

● (1205)

[*English*]

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

Mr. Daniel Rousse: Yes, I have one more slide, I guess. I have other suggestions, but I will conclude right now.

We won't stop global warming. We have to try to stop carbon emissions for economic reasons.

How do we stimulate energy efficiency? We have to implement measures that will reward efforts with money. We have to select programs that will create jobs and bring taxes back to society.

I'm not an economist, but in my career I've happened to learn that when it comes to energy, there's only one language one understands, and that's money.

That was my presentation.

Thank you.

The Chair: Thank you very much, Professor.

Mr. Fogwill, why don't you take it from there?

Mr. Allan Fogwill (President and Chief Executive Officer, Canadian Energy Research Institute): Thank you very much, Mr. Chairman.

I was worried about coming to Ottawa, after Calgary had its way with Ottawa on Sunday at the Grey Cup, so thank you for the invitation and that I haven't been kicked out of the building. It was a good game, and it was about time, so I'm very pleased for the Stampeders.

My name is Allan Fogwill, and I'm the president and CEO of the Canadian Energy Research Institute. My remarks come from experience at CERI, as well as work designing and implementing natural gas energy efficiency programs in Ontario, and from my involvement as chair and CEO of the Canadian Energy Efficiency Alliance and as a member of the National Advisory Committee on Energy Efficiency. I have been dealing with energy efficiency matters for over 25 years.

As an analyst, I look at energy efficiency activities with two lenses: economic development and energy system planning. Through these lenses, what I see today is that the original objectives of energy efficiency have been obscured by the multiplicity of stakeholders, each using energy efficiency programs to gain some type of credit with Canadians. For example, think of air-source electric heat pumps in Newfoundland when they are going to experience a surplus of electricity from Muskrat Falls, or in Ontario with an electricity surplus promotion program of energy efficiency activities with a minimal return on savings. From a systems planning perspective, both miss the underlying context of surplus electricity. In the latter case, a UC Berkeley study found the financial returns for a similar program in the U.S. at a negative 2.2%.

Regarding the economic development focus, there have been numerous studies over the last three decades that suggest that the most cost-effective options for energy efficiency improvements reside in the industrial sector. The major industries consume a great deal of natural gas and electricity, in particular. They also face very practical challenges of competition for investment capital within companies and a lack of information at senior levels regarding the benefits of these types of activities. Studies typically show that the potential for efficiency improvements in industry outweighs that in commercial and residential applications, and they are almost always of greater economic value, yet you will find in many organizations a broad cross-section of programs targeting all three sectors. Thus, from an economic efficiency perspective, we are diluting the impacts of scarce funds to ensure that the program sponsors get credit.

Should the pot of funding for energy efficiency programs be triaged to target the full potential of those most economic programs? Keep in mind that the productivity and competitiveness benefits relate almost completely to the industrial sector. Competitiveness at the national level should be viewed as competitiveness between countries. Should the federal or provincial government be concerned if one commercial building or another in a community's downtown is more competitive than its neighbour?

Another economic development aspect is the creation of jobs. Energy efficiency programs create more jobs, and local jobs, per dollar invested compared to energy supply projects or complex infrastructure. The reason is that many of these tasks can be done by local energy services, HVAC and building envelope improvement companies. Many of the major projects, energy or otherwise, often rely on outside labour specialized in certain skills. “Outside”, in this instance, could mean another Canadian city or an international jurisdiction.

Therefore, what economic development objectives do we have? Is it GDP and competitiveness, or job creation? Often I have seen both be a consideration. In such a case, the division of funds then makes sense between the cheaper industrial programs with lower local labour impacts and the more expensive residential programs with more significant labour benefits.

Regarding energy planning, there are two elements to consider. The first is managing the overall cost of service to customers. Sometimes it is cheaper to save energy than to build up supply to serve a growing demand. This is demand-side management. The second is managing greenhouse gas emissions. Lower energy consumption can translate into lower emissions.

Regarding the overall cost to customers, especially with non-utility programs that have not gone through a rigorous regulatory review, it is not clear to me that there is any connection between the cost of an efficiency program and the cost of additional supply. Electricity and natural gas commodity costs have come down significantly in recent years. For electricity, the one exception is Ontario.

● (1210)

That means new supply options are cheaper than they once were, yet we seem to be expanding our energy efficiency programs without evidence to demonstrate that this is a cheaper option than the supply alternative. Please note that we are talking about new supply or energy efficiency. We are not avoiding the infrastructure costs to deliver that energy; the vast majority of that infrastructure is in place and will be billed for regardless. So it is the replacement of the commodity option, which usually accounts for one third to one half of the bill.

I would suggest that the question be asked of program managers to show that the money being spent on energy efficiency is lower than the next most expensive commodity option.

When considering greenhouse gas emissions, we should also note that our electricity systems are almost 85% non-emitting, and with the coal phase-out scheduled for 2030, that number will be over 90%. This would mean that if stakeholders want to use energy efficiency programs to reduce emissions, they would best focus on programs related to hydrocarbon consumption efficiency: natural gas, gasoline and diesel, primarily. Again, it does not appear that this type of analysis is part of the consideration of which programs to sponsor.

This leads me to suggest that a clear framework for the policy objectives be considered, along with a robust set of analyses to ensure that programs are targeting the right sector and the right energy service for the right reasons. It would also help with transparency if the results of these tests were published as part of the program's communications.

Finally, I would like to comment on the fragmentation of effort we see in this country. We have programs from the federal government, from the provincial government, or sponsored by associations, municipalities and utilities, with insufficient regard for the existing delivery mechanisms in the form of retail or commercial service companies. Each program manager has their own delivery system, complete with their own branding.

If we had a common set of initiatives endorsed by all major funders, such as the ENERGY STAR program, with only one delivery strategy and one branding strategy, it would make it much easier for industrial, commercial and residential customers to understand the need, the benefits and the processes. We need to acknowledge that companies and citizens are not captive to local markets anymore.

Energy efficiency activities can be an important tool for economic development and system planning. It is not always the best default solution, but it is an important consideration. Its value depends on the context, something we need to incorporate into our energy efficiency program designs to a much greater degree.

Thank you.

● (1215)

The Chair: That's perfect. Thank you very much.

Last but not least, we have Mr. Langlois and Mr. Cappon.

Mr. Pierre Langlois (President, Canadian Institute for Energy Training): Thank you for the invitation. My name is Pierre Langlois. I am the president of the Canadian Institute for Energy Training, called CIET. I'm here with Olivier Cappon, who is a senior manager at our organization.

CIET is a wholly owned subsidiary of Econoler, which is a Canadian-based consulting firm that has been working in energy efficiency for 35 years in over 160 countries. We work with all the IFIs and bilateral organizations on economic growth and climate change issues around the world.

We have been working, as well, in Canada, with all federal and other government agencies related to energy efficiency over the last 25 years. We obviously strongly believe that energy efficiency is the most valuable option for Canada, both on the supply side, for energy and growth, as well as climate change issues.

I will not address the climate change issue much, because a lot of the other speakers have done so, as well as Daniel. I will essentially concentrate my presentation on the fact that energy efficiency is the best option for the growth of the economy and jobs creation.

As a note, we are currently working with NRCan on greening the government's assets related to energy efficiency. We are training a lot of federal employees related to the use of energy efficiency as one of the best options for the government itself.

Last but not least, we have been training people, and over the last five years, there has been growth in our market. We are training three times as many people around Canada as we did five years ago, showing that there's definitely a trend and interest about energy efficiency.

One of the things we have to understand is that energy efficiency is the cheapest fuel. It has been demonstrated over and over again, and I don't think I have to flood you with numbers about it. The fact that something we don't use is cheaper than something we consume is likely evident.

Furthermore, we talk a lot about green energy in talking about renewables. Renewables are only part of the solution. We have to understand, as well, that renewables will always cost more than energy efficiency. That's very simple to understand.

If our planners for the last 50 years who built these plants had essentially started with the most costly one and gone to the cheapest one, we would have added energy supply in the system as a cheaper option all the time, and the global cost for end-users would have gone down. However, obviously you understand that this never happened. When we built these plants, we always went from the cheapest one up to the most expensive one. Adding up supply will always cost more. It's impossible the other way.

If you think about energy efficiency, it will always cost less, because when you don't consume energy, you won't have to pay for it. Furthermore, energy efficiency will never be exposed to inflation as any other source of energy will. The benefit of energy efficiency is not only that it is going to cost the least, but that its costs will never increase over time. That is not going to be the case for the supply side.

One of the things that are interesting is that there is already a huge movement within Canada. I brought a recent book—I have a few copies, if others want to have it—that I wrote with one of my colleagues, related to the Canadian energy efficiency outlook. The point of that book is essentially to demonstrate how every province and territory is currently involved in energy efficiency in different ways.

That has been my experience internationally, when I've been asked about the energy efficiency market in Canada. It's not a single market; it's different in every province. Every province does it differently.

As an example, British Columbia has had a long-term resource plan for 20 years, and an associated short-term plan, for five years, on demand side management. Ontario has a “conservation first” framework, a revision of the energy conservation act; Nova Scotia has the Electricity Efficiency and Conservation Restructuring Act of 2014; and Quebec has a very aggressive plan on energy efficiency, even though all of its electrical production is renewable.

One other thing is that, even though I would be able to convince you that energy efficiency is the best source of energy, the cheapest source and the cleanest source, the question you have to ask is why it is not exploited as much as the supply side. The reason is that there are a lot of barriers within the market, and Daniel and the others spoke a bit about that.

However, we know for sure that if we continue with business as usual, at least two-thirds of the whole potential in Canada about energy efficiency will not be exploited, even though we do have a lot of programs, a lot of initiatives, public or private.

● (1220)

I will essentially try to present the case of energy efficiency on the economic side on three pillars. One is the impact; another is the competitiveness; and the last is the possibility of exporting because of our specific situation.

The IEA, among others, would say that potential job creation ranges from eight to 27 jobs per $1.5 million of investment in energy efficiency measures. That's been looked at all over the place. Alberta, for example, said that by investing in energy efficiency, its economy grew by $475 million through increased economic activities, and created over 2,300 additional jobs.

The other thing that has to be very interesting for you is that jobs created in energy efficiency are not necessarily related to high-skilled professionals. Energy efficiency measures can create jobs for everyone. Obviously, on the supply side, it's not exactly the same thing, because you have a lot more skills.

The other thing is local jobs. Think about the new wind power. If you have a wind-powered mill, most of the investment related to that mill will be related to buying a turbine, which most of the time will not be produced in Canada. But if you have energy efficiency, most of the jobs created will have to be locally based. You're not going to hire someone from abroad if you're going to insulate your home, replace your lamps, or increase your energy efficiency at an industrial level. It creates jobs not only globally but also locally.

It will create indirect jobs as well, because all of the money saved is going to be free for government, industries and individuals to use for something else. Obviously this creates indirect jobs, because it's going to free up financial capacity.

Increased competitiveness, I think, has been talked about before, but obviously an industrial sector will reduce its operational costs and be able to compete a lot better within, and outside, Canada.

We don't discuss efficiency in terms of the use of money or the use of time, or any other use of efficiency in the economy, but when we're talking about energy efficiency, it's a little more difficult. Efficiency is a virtue. Efficiency is good in every aspect of economic life, and it should be as well for energy efficiency.

In the public sector, all governments, including the federal one, are facing increased needs of budgets. There are a lot of demands worldwide and in Canada, including at the provincial and municipal levels. If you reduce your energy costs, that money is going to be used a lot more wisely than just on a supply that goes somewhere and is not being invested in the communities.

As for export, I've been working in Saudi Arabia, one of the biggest producers worldwide. Saudi Arabia now has a policy of efficiency first. They figured out that it's a lot better to sell their petroleum outside of Saudi Arabia than to consume it internally. Economically, it makes a lot of sense.

Canada is a little bit in that same position. We are an exporter. We are able to sell electricity, oil and gas. Wouldn't it be great if we were able to sell more abroad, especially our clean energy, than to just use it and waste it internally?

Last but not least, it's about increased skills and capacity. Energy efficiency is a complex topic, probably a lot more than the supply side. I'm not saying that the supply side is not complex by itself, but in energy efficiency you have a diversity of measures. It's not only one thing; it's hundreds of different things. You don't do the same efficiency measures in the residential sector as you do in the industrial one. It requires a lot of different skills. Creating the skills within our Canadian economy is very important. Basically, if we're able to increase those skills within the community, jobs will be created because the demand will be there.

I would say that even when organizations invest in energy efficiency building systems, cost will not be avoided by itself. It needs operators. It needs people who know how to manage it, at your home level or at the industrial level. Whatever we do, as far as investment is concerned, we'll need skilled technicians, engineers and operators. That capacity-building is going to create a lot of wealth within Canada. It will not only create jobs; it will make the end-user more efficient and create a more efficient economy globally.

In conclusion, I hope that through the different presentations you will have a very good perspective on energy efficiency, not only on the environmental side—I think everybody understands that the lack of energy use will obviously generate a lack of pollution and positively affect climate change—but also in creating economic growth. We don't have to oppose the environment to the growth of the economy. They can be very well combined.

● (1225)

Such benefits will happen throughout the economic sector. We talked a little bit about industry, and I totally agree, but it will also be at the government level, the commercial level and the residential level, the voters.

As well, jobs created per dollar are going to be more than if you continued to invest in and support investing on the supply side, just because the next supply-side option will always cost more than the last one.

Finally, for good economic and environmental reasons, I think energy efficiency has to come first within our energy policy. It should not be just one of the potential solutions but really the first one.

The Chair: Thank you very much.

Mr. Serré is going to start us off.

Professor Rousse had to leave, so he's not available for questions. If there are any questions for him, we can submit them to him in writing.

[*Translation*]

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

First, I want to thank all the witnesses. The information we have received today will be of great help to us in preparing our report.

Mr. Luymes, you said that there was good co-operation between Natural Resources Canada and the U.S. authorities, but that there was still a lot of work to do with the provinces.

Mr. Fogwill, you said there was a lack of co-operation between the federal government, the provinces, municipalities, associations and the public service sector.

My question is for both of you. What recommendations would you make to the committee to improve co-operation between the provinces and the federal government?

[*English*]

Mr. Martin Luymes: I'll start, because my suggestions are probably simpler.

Some hon. members: Oh, oh!

Mr. Martin Luymes: As far as the alignment between Canada and the U.S. is concerned, I suggest that there has been progress. If there is a concern, it is that, perhaps, where the United States was leading Canada in driving energy efficiency minimum performance standards ever upward, Canada was lagging behind for many years. Now Canada is aligned, but poised to move ahead, which we might all celebrate. Because of the policy context within the United States, it doesn't appear that there's the same commitment now to driving energy efficiency levels up.

Our concern for our manufacturers is that they manufacture a product for a North American market, and they don't relish the idea of delivering different products into different sectors.

The problem, as I suggested, is exacerbated when we see provincial governments competing with one another—and I don't want to exaggerate the problem—to be the best within the Confederation and to say, “We have the highest standards.”

In Manitoba, a number of years ago, the minimum efficiency level for furnaces was set at 90%, and Manitoba decided they should set it at 94% AFUE, just to be better. That meant that manufacturers had to deliver specific products just for that market, and it's a very small market. That creates inefficiencies in the manufacturing and distribution world.

There's a reason for optimism under the Canadian Free Trade Agreement. There is a commitment to align standards within Canada under a process called the regulatory reconciliation and co-operation table, including building codes and a variety of energy efficiency standards. We have reason to be optimistic, but as I said, there's work to do.

● (1230)

Mr. Marc Serré: Mr. Fogwill, go ahead.

Mr. Allan Fogwill: In my experience, working with different associations and different governments, everyone seems to have different objectives. Before you get into identifying what the issues might be in terms of implementation, understanding the different objectives is paramount. Otherwise, there actually might not be room for an agreement.

I'm always in favour of collaboration between parties, and I think that if processes are put in place for, at the very least, having an ongoing dialogue about what everyone is doing, slowly you'll get people starting to work together on a more long-term basis and to coordinate things.

Almost 25 years ago now, we had a debate about bringing the Power Smart logo to Ontario. It was first developed in British Columbia, and they have the licence for that. For one reason or another, it just broke down because the objectives of the parties weren't the same.

Now we have—I can't remember what the tag line is in Ontario —"Ontario saves" or something like that, and you go across the country—

Mr. Martin Luymes: It's "Save on Energy".

Mr. Allan Fogwill: There you go.

Go across the country. Pick a province. Pick a city. They all have a different brand for doing the same thing. It's quite frustrating. The first thing is to get them all in a room to see if you can reach agreement on what the objectives are. Then, keep them talking so that over time you'll start to shame some of the outliers into getting with the program.

[*Translation*]

Mr. Marc Serré: Mr. Langlois, you talked about Canada's energy export potential. Could you tell the committee what steps Canada could take to be a larger energy exporter?

Mr. Pierre Langlois: Clearly, exports will result directly from the fact that we will have energy to sell. We will only be able to export energy if we produce surplus energy.

The recommendation is relatively simple: even before we think about building more power plants and increasing our production capacity to export energy, the greatest asset would probably be to use less energy in order to export the surplus energy.

This recommendation seems really simple, but to do something about it, there must be a real political will to act on energy efficiency. As my colleagues have said, it is very difficult for all of us to agree on the best ways to reduce energy consumption; it is very complex.

To build a hydroelectric plant, everyone agrees on the same concept; there are not a thousand ways to do it. To reduce energy consumption, we talked about the standards and codes that the Canadian government sets. This is a very good approach. We also talked about training people to help them find ways to reduce their energy consumption. Those are just some examples. There are a lot of different ways.

As my colleagues have said, the Canadian government could engage all parties to move toward harmonization. This would certainly make it possible to free up that energy and export it.

Mr. Marc Serré: That's excellent.

[*English*]

Mr. Fogwill, I want to get your opinion on the new technologies, de-risking, commercialization, valley of death. Do you have any recommendations, from your experience, on what we could do to better support the growth of small businesses when we look at de-risking and commercialization in that regard? You mentioned that earlier.

Mr. Allan Fogwill: From an energy efficiency point of view, I think the best thing is consistency. Try to get whatever programs you're going to put together, and keep them consistent, because in a lot of cases, these small companies are almost completely reliant, in terms of their business plans, on government programs. An example of where that was done poorly is Ontario Hydro in the late 1980s. It had a number of energy efficiency programs, and all of a sudden it pulled back on them very quickly. There were a number of a small firms that went out of business in very short order because the whole basis of their business plans was gone.

If the programs are not to be consistent over many years, then at least, as changes are made, have a lot of telegraphing of what those changes are going to be in order to give parties time to react. Six months is not enough time.

● (1235)

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

Mr. McCauley and Mr. Falk, you guys are going to split your time, I understand.

Mr. Kelly McCauley (Edmonton West, CPC): Yes. I'll go first.

Gentlemen, thanks for being here. I wish we had a lot more time, because you are certainly an interesting set of witnesses.

Mr. Langlois, I'm going start with you. You mentioned that you were doing some work with the government on greening the government's assets. Could you briefly walk me through what you're doing with them? The reason I ask is that we're actually studying energy efficiency and greening government in the operations committee. We had executives from Treasury Board, which essentially is in charge of the overall greening government strategy. We had Environment and Climate Change Canada and other departments. Not one person was actually able to say what the goal or outcome was for the government plans, whether it be a reduction of energy use, a reduction of costs, etc. There's not a single plan articulated.

I'm wondering what your role is and whether we're kneecapping ourselves by putting investments in and having all these bureaucrats working on something with no planned outcome.

Mr. Pierre Langlois: I'll ask Olivier, who is working directly on that program with NRCan, to answer you.

Mr. Olivier Cappon (Senior Manager, Business Development and Government Relations, Canadian Institute for Energy Training): Thank you, Pierre.

In essence, our input is to train federal government employees. I should mention that this is a voluntary program. There is nothing mandatory about it. The way it works is that, essentially, either managers or directors will bring to our attention a certain capacity that's missing within either a Crown corporation or a—

Mr. Kelly McCauley: What are you training them for? To do reports...?

Mr. Olivier Cappon: No. Most of what we've done so far has been on capacity-building and awareness of the need for energy efficiency in buildings or in their processes generally. Again, that can be a Crown corporation, a government agency or a ministry. It's tended to be ministries and agencies so far. We've dealt with six so far. There has been a lot of variety in the types of things we've done, everything from agriculture—specifically looking at some of the farms and those structures—to energy efficiency on naval ships, warships, which was the most recent.

There's been great diversity, but I think there's a capacity to do a lot more.

Mr. Kelly McCauley: Have you been involved in the pilot projects of upgrading energy efficiency in government-owned buildings?

Mr. Pierre Langlois: I can add to that.

Mr. Kelly McCauley: I want you to comment on that because we've looked at the numbers, and when we presented the numbers to Public Services, saying, “You've spent all this money but your energy use in some of the buildings and your costs have skyrocketed”, the comment was “We can't figure out why.”

What's the point of a pilot project? Why are we spending millions if we don't have a measurable outcome that shows it's helping the environment or taxpayers?

Mr. Pierre Langlois: On the training, I would add very specifically that we train people on the maintenance side to better operate, on the design side to better design, and on the structural side to implement solutions, so it's very technical. On this, we also work with NRCan on the federal buildings initiative. It changed its name recently, but that's always the acronym I remember, FBI, because everybody laughs about it when I go to the U.S.

The federal buildings initiative works out of performance contracting. It's essentially the government launching tenders for entrepreneurs to come in, design, implement and guarantee the results over a period of five to 10 years. For sure the results happen, because they only get paid if the results happen and are demonstrated.

The challenge that you have when you talk about measuring—

Mr. Kelly McCauley: Is this for the pilot project?

Mr. Pierre Langlois: No, it's not a pilot. It's a program that's been running since 1995.

Mr. Kelly McCauley: The PSPC has been retrofitting some buildings, and they're not able to show what their goal is, or even why energy usage was up. I wonder if you were involved with that.

Mr. Pierre Langlois: Not that one.... We're referring to the ones with the performance contracting, but you touch on one of the existing barriers: how to measure the savings compared to how to measure the supply side. On the supply side, you have a meter. Energy efficiency is not as simple; you're totally right. We've not been involved specifically in that.

● (1240)

Mr. Kelly McCauley: Thank you.

Mr. Ted Falk (Provencher, CPC): Thank you.

I want to reiterate what my colleague said. I want to thank you for coming to the committee. Hearing your testimony has been interesting.

Mr. Fogwill, you talked about not necessarily abandoning existing power supplies and transmissions as being the most efficient and effective way to be energy efficient. Can you expand a little more on that? Do you have any examples that you could give?

Mr. Allan Fogwill: Sorry, could you rephrase?

Mr. Ted Falk: You talked a little bit about not necessarily abandoning existing energy models or energy supplies—

Mr. Allan Fogwill: What I was trying to point out.... There is a term we use when we analyze energy efficiency programs, and it's called the avoided cost. The avoided cost is used to determine the cost of the next unit of supply, and any spending you would conduct on energy efficiency less than that is economic. Energy spending that's more than that is not economic.

Mr. Ted Falk: Right.

Mr. Allan Fogwill: In the last 10 years, we've seen a significant reduction on our supply options. Natural gas prices have gone down by at least half, which means that natural gas electricity prices are around 5¢ to 6¢ per kilowatt hour. Wind has also come down in price. When backed up with natural gas or even with an air compressor, wind is around 5¢ as well.

The cost of the commodity piece, where we thought that the cost of the next option was more expensive—and this is where I disagree with the other witness—is not anymore. That's a big disconnect from where we've been over the last 20 years, where we would say that energy efficiency is the cheapest and the default option. It's not, or not necessarily. If we think about it as a default option, that means we're not thinking. We need to do those tests, that analysis, because the price of the electricity commodity is coming down; the price of natural gas has come down a huge amount; the price of electricity transmission has come down because we're moving away from AC power to DC lines, and they're much more efficient in that movement.

My point is, just do the work. Do the analysis. Find out if it is more effective. Don't just assume that because it's energy-efficient, it's the best thing to use first. That's not necessarily the case.

I showed you the results from that UC Berkeley case, where they had this whole home energy efficiency plan. It comes in as -2.2%. From an economic point of view, that's not a good thing.

Mr. Ted Falk: But it's very energy-efficient.

Mr. Allan Fogwill: Yes, it can be really energy-efficient, but it might not be economically efficient.

Mr. Ted Falk: That's correct.

I think I'm out of time.

The Chair: You have 30 seconds.

Mr. Ted Falk: I don't want to squander that.

Voices: Oh, oh!

The Chair: If you can get in a question and an answer in 30 seconds, Ted, you got it.

Mr. Ted Falk: Thank you very much, Mr. Fogwill.

A voice: You have to be efficient.

Mr. Ted Falk: Yes, I'll be efficient.

Mr. Langlois—

The Chair: You're down to 20 seconds now.

Voices: Oh, oh!

Mr. Ted Falk: Mr. Langlois, what kind of cost-benefit ratios are you looking at when you're looking at energy efficiency?

Mr. Pierre Langlois: Well, essentially it's not us; it's the consumers.

Mr. Ted Falk: Based on your experience, though, what is a reasonable expectation for cost-benefit?

The Chair: Answer really quickly, please.

Mr. Pierre Langlois: We see a range. We work with industries that for a one-year payback wouldn't even invest, for different reasons that I can go into in more detail. We see the five- to 10-year payback being acceptable in the institutional sector. Whatever it is—which is less than 10 or 15 years—at the end of the day it's still more rational to do that, because you will provide energy at zero cents. Whatever the cost of the supply side at the end of the day—

The Chair: I'll have to stop you there, Mr. Langlois. Thank you.

Mr. Cannings, go ahead.

Mr. Richard Cannings (South Okanagan—West Kootenay, NDP): Thanks to all of you for coming here. It's been very interesting.

I'll start with you, Mr. Fogwill, and at a sort of high elevation. You talked about this fragmentation of effort among the federal government, the provincial government, the utilities and the municipalities, and then you mentioned the consistency of funding. We have the pan-Canadian framework, and I don't know if it was trying to sort that out.

In terms of energy efficiency, one thing I've been looking at is the retrofit program. You might have something to say on this as well. We had a federal retrofit program for homes. You may disagree that it had a big impact. The big impacts were, as you were saying, on industry, but that program had a great leveraging of funds for the government. People spent a lot of money. As you said, it was money that was spent in the communities. That money stayed in Canada in those local communities. Yet in the pan-Canadian framework, it was sort of put down to the provinces. Some provinces have taken it up. Ontario just got rid of theirs, unfortunately.

I'm just wondering if you could comment on advice for us and the Canadian government. What should the federal government be doing to help with this problem of fragmentation of effort? Should the federal government be trying to do all that it can by itself, just to make that effort more consistent across the country? Should it be investing in the long term and not pulling the plug halfway through a program? Do you have some advice at that kind of high level for the federal government?

● (1245)

Mr. Allan Fogwill: It's a very good question. I think we would all like the different governments within this country to be working together more co-operatively and to be moving forward as opposed to taking steps back. That is an inefficiency in our process. The federal government could, with its broad reach, go in and start conducting the same activities across the country, but then you're not going to foster that collaboration that I think is necessary among all the funding partners in order for them to come together and say, “We're going to do this together.”

I think energy efficiency is just one of many issues that can be dealt with in a collaborative approach. It's just hard work. There is no magic bullet. I can't see any magic bullet. Even if you come with money, people are going to want to put limits on your money being spent in their area.

I saw this on a small scale when the Ontario government was debating whether to centralize its energy efficiency activities through the Ontario Power Authority, which no longer exists, versus all the utilities. All the utilities got up in arms and said, “We want to do this because we're closest to the customer.” Yet, from a systems perspective, the most efficient way would have been to leave it with the Ontario Power Authority, but politics and pressure got to the point where now all the utilities are actually doing it themselves.

It's not going to be easy, but I do think that if you have everyone working together, it's going to be easier.

Mr. Richard Cannings: I'll move on to Mr. Luymes.

Mr. Fogwill talked about the prices of certain energy commodities coming down. Yes, I think it would be great if we all had ground-based heat pumps, but in a more realistic sense or in the near term, are there better ways to provide incentives or get people to have more efficient natural gas furnaces or have natural...?

One of my constituents—and maybe he's not the only one—has developed a natural gas-based heating system that sits outside, like a heat pump, but is enclosed, and he uses the heat of that to generate electricity, so his electricity bill goes down. It shaves a peak off those electrical needs.

Are those the kinds of hybrid systems that we need to be looking at?

Mr. Martin Luymes: That is a description of one type of hybrid system that I mentioned in my presentation. Yes, I think those should be explored.

I also think—and I just want to build on something Allan said—that a federally coordinated approach might make sense, but we also need to recognize that the energy mix across provinces varies significantly. Where it might make sense to lower carbon emissions by promoting heat pumps in Ontario, British Columbia or Quebec, it would not make sense in Alberta, because you might be shifting people from natural gas, which is quite efficient, to oil- or coal-generated electricity as a fuel type for the heat pumps. We do have to have some variability based on the energy mix.

The other point I would make is about the commodity prices. The solace, of course, is that natural gas is currently at historic lows, but I think natural gas as a carbon-emitting source or fuel, relative to others, also has to be analyzed in terms of the impact of the carbon tax. The pricing will not remain where it is forever. In fact, the government has said that we have to change the pricing of these types of fuels, which will then create incentives for people to switch to other fuel types.

● (1250)

Mr. Richard Cannings: Okay.

I'm trying to get everybody in here.

You mentioned government investment in training. In my hometown, Okanagan College has a sustainable construction management program that is designed to train people in exactly that. We've heard many times in this committee about the need for training of all sorts.

Is that the kind of thing you do? What would you recommend to the government? How would it best incentivize or invest in that sort of training, which would train people in modern construction and building techniques that would bring about energy efficiency?

Mr. Pierre Langlois: I think access to training is fundamental in this kind of market, because the best options are probably not in the mind of the big designer, but in the capacity of workers to identify this opportunity.

This is a very technical job, and you have to know what you're doing at a building and industrial level. If we invest in capacity in every way possible, from college to specialized training or whatever, the Canadian government can increase the access by reducing the cost, providing standardized courses or introducing these courses at a university level.

Access to knowledge is the key to having more energy efficiency in Canada.

Mr. Richard Cannings: Is that it?

The Chair: That's it. I'm sorry.

Mr. Whalen, you are last up.

Mr. Nick Whalen (St. John's East, Lib.): Thank you very much, Mr. Chair.

Mr. McCauley, it's great to see you again. I haven't sat across the table from you in almost a year. Thanks for joining us.

The testimony between Mr. Langlois and Mr. Fogwill is really interesting. There's this juxtaposition of what I think is a very important point that we might be able to get some recommendations around in our study. If I understand it correctly, Mr. Langlois, you've made some assumptions regarding access to external markets, in the case of your example about Saudi Arabia. You said that demand will always be there, and you had some other statements that sort of said that the excess power will be used.

I think Mr. Fogwill quite rightly analyzed.... I'm from Newfoundland, and I know the problem is that we have this situation where the price of power is really fixed as a block. The power is purchased as a block. It's transmitted as a block, and there's a rate of return that's paid based on the block. If you don't use the whole block, you could have as much energy efficiency as you want, but you're still paying the same amount for the block. I could use 100 units, but if I decide to reduce it by 10% and only use 90 units, I'm going to have a price increase of 11.11% to get me back to zero. So I don't think this assumption about demand always being there is a good one; however, I do think that, with proper planning, we can create the demand.

I'm just wondering if you guys would agree that the conversion of the transportation sector to clean energy provides, essentially, an unlimited demand source for electricity.

I'll start with you, Mr. Fogwill.

Mr. Allan Fogwill: Yes, but—

Mr. Nick Whalen: Perfect. Thank you.

Voices: Oh, oh!

Mr. Nick Whalen: No, go ahead.

Mr. Allan Fogwill: I say “but” because you have to look at the economics as well. We're actually doing a study right now to look at four cities in Canada at the detailed energy system level. Let's say you convert a city like St. John's, Newfoundland to all-electric.

Mr. Nick Whalen: That's on the transportation side.

Mr. Allan Fogwill: First of all, in transportation, you're not going to be able to do that, because you have people who need their trucks out in the woods, and they're not going to be driving out in the woods with just an electric vehicle. It's just not going to happen, so it's not going to be 100% penetration.

Mr. Nick Whalen: I don't know why, because if you go out into the woods without gas, you can't create more gas. You can always create more electricity if you have even some of the small generators that—

Mr. Allan Fogwill: It's the range anxiety.

That's just a minor point. Let me go to a more—

● (1255)

Mr. Nick Whalen: I don't agree with it, but—

Mr. Allan Fogwill: The bigger point is that you'll have to invest in distribution of electricity.

Mr. Nick Whalen: I'm saying that the demand will only be there if we carry the day in creating the infrastructure necessary for the option of the electric vehicle. There's a second piece here.

Mr. Allan Fogwill: Yes.

Mr. Nick Whalen: That is why Mr. Langlois' point isn't axiomatic. It requires some planning.

Mr. Allan Fogwill: It will require some planning. We're not sure what the cost will be.

Mr. Nick Whalen: Absolutely.

Mr. Langlois, on that point, do your retract your statement that it's axiomatic that the demand will be there, or do you think the market will take care of the requirement for electricity conversion for the transportation sector without any additional government intervention?

Mr. Pierre Langlois: I will speak for myself. I'm not necessarily in favour of too much government intervention. I think the market itself will probably come to the best solution. We have to investigate how to stimulate the access to market. When we talk about the needs for financing energy efficiency globally, whether it's transport or whatever, government will never be able to finance everything. There's no way. You probably have to de-risk the investment and find a way to attract the market. You're totally right.

The last thing is—

Mr. Nick Whalen: I have another question.

Mr. Pierre Langlois: You said specifically for one province.... I totally agree that you cannot look at one solution everywhere, because each of the provinces is very different. Not everything applies to the same—

Mr. Nick Whalen: There is one market-based approach that our party is promoting, which seems to solve the problems. You take a price on CO2 equivalency and apply that to different fuel types: from coal, obviously, which is more expensive per kilowatt hour, to oil equivalent, then oil, which is not as efficient as natural gas, and of course hydro, wind and solar at zero.

Isn't the best market-based approach just to put the appropriate price on carbon, wait for the market to take care of itself and adjust that price as we learn more?

Mr. Pierre Langlois: The only thing I would add is that I cannot see one market approach that would solve everything. I think there are a lot of different ones that have to apply in different markets and in different sectors. You put them onto transport, industrial....

I think there are a lot of market-based solutions, not only one. It's diversified.

Mr. Nick Whalen: I have one last question.

It's probably true that we want to reiterate our approach until we get the outcome we want. In terms of your organization.... I guess it's really for Mr. Luymes. It was great to see you last week on the Hill for your event. It was great to meet with your organization.

This was one of the questions I asked the other professional lobby groups that came to appear before us last week. Does your organization have a position on anthropomorphic climate change? If you do not, why not?

Mr. Martin Luymes: We have not adopted a formal position. Our members may have positions of their own. I would suggest that they have a variety of positions that they determine themselves. We do not try to impose any kind of view on our members.

At the same time, I would suggest that our organization has shown leadership in a variety of ways in addressing the climate change challenge. We have several programs. We administered a program in Ontario that was tied into GreenON. That was specifically around heat pumps. We managed the program of contractor accreditation, to be able to be part of that program. We have a program called refrigerant management Canada, which takes environmentally harmful refrigerants out of the marketplace and properly destroys them.

We have a variety of programs that demonstrate industry leadership in the climate change area.

Mr. Nick Whalen: Sure. As I said before, when organizations fail to take a position on climate change, it's a bit like enabling the bully or being a witness to the bullying and not doing anything. It is important that when facts are facts, and anthropomorphic climate change is real, it's not really an opinion piece. It's just whether or not you're prepared to stand up for facts against various industry forces that conspire against the appropriate discussion of truth and solutions to the truth.

With that, we're probably done.

Thank you.

The Chair: Thank you, Mr. Whalen.

We're all going to go back and get our dictionaries now and start looking up some of those words you used.

Thank you all very much, gentlemen, for being here today. We are very grateful to you for taking the time. Again, thank you for your patience and for waiting, given the late start.

On Thursday, we're going to have a meeting, but we need to spend a few minutes on committee business figuring out some drafting instructions for our analysts for our last report.

The meeting is adjourned.