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Chair

Mr. Leon Benoit

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● (1530)

[*English*]

The Chair (Mr. Leon Benoit (Vegreville—Wainwright, CPC)): Good afternoon, everyone.

Mr. Cullen has a point of order before we get started today with the business of the committee.

Mr. Cullen.

Mr. Nathan Cullen (Skeena—Bulkley Valley, NDP): Thank you, Chair, and my apologies to the guests. This will be very brief.

Committee members will know that this point of order is on a very important occurrence that happened just this past weekend, Saturday night, in which one of my communities was announced as "Hockeyville", and we have—

The Chair: Oh, shameless.

Mr. Nathan Cullen: —an understanding between myself and one of the honourable members across the way—

Some hon. members: Oh, oh!

Mr. Nathan Cullen: —so I've got both the home jersey and the away for him to choose from. In fact, Terrace is Hockeyville, and I think Conservative blue might be appropriate.

The Chair: Well, if this hadn't been the Canadian game we're talking about, I would have pointed out that it isn't a point of order, but go ahead.

Some hon. members: Hear, hear!

An hon. member: This could be a Kodak moment.

The Chair: We should have had a camera.

Some hon. members: Oh, oh!

The Chair: I understand we do have a real point of order now.

Mr. Allen.

Mr. Mike Allen (Tobique—Mactaquac, CPC): Thank you, Mr. Chair.

Just on a real point of order, last week when the witnesses left from our previous session—and they did a great job—I happened to speak to them on the way out. I asked a question about any examples they had of small communities that had proven experience in these technologies and energy systems, and they said yes. So I would like the clerk of the committee to contact the folks from BC Hydro. I told the witnesses I would ask the clerk to contact them to see if they could provide that information to the committee. They said they'd be happy to do that. So if it's the will of the committee, I would appreciate it if we could get that information.

The Chair: Is it agreed that this information be requested and supplied to the committee?

Some hon. members: Agreed.

The Chair: Agreed. Okay. We'll go ahead and do that.

Now we'll start with the business of the day, which is a continuation of our study on the contribution of integrated approaches for providing energy services in Canadian communities. We have our witnesses back from our last meeting. Unfortunately, votes interfered. They shouldn't this time.

From the Canada Green Building Council, we have Thomas Mueller, president and chief executive officer. From the Federation of Canadian Municipalities, we have Eamonn Horan-Lunney, manager, intergovernmental relations, and Andrew Cowan, senior manager, knowledge management unit. Shannon Watt, I believe, will be here very soon, and she is an analyst in policy and research.

We'll start directly with the presentations. There is some information being circulated, so we'll start in the order of the groups on the agenda, which is with the Canada Green Building Council, Thomas Mueller, for up to 10 minutes.

Mr. Thomas Mueller (President and Chief Executive Officer, Canada Green Building Council): Thank you.

Thank you, Mr. Chair, for inviting me to speak to you about green buildings and integrated community energy systems. There's a tremendous opportunity that we have here in Canada to improve energy efficiency through green buildings and community development.

If you look at the handout on the tonnes of carbon per person in selected cities in North America and Europe, you will notice that many cities in Canada rank significantly higher than cities in Europe. The main difference here is that European cities tend to have a more compact urban form and have more energy efficient buildings. Also, district energy systems are quite widespread in European cities to make more efficient delivery of energy to buildings possible.

On the next slide, you can see that the American Institute of Architects first identified about three years ago that buildings are a significant solution for climate change. Since then, there have been studies by the national round table and by Natural Resources Canada that have established that just the operation of buildings generates between 30% and 35% of the greenhouse gas emissions in Canada. That is equivalent to transportation and it's also equivalent to industry.

The technology to reduce energy use in buildings exists and so does the know-how. Really, this is readily available across Canada. The application of it is just a matter of costs looked at over the life cycle of a building. Buildings, of course, last a very long time, for decades and sometimes hundreds of years, but there are significant institutional and market barriers as well, which the Canada Green Building Council, over the last six years since it was first created, has started to overcome.

In the appendix of the handout, I provided some information on the Canada Green Building Council. I don't want to go into great detail on who is in the council, but needless to say, the council is a coalition of leaders in the building and development industry in Canada. It represents a cross-section of the industry. It's a non-profit organization and has grown significantly over the last six years.

We currently have over 2,000 member organizations in the council. One of the significant things is that we represent a cross-section of the industry, not one particular industry sector. The reason for this is that we think it will help us achieve our goals in reducing environmental impacts of buildings through better performance.

We currently have almost 1,200 projects registered in Canada. That's about 130 million square feet of buildings under our LEED rating system. LEED stands for leadership in energy and environmental design. Included is the Government of Canada. Public Works has adopted the system for its new buildings. We have projects in every province and territory of the country. As well, we have members across the country.

I want to show you just quickly a few examples of buildings that have achieved a high rating in energy efficiency. There's the Gulf Island Park Reserve. It's a Parks Canada building, which was the first platinum-certified building in Canada. It uses only one-quarter of the energy of a similar type of conventional building. It reduces 32 tonnes of greenhouse gas emissions per year from the building.

The next building is the Verdant, in Burnaby, B.C. It's an affordable housing project that aspires to be a LEED gold-certified project. Again, through a geothermal energy system, the building has achieved a high level of energy efficiency. It's 60% better than a conventional multi-unit family housing project. The additional cost of the system—and there are additional costs—was repaid from the energy savings that accrued through the system. There's really no net increase to the occupants of the building to have a system like that.

Finally, the Vento, in Calgary, is the first mixed-use project in Canada. It achieved LEED platinum status. It's a developer-driven project, and again, there is a very high level of energy efficiency, driven by and achieved within the market context of selling a market-based project in the Calgary market. When you ask the developer what it costs, he says it costs him as much as he can put in and still sell it in the marketplace and be competitive with his competitors. But you can see that in the market context this is quite possible.

The cost increases are relatively small. They're anywhere from zero to a LEED gold-level building at perhaps 3% and 4%. We also have LEED gold buildings that have cost less. They were cheaper and then they had the energy savings over the life of the buildings.

● (1535)

Definitely for buildings we need to look at the life cycle benefits.

We are at the beginning of this transformation in the marketplace, and the costs are continuing to come down for these types of buildings as the technology becomes more available and the know-how becomes more widespread.

If you go to the next slide, this shows the comparative energy consumption in a number of buildings, which one of our leading architects has put together. You can see over the past few years—at the left being 100%, the reference building—how energy efficiency in building design has come down to about 40%.

Already the next generation of buildings is under development in Canada, and one example is the Centre for Interactive Research on Sustainability at the University of British Columbia. This is a carbon neutral building in both construction and operation, which is currently being constructed. Carbon neutrality in construction is achieved by making a building out of wood. Wood sequesters carbon, and in this case, 600 tonnes of carbon are being sequestered by using wood in the project, versus 525 tonnes being emitted, just during the construction. So it's a net saving of 75 tonnes.

The building uses waste energy from another building next door, so it doesn't have to bring in any gas or anything to heat the building, just electricity. And the building is so efficient that it actually gives heat back to the other building, so there's again a net zero carbon balance for the project. So it is estimated to be 45 tonnes net negative on the carbon side per year.

These are the types of buildings we are seeing emerge now. They are consistent with international developments. But we also have to realize that by just focusing on buildings alone, we will not realize the full benefits of the built environment to make improvements in energy, water efficiency, waste water, or waste. You really need to move from buildings to communities, and communities with integrated systems, including integrated energy systems.

In the market scan—this was done under the national climate change process—you can see the costs and impacts of various strategies in the built environment to reduce carbon emissions. So on the vertical line is the carbon effectiveness. On the horizontal line is the carbon impact. You can see land use planning has a very low cost, has a negative cost actually, and also has a considerable impact.

But when you move over to the right-hand side, you see district energy has a huge impact, but it also requires some investment. The benefits of these investments will be accrued over the life of the development, and they contain significant environmental and economic benefits over the life of the system.

Under the LEED system, we have developed a guide to capitalize on district systems they're currently using in the industry and have used at projects. We are also working on a new LEED rating system for neighbourhood developments that allows us to integrate land use, infrastructure, and buildings in a coherent system for community certification. I can tell you that the system will come into the marketplace by 2010, and we have never seen so much interest from cities and communities wanting to use a system like that.

We already have 23 pilot projects in Canada that have been completed across the country with much success. The rating system —and I could easily give a long presentation just on the rating system as well—also addresses energy efficiency in buildings, district energy generation and cooling, on-site energy generation, and renewable energy. So it's a system that addresses land use infrastructure and building performance, including energy efficiency.

We expect that when "LEED for Neighbourhood Development" is launched by 2010, it will be a dominant system in Canada, guiding community development, including the development of integrated systems.

I chose to finish off my presentation by giving you a quick example of one project in British Columbia called Dockside Green. It's a developer-driven project, where about 5,000 residents are expected to live. It's just across the harbour from Victoria. It's a fully integrated community that is off the grid in terms of waste water treatment, in terms of water, and also in terms of energy. The only thing it really brings in is electricity. The buildings and the development target carbon neutral development. All buildings are supposed to be LEED platinum certified, and they committed to pay the City of Victoria a $1 million penalty if they don't achieve that goal.

● (1540)

The first phase of that project was certified by us last summer. It did in fact achieve the highest platinum rating in the world. As I will show you, it is working towards carbon neutrality once the project is fully built. Phase one and phase two have been completed, and the cost increases, according to Vancity, which is financing the project, are between 2% to 5%, a relatively small increase for a significant investment in infrastructure.

The wood waste energy system is using biomass—wood waste, essentially, some from the pine beetle lumber—but it can use any wood source. It uses a technology that gasifies the wood chip, and the gasification generates heat that's being used to heat the project. But it doesn't generate any emissions, because the wood chip is not burned. The heat comes from the gasification process.

These are some of the new technologies that are now available. As I understand it from BC Hydro, there are currently 15 other projects looking at using this technology in communities across British Columbia in a district heating setting.

The project is also more efficient because it's a local generation of energy, so energy doesn't have to be brought over long distances. There are energy losses the further away you are. In fact, the excess heat from that project is currently subject to negotiations to sell some of the heat to the Delta Hotel that's adjacent to it.

These are local solutions that use a local energy source with very low emissions. There is a chart on reaching carbon neutrality. Again, there's the reference building. Just in building design this project has seen 58% better energy efficiency in the buildings than the conventional multi-family building. As well, 21% comes from the renewable heat generation; that is, by using wood chips and gasification. The remaining 21% is covered through buying green power certificates from BC Hydro, from low-carbon generation of power in British Columbia, which takes this project to a carbon-neutral position.

So it has already been accomplished in British Columbia. The system is sized so that the buildings, as you can see, use less energy and it is sized to also not produce high energy demand. It costs a lot of money to build for over-capacity. This is right-targeted and -sized for the project.

If a development-driven project—and it's the first one, and phases one and two have been sold in the market—in Victoria can achieve that level of energy efficiency through a district system, through a renewable source of energy, it is a template for other communities as well. It is being used in other communities in British Columbia, which is certainly a testimony that this is working well.

In closing, I wanted to say that integrated energy systems are possible, that more research and more investment is needed to better define what the environmental benefits are, to identify the costs and the life cycle benefits of those systems, to properly design the systems along principles and seek appropriate solutions. You can't just take each system and plug it into communities. There has to be work done looking at how these systems work in different settings with different fuel sources, and as a first step, looking at what the benefits from these type of developments actually are. They need to be quantified more clearly throughout Canada.

Thank you very much for your time.

● (1545)

The Chair: Thank you for your presentation, Mr. Mueller.

We now have the Federation of Canadian Municipalities. Giving the presentation is Eamonn Horan-Lunney.

Go ahead, please, for up to 10 minutes.

[*Translation*]

Mr. Eamonn Horan-Lunney (Manager, Intergovernmental Relations, Federation of Canadian Municipalities): Thank you, Mr. Chairman.

I want to apologize, I left my French notes at my office.

[*English*]

On behalf of Mayor Jean Perrault, president of the Federation of Canadian Municipalities, I wish to thank the committee for this opportunity to speak about how federal and municipal governments can work together to better the lives of Canadians across this country.

I am joined today by Andrew Cowan, the Green Municipal Fund's senior manager. Unfortunately, Shannon Watt is in Saskatchewan today, meeting with the municipalities there about how we can work closely with them.

FCM has been the national voice for municipalities since 1901. We believe that Canada's quality of life and economic growth depend on healthy cities and communities in each one of your ridings. To track new talent and investments, improve productivity, and protect our environment, Canada must have strong and secure foundations at the local level. This is all the more important during these challenging economic times.

One area in which federal, provincial, territorial, and municipal governments can all work together is the area of integrated energy systems. Municipal, provincial, and federal governments must work together to create the regulatory conditions that foster innovation, promote new opportunities, and prepare the Canadian economy for the new era of energy and economic opportunities and of limitations in the future.

Across Canada, municipalities, many with limited financial resources, are actively working with local businesses, community organizations, and developers to create and implement integrated energy-based projects.

The ideal approach to meet and achieve energy sustainability in municipalities would involve building and using energy from multiple locally available, non-depletable sources, so that the overall energy supply is the aggregate of multiple low-impact sources. We also have to implement urban design and development approaches that support the intensification and thereby facilitate more efficient and affordable energy infrastructure options. We also must reduce or eliminate demand through various technical and management-based practices.

To support these initiatives, FCM and the federal government are working together through the FCM Green Municipal Fund. The GMF provides below-market loans and grants, as well as education and training services to support municipal initiatives and improve air, water, and soil quality and protect our climate.

Grants are available for sustainable community plans, feasibility studies, and field tasks. Funding is allocated in five sectors in municipal activity: brownfields, energy, transportation, waste, and water. To ensure the greatest possible impact, GMF partners with federal departments, agencies, provincial governments, the private sector, and NGOs to facilitate uptake of integrated energy planning and infrastructure projects.

Some of the types of integrated energy projects supported by GMF include integrated community energy planning, district heating, run-of-the-river hydroelectric generation, waste heat recovery and reuse, green building construction and retrofit, the use of solar and wind, and landfill gas capture and power generation.

Since inception, GMF has approved over 66 energy capital projects and has been involved in many more across this country. Examples of these projects can be found in communities all across the country, including the District of West Hants, Nova Scotia ; la Ville d'Otterburn, Québec; the Regional Municipality of Wood Buffalo, Alberta; and the City of Yellowknife, Northwest Territories. From coast to coast to coast we're working with municipalities and the federal government to make this happen.

The technology and knowledge being developed in these communities are used by Canadians to design new equipment and develop new construction techniques that can be exported from your communities across Canada and around the world. These projects can be the birth of new jobs, new business, and even new industries right here at home.

A $1 million investment into alternative energy infrastructure projects can result in 10 person-years of employment, but there is the added value of future economic potential through improvement of local skills and industry capacity of the Canadian labour force.

FCM has many examples from every region of Canada of local projects creating locally based solutions that have created new intellectual know-how that can be the basis of new companies and jobs. Andrew can talk a little about that later on, during the questions and answers.

Replicating that innovation and opportunity—that success—across Canada could be the beginning of new industries. We can export Canadian knowledge, Canadian designs, Canadian technology, and Canadian-made solutions around the world. Because the research and development is happening here in Canadian communities, big and small, we'll create new jobs for the years to come.

In each of your ridings, I'm sure there are examples of individual Canadians, companies, and communities taking steps to find new ways to effectively integrate energy systems when designing new projects, or looking for operating cost savings when retrofitting existing infrastructure.

● (1550)

Today the federal government has an opportunity to effectively show leadership and get involved in promoting energy integration over the next two years through the Building Canada plan and the Budget 2009 infrastructure stimulus spending.

These are some examples. On a case-by-case basis many local integrated energy systems could be strong candidates for the new P3 public-private partnership office that is part of the Building Canada plan. Or the $1 billion community adjustment fund could offer funding for local solutions to create jobs and find new and innovative revenue sources for small communities hard hit by the economic downturn in certain industries. The $2 billion for colleges and university infrastructure offers a prime opportunity to promote integrated energy systems within these institutions across Canada and possibly build centres of excellence for research and knowledge-sharing.

Municipalities are moving forward, but more must be done. We need to work together with all stakeholders to develop the policies, support the research, and encourage the new technology. With the financial support of the federal government, FCM's Green Municipal Fund is ensuring that some of these many projects proposed each year receive funding, but there are many more who would like to participate.

Through partnerships like this we can realize the potential opportunity before us. Municipal governments are ready to work with the federal government in the promotion and implementation of new policies and programs that encourage the creation of community-specific integrated energy systems that take advantage of this opportunity to build the Canadian infrastructure we need to succeed in the years ahead.

The Chair: Thank you very much.

We'll now go to the first round of questioning, which is up to seven minutes.

We'll start with Mr. Regan.

● (1555)

Hon. Geoff Regan (Halifax West, Lib.): Thank you very much, Mr. Chairman, and thank you to the witnesses for coming today.

Of course, I have to begin by congratulating Mr. Horan-Lunney for noting the example of West Hants, the county I was born in, and the next-door riding of Kings—Hants, where my colleague Scott Brison is the MP. It was interesting to note that the places like West Hants and others you listed are leading the way in showing places like poor Toronto how it should be done. I'm sure colleagues on the other side and elsewhere can appreciate that.

I'm going to start with a question for the Green Building Council.

In relation to a building like the Verdant in Burnaby and others you pointed out in your presentation, when there's an additional cost of 3% to 4%, as I think you indicated, how many years does it take before that gets paid off in terms of the savings you get in a building of that sort?

Mr. Thomas Mueller: It depends on the energy prices in any given year, but typically it's between three and four years, sometimes five years. With a geothermal system, for example, like the Verdant, the cost just for the system itself is a little higher. But usually, to keep the costs down for the occupants so they don't have to pay any additional costs, it could be around 10 to 15 years, but then after that your heat is essentially free. During that time you don't pay any more because it's paid from the energy savings.

Hon. Geoff Regan: You say after that your heat is free because you're using geothermal, for example.

Mr. Thomas Mueller: Yes. Essentially you have to pay for maintenance of a system like that, and there's a small heat pump that needs to be operated by gas, but it's not even close to the amount of energy you'd need if you heated with gas, electricity, or by any other source.

Hon. Geoff Regan: To the extent that some of these buildings are using wood as part of the construction material, what does that do in terms of their life expectancy?

Mr. Thomas Mueller: Typically in British Columbia you can build up to six storeys now with the new building code in wood-frame construction. If the wood-frame construction is properly executed and well done, in buildings that are properly maintained they can last for a very long time. They can last for hundreds of years.

Hon. Geoff Regan: Okay. What is the federal government's involvement in the LEED program? And what do you think it ought to be?

Mr. Thomas Mueller: As I said, Public Works and Government Services Canada builds buildings of a certain size to a LEED gold standard. You have a community of several projects now that have been certified, and several are under development. We've been working with the Office of Energy Efficiency over a number of years now on joint initiatives to promote energy efficiency in buildings across Canada through the LEED program and other means as well. Most recently, we're looking at building labelling as an opportunity to increase energy efficiency in buildings.

Hon. Geoff Regan: When you're retrofitting an existing building as opposed to building a new building, and having these green buildings to LEED standards, for example, used in it, how much more of a challenge is that?

Mr. Thomas Mueller: It is a bigger challenge. Often it's not as obvious. The Canada Green Building Council is launching a rating system for existing buildings by May, nationwide.

Hon. Geoff Regan: Let me ask, should there be some kind of incentive to make it happen more—

Mr. Thomas Mueller: Incentives would be welcome. For example, if a building owner retrofits a building quite significantly, at the end of the day, they have to pay the capital improvement tax. If there could be a break, for example, in the tax system for many developers, that would be quite welcome to them, in terms of their getting a break on green development for something they bear the costs of, but of which the beneficiaries are really the occupants and Canadians, through a better quality of life.

Hon. Geoff Regan: I think I have a few more minutes.

The Chair: Yes, you still have three minutes.

Hon. Geoff Regan: Thank you.

I'll turn to the FCM, and Mr. Horan-Lunney and Mr. Cowan.

As an organizer of the QUEST program, what's your view on the role the Government of Canada should take? And what are the two or three major challenges in this program, and generally speaking in relation to community-based energy systems?

The Chair: Mr. Horan-Lunney, go ahead.

Mr. Eamonn Horan-Lunney: The role for the federal government right now is to encourage these programs. We have to get the knowledge out there; we have to make sure that people are aware of what's out there. We have to make sure that programs are available.

The GMF is an example of a program that the federal government supports, but the demand coming from across Canada for this program's limited resources is astronomical. Now we're not the only program out there that does support these types of programs through funding, but it just shows that when you put out a call for tender for projects, so many will come in.

Support the technology through the various funds that we mentioned, the Building Canada fund, or through the P3s or through the economic stimulus plan. There are a number of things going on right now such that, with gentle direction from the federal government, these new technologies could be encouraged and promoted, thereby creating a local market for them and helping these local little industries flourish—especially now when we're doing so much infrastructure retrofitting, or even new construction. By creating these local markets, it will just make these companies that much more sustainable and able to export their Canadian knowledge and technology across the world.

But it really comes down to having the will to make this happen, whether it be the federal government choosing to use these principles in its own future construction or retrofitting, or by it creating programs or policies to help consumers and Canadians in general to do it by their own personal choice.

You guys have incredible influence to make this happen, just by showing leadership, creating local demand, as well as by tax policies that encourage other people to do it.

● (1600)

Hon. Geoff Regan: We're seeing a lot of emphasis from the Government of Canada on carbon capture and sequestration as a key element of its plan for dealing with carbon and climate change.

I guess my question is about how much emphasis they have there versus the emphasis on renewables, like wind and solar, and green buildings, and community-based projects, as you've been talking about. Would you like to see a better balance there? What's your view on that? How should that change? What should the Government of Canada be doing, when you consider how much they're putting into CCS?

The Chair: Mr. Mueller, go ahead.

Mr. Thomas Mueller: The best way to characterize this until now I think is that there's been too much emphasis on the supply side of the equation. It certainly plays its role in reducing carbon emissions, but there are also many demand-side solutions, as we call them, like energy efficiency and others, that can provide equal if not greater benefits and create more jobs than some of the other solutions. These just haven't received the attention they deserve. They represent a tremendous opportunity to reduce carbon and a host of other environmental impacts.

Hon. Geoff Regan: Your presentation notes that buildings account for about 40%, I think, of the greenhouse gases.

Mr. Thomas Mueller: NRCan says it's about 30%, and the Pembina Institute about 35%. If you include the embodied energy in building materials, like steel, concrete, or anything that uses fossil fuels, you get up to about 48%. That's the current estimate, so it's very high.

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

We go now to the Bloc Québécois.

Madame Brunelle, for up to seven minutes.

[*Translation*]

Ms. Paule Brunelle (Trois-Rivières, BQ): Thank you, Mr. Chairman.

Welcome, gentlemen. It is a pleasure to meet with you here, in Ottawa, especially since the weather is a bit better today.

Mr. Mueller, I will start with you. I am very interested in what you said about the use of wood. The forest industry is in a deep crisis, worse than ever. My party proposed a solution during the Summit on the future of the forest industry that was held in Quebec two years ago. It was to request that government buildings be built with wood in order to increase the uses of this material. It would be a way to use that resource.

What do you think of using wood for buildings? How durable would it be? You mentioned it a while ago. What are the benefits of wood from the point of view of energy and of resource conservation?

[*English*]

Mr. Thomas Mueller: I think wood is an excellent building material. It has high durability, and if the buildings are properly maintained, I think it has a very long life.

When you look at the building code, you see that buildings—except for houses, which in Canada are all wood-framed as you know—are typically an assembly of different materials, from wood, to concrete, to steel. Designers typically try to make the best use of the materials that are available to them for a particular building.

Of course, they do have a choice, and I do see that in some public projects, where the building code allows, there could be a higher use of wood. So, for example, in Vancouver and Whistler, with the Olympic Games, you do actually see structural applications of wood. There's a greater tendency to showcase that province's resource as a wood-producing province. I think there's definitely an opportunity to use more wood in green buildings, with the added benefit that wood does sequester carbon. I think this effect is a definite benefit, whereas some other building materials have a higher durability, like concrete and steel, and of course there are carbon emissions. Then to balance it out, concrete buildings can definitely last longer than wood buildings.

It's just to say that, yes, wood could experience a wider use. I think it's not as widely used right now as it could be, particularly in the kind of institutional, commercial-type buildings, like arenas, recreation centres, or those types of buildings where it would be quite appropriate to use it.

● (1605)

The Chair: Mr. Cowan, you'd like to add to that.

Mr. Andrew Cowan (Senior Manager, Knowledge Management Unit, Federation of Canadian Municipalities): I'd just like to add to that in terms of remote communities and some of the challenges faced with resource exports right now around the forestry industry. There are other value-added uses of lumber in these communities that could relate to integrated energy systems. For example, wood waste can be used as a fuel source to generate heat and power. There are other options in terms of waste heat and co-locating various industries close to an old paper plant, for example, that's shut down. Especially with the pine beetle infestation, there's a need to do something with this lumber. There are examples out there of communities, such as Prince George and others in Quebec, that are taking advantage of this waste wood or the lumber that's just sitting there.

[*Translation*]

Ms. Paule Brunelle: Are you referring to the use of biomass or something else?

[*English*]

Mr. Andrew Cowan: Biomass would be the technical term for waste lumber or waste from processing of lumber, yes.

[*Translation*]

Ms. Paule Brunelle: Very well.

If I understand correctly, Mr. Mueller, you said that integrated systems are possible but that we have to measure their environmental benefits. However, you did refer to the Dockside Green project where units are already being sold. The project seems to be well advanced.

Have all the benefits being estimated?

[*English*]

Mr. Thomas Mueller: The project is not fully developed, but the community systems—for example, the biomass system and these types of systems—have been put in place. To really fully understand the benefits, the project really has to be fully built out. That will be another—there will be 5,000 people living there at the end of the day, depending on the economy, of course—five, six, maybe eight years, to fully understand the benefits.

I can tell you, from having grown up in Europe, that in Germany district systems are very widely used. They're integrated into the urban fabric of the cities. For example, waste energy plants—where waste is being burned—are in the middle of the city in Munich, and they're used to heat housing in district systems.

In Canada we hardly have scratched the surface of making better use of energy sources like waste. We're starting to see those now, as Andrew has pointed out, where we harvest, for example, landfill gas, and then we'll use that as an energy source, using biomass, but there are many, many more opportunities that are available to us. The district system is just the delivery system, but once you have the right system in place, you can use all different kinds of fuel sources over the years, as fuel sources change, to provide energy and heat to a project.

With the district system you build flexibility in. If you don't have a district system your flexibility is limited.

The Chair: You still have one minute.

[*Translation*]

Ms. Paule Brunelle: I will continue with you, Mr. Mueller.

When one thinks about new energy sources, is the cost-benefit equation the major issue? It may be well and good to have a new system but one has to find the builder who will accept to carry out research for using waste products or landfill gases, for example.

Is it a matter of cost-benefit?

[*English*]

Mr. Thomas Mueller: I think currently these systems do cost more to build into a project, but it's a different approach on how to do it.

For example, in Dockside they took what the typical development would cost and they shifted the costs around, because they didn't have to pay the city development cost charges. They didn't have to pay the city for waste disposal and so on. So they shifted these costs around to develop their own systems on site. When you are smart about it and you think about it, then the cost increases are relatively small, and they are being accomplished by doing it differently. If you're trying to do this just the same way you have always done building development, you will not succeed. It's a different way of financing projects, developing projects, integrating systems between buildings and infrastructure, and you have to do that to be successful.

It's the same if you use renewable energy. It's a different type of energy. In just producing it and providing enough of it, you cannot have buildings that use enormous amounts of energy. You need to design in first an energy efficiency that allows you to size the other systems smaller. It's all connected; it all has to be integrated, and then the costs are actually quite manageable. Over the life cycle—and infrastructure systems last hundreds if not thousands of years—the benefits are significant.

● (1610)

The Chair: Merci, Madame Brunelle.

Now to Mr. Cullen for up to seven minutes.

Mr. Nathan Cullen: Thank you, Chair.

I'm reminded in this conversation that for so long I think a lot of Canadians have thought that the problems with what we're dealing with are technical in nature, that there is just not enough technology available, where we don't have the solutions to our challenges with greenhouse gases or energy efficiency. Your presentations today remind me yet again that technical is not the problem.

I'm also reminded of a town in my region near Terrace—which is Hockeyville—a small place called Fort St. James that for years was building a town hall and wanted to do geothermal. And this went through both Liberal and then Conservative administrations. It's a northern British Columbia municipality. It's not big, just a few thousand people. They were really hooked on this, because they had run the numbers on just cost. They weren't interested in greenhouse gases as such. They fought for years with government to try to find money out there available to allow them to go geothermal. In the end they just said “Skip it” and built it themselves and paid for the extra costs upfront themselves. If any of the committee members will visit, they will proudly take you down to their geothermal unit and celebrate that their energy bills are about $300 a month for a fairly sizeable municipal hall—for everything: for their heating, electricity, and the rest.

Mr. Horan-Lunney, are you aware of any national goals Canada now has in terms of its green infrastructure? I know Germany, for example, has a 5% renovation cycle going on right now, where they hope to renovate 5% of their total national stock every year. Do we have some sort of equivalent in Canada?

Mr. Andrew Cowan: I'm not aware of that.

Mr. Nathan Cullen: I'm wondering about that, because as we see, government sometimes does one thing with one hand and undoes it with the other, so many times. It doesn't have to be just this policy; it can be taxation or military spending. In this case, without a national strategy, without a national target or goal just around this topic we're talking about today, it doesn't necessarily allow all the various departments' focus.

I want to get to the role of where the federal government kicks this off. My colleagues from the Liberals mentioned this at the beginning. Is there a role for the federal government to understand, in terms of a national building code, other than just the one-off programs that exist sometimes and then get pulled back the next year or change criteria, etc.? What is the most critical role the feds can play in making this transition happen?

The Chair: Go ahead, Mr. Cowan.

Mr. Andrew Cowan: The most critical role, again, would be from a support standpoint, to look at policy that does facilitate the development, the uptake of integrated energy systems. So that can come through policy instruments. It can come through regulatory instruments. It can come through setting goals and targets that can follow through.

The Chair: Mr. Horan-Lunney would like to reply too.

Mr. Eamonn Horan-Lunney: Going back to your earlier comment about why your local community chose to go geothermal, it's because it came down to cost. That's why a lot of municipalities are embracing this and have been for quite a while. Unlike more traditional development in which one person builds a building and then sells it off, municipalities and the federal government build a building and own it for generations, as in the case of the building we are in.

They don't just look at the cost of building it. They look at the overall maintenance of it for the lifetime of that building, whether it be a hockey arena built in the 1960s or a city hall built in the 1920s. When they're looking at infrastructure investments right now, they're not just looking at how much it costs to put up a new window. It's how much it costs to put that new window in and what choice they have for windows in terms of energy costs for the next 30 years. Energy costs are unknown, but they know how much it costs to put in window type A or window type B.

● (1615)

Mr. Nathan Cullen: I want to get to this point. Among, say, western developed countries or the OECD, where does Canada place on the list on this particular topic? Are we near the top of the list? Are we a highly efficient country when it comes to our building codes, designs, and implementation, or are we near the bottom of the list?

Mr. Thomas Mueller: From the information that I have seen, compared with.... I think we compare ourselves mostly to Europe. Compared with most European countries, we are probably more towards the bottom of the list, unfortunately.

Mr. Nathan Cullen: Here is a question for Mr. Horan-Lunney about these programs and projects that you announced. I have a great concern, in the times we're in right now. Most of the government programs that I've seen announced require the traditional matching funds: the one-third, one-third, one-third. A lot of the municipalities I represent simply don't have the one-third, and they can't run deficits; they are restricted.

We've seen this pattern in building projects at the national level before. Eight billion dollars is announced, but when the dust settles, we see that 20% to 30% of it was actually spent. I don't accuse the government of any cynical measure, of withholding the money. I just don't think folks are able to apply, because they don't have the matching dollars. With no matching dollars, it doesn't happen.

How critical is it for the government to reconsider this formula when it comes to this particular topic?

Mr. Eamonn Horan-Lunney: There are a number of federal programs right now. I think there are upwards of 15 different federal infrastructure programs that municipalities have some access to. Some of them require matching funds; others are straight transfers. If you're talking about the economic stimulus, we're not sure of its details yet, so it's hard to comment. We're waiting to see the details.

Mr. Andrew Cowan: In addition to that, the Green Municipal Fund, which was an endowment given to FCM, can be treated as the municipal share of a project. They are stackable. That's an instance in which there has been some consideration of the challenges municipalities face.

Mr. Nathan Cullen: This is a question to Mr. Mueller. I'm always interested in barriers—what keeps a homeowner in particular from taking the step and making the investment. There's been some concern about the cost of the audit no longer being covered. A homeowner pays for the audit up front, spends the money on the retrofit, has another audit at the tail end, and then at that point, if everything works out, maybe they get the money for their improvement.

I'm anecdotally presenting this as a concern that will remove some people from even bothering to do it, because there's so much risk incurred by the homeowner.

Mr. Thomas Mueller: I think if we want homeowners to take action to reduce energy use in their buildings, we have to look at.... We have 13 million homes in Canada. We have a goal at the council to target a million homes and 100,000 buildings and cut energy use in half in those buildings. Twenty-five percent of the buildings and fewer than 10% of homes would result in 50 megatons of reduced carbon emissions.

Clearly, homeowners would need to be incentivized to take those steps. Even if they know that the technology is readily available and understand how to reduce energy use in their buildings—just putting double-glazed windows in helps—I think an audit is important to figure out where the improvements can be made. But the challenge is for people to get to that stage and do the audit. I think the municipalities can play a role there, working with homeowners in their jurisdictions to achieve this. But the federal government also plays a role. To achieve our carbon goals, we would like to see more investment in a fund like the ecoENERGY program, engaging more Canadians to make improvements to their homes and enabling them to make those changes.

The Chair: Thank you, Mr. Cullen.

Next is Mr. Trost for up to seven minutes.

Go ahead, please.

Mr. Bradley Trost (Saskatoon—Humboldt, CPC): Thank you, Mr. Chair.

In one of the presentations, and it might have actually been both, there was mention of regulatory conditions that can cause problems or get in the way of projects going forward. This question can be to any or all witnesses. I was wondering whether you have any specific examples of areas in which regulatory reform could be helpful to achieve this, not so much in a coercive way but in a cooperative way, whereby municipalities and again private corporations could work together in a better, more efficient way to get these projects going faster and ultimately more efficiently.

● (1620)

Mr. Thomas Mueller: One comment I would have is that most cities.... I only know two, actually, that are allowed to adopt their own energy codes, codes that are not provincial. It's the City of Vancouver, because of the Vancouver charter, and I think the City of Toronto. All other municipalities have to abide by the provincial code to increase energy efficiencies within the buildings in their jurisdiction. I know that many cities would like to have better energy codes, but simply because of how the provincial and the federal codes work, they're not allowed to.

That's why the City of Vancouver has the best energy code in the country: they have the Vancouver charter, which allows them to have ASHRAE 90.1-2007, I believe, which is a high-level energy code for buildings that are being built within the city. That's an opportunity, I think, because we need to raise codes. If you have a level playing field, it's an opportunity to bring all buildings up to a high level of performance. It's not the only solution, but it's certainly one of them.

Mr. Andrew Cowan: Improving the energy code for buildings is one of the key solutions, and setting standards for technology as well, so that it can be implemented faster. We run into a lot of barriers around new technology that is coming on line, in applying it and getting it passed.

Mr. Bradley Trost: Do you have any examples of the new technology or how these standards work?

Mr. Andrew Cowan: There's solar hot water on roof tops and what has to happen to make those...and renewable energy production, and the transfer of renewable energy, and the ability to produce it at the municipal level. Ontario just came out with their new energy plan, which incents and allows for municipalities to get into the renewable energy production field and distribute that energy.

From a standards perspective, one that has been a challenge on a number of occasions in Winnipeg is the use of waterless urinals, something that's used very much in Europe but because of our codes and standards is not necessarily something that is fully embraced. There are many examples we could point to that would benefit from some assistance from the national government.

Mr. Bradley Trost: Let me follow in a slightly different way, but one that may actually follow up. We often get questions on education and about people needing to know more, but when I do an election campaign I educate voters too. There are different levels of education. I can say “Re-elect Brad Trost”. That's very simple education. In some respects, that's the way we would educate the general public on these issues: “Get more energy-efficient; it will save you money.” Then there's education that's much more sophisticated: lengthy documents or education to technical people, to tradespeople, etc.

Where right now would be the best place to put our educational push as a federal government to provide encouragement? Would it be for the general public, would it be to technical trades people, would it be to engineering people, or would it be to municipalities? Where should we put the educational push? Where is it most necessary—assuming it is necessary?

Mr. Andrew Cowan: I absolutely think it is necessary. One of the things the Green Municipal Fund does—and you have a package of information there.... We provide and share information; we work with the municipalities to build capacity through education and training services. There are other organizations and federal and provincial departments that are also doing it.

So to answer your question—

Mr. Bradley Trost: I'm not asking who's doing it, but who needs it.

Mr. Andrew Cowan: Who needs it? I would say most of the folks you identified need it in some way, shape, or form. As we're talking about integrated energy systems, we also need an integrated approach. I don't know that this is an appropriate answer or whether you're looking for something a little more specific, but I would say municipalities.

Mr. Bradley Trost: Someone else is going to take a try at this one.

Mr. Thomas Mueller: I think you have to divide it into two groups.

One is what I would call the professionals. For a homebuilder or an engineer or a housing technologist or a plumber or an electrician, with new technologies I think there comes a significant requirement to upgrade your skills.

I can give you an example. In our Vancouver office we installed a lighting system that's highly energy efficient. The electrician didn't know what the system was and how the controls worked and was in our office forever, simply because he didn't know. In the end, he appreciated that he had learned something new.

In order to bring in the technologies and the people who install and maintain technologies, who design buildings, the capacity-building is probably the biggest demand you can have right now among professionals in Canada. We educate about 5,000 to 6,000 people a year, but we are non-profit and we don't have the reach to educate an industry that has hundreds of thousands of people working in it. The building industry is one of the largest ones.

On the other side is the consumer. I think educating the consumer is not—how should I say it?—as easy as it seems. There's a higher awareness now, and I think people are looking for solutions, so there's an opportunity to provide those solutions, however small they may be.

But just move out the different solutions. I think people pick them up and use them.

● (1625)

Mr. Bradley Trost: I'm one of those consumers who can be somewhat hard to educate. The thing that always gets my attention at the end of the day is the big dollar bill.

You're presenting these things as cost-effective and that they're self-evident. And some businessmen are getting involved. I know of one developer in Kelowna who said the first one he made didn't make money, but all the future ones would.

If these things are so efficient and in some ways self-evident from a financing perspective, why would the government necessarily have to give it much of a push? The market mechanisms will kick in, and people will see that it's in their own self-interest to save energy and therefore save money. At the end of the day, that's what motivates me more than any warm feeling about environmentalism.

I'll throw that one out there. Why isn't it self-evident just from the financial perspective?

Mr. Thomas Mueller: I think incentive, and by incentive I mean not necessarily a financial incentive, but various types of incentives, is needed—not forever, but I think it's needed initially to get people over the hump. In Canada we are quite comfortable with our lifestyle and really have never had any big resource concerns, until energy prices went up to $150 a barrel. Now they're down again.

Mr. Bradley Trost: I'm from Saskatchewan. I think that's a good thing.

Mr. Thomas Mueller: Of course. I'm not trying to argue with you. But I think that for consumers driving a car or heating a house, it might be less good. I think we were never really challenged on that front.

Incentives are good to get people over the hump, to say that there are opportunities to increase energy efficiency or reduce water use, and that once people use it on a large scale, the costs will come down.

To give an example that Andrew had, when waterless urinals first came on the market, they were exorbitantly expensive. Now you find them in a lot of buildings, because many have been bought and they're coming into the marketplace as competition and are priced in such a way that many building owners can afford them now.

I see this with other technologies as well; it's the economies of scale. The government can play a role to incentivize us so that we get over the hump, first of people finding these technologies and using them more frequently, so that we have experience with them, and then also, as more people use them—and word of mouth, I would say, is always the best promotion—more and more people use them.

It's not something that should go on forever. It's something that should incentivize people for a certain amount of time, to get them over the hump into using those technologies and then benefiting from them.

The Chair: Thank you, Mr. Trost.

We go now to the second round, a five-minute round, starting with Mr. Tonks for up to five minutes.

Mr. Alan Tonks (York South—Weston, Lib.): Thank you, Mr. Chairman.

At the beginning of the deputations there were some rather oblique characterizations of the City of Toronto as environmentally backward. As a former municipal member, I have to take exception to those suggestions. I'd like to cite the document provided by the FCM that says, "The City of Toronto has always been at the forefront of environmental initiatives." Then it gives a very excellent overview of some of the energy projects in the city. I just wanted to put that forth.

Second, I'd like to thank the deputants on behalf of the committee. I'm sure we all appreciate them.

Mr. Mueller, one of the sheets you provided said the target is to be carbon negative for both construction and operation.

There's often been a concern about the creation of green energy jobs. Is it the experience that after the development has been finished, there's an ongoing value added in jobs and the kinds of expertise needed to maintain the systems and so on?

● (1630)

Mr. Thomas Mueller: You particularly find value added in existing buildings, because there are just so many of them, and we have hardly done much to retrofit buildings or to have better operational practices. The opportunities for green jobs are really in the existing building sector: in existing homes, if you do a renovation, or in an existing building, if you do better operational practices—you install new energy systems, or whatever—and maybe there are jobs being created.

In a typical development.... I wouldn't say you have more jobs in Dockside Green than you would have in any other development, but there is upgrading in skills. The people who work on these developments are learning new skills. I think they're quite marketable. I can tell you that in our industry, which has grown tremendously, we can't find any people who have that expertise.

In terms of longer-term jobs, I think there's an opportunity for people to retrain in those jobs, to familiarize themselves with new technologies and new building practices. And it's very far-reaching.

Are there more jobs at the end of the day? I would think so, but I would like to see the numbers, as everyone would.

Mr. Alan Tonks: On another one of your overlays, you showed the LEED projects. There were commercial projects, at 36%; university/college projects.... You've broken it down with respect to percentage. But there is no mention of light industrial projects.

In an integrated energy system in brownfields redevelopment, which many urban areas across the country are engaged in, do you give any consideration through the LEED approach to incentives—a catalyst through which local municipalities or provincial and federal governments could encourage brownfields redevelopment with an integrated energy strategy?

Mr. Thomas Mueller: Dockside Green is actually built on a remediated site. It has been remediated. There are credits to be had under the LEED rating system for soil remediation.

On the LEED for neighbourhood development, there are also credits given for soil remediation, bringing an industrial area back into productive use for development. So it is recognized and it is supported.

Mr. Alan Tonks: Okay.

From the Federation of Canadian Municipalities, the critical question with respect to the GMF is what percentage of the Green Municipal Fund program funds is being used for integrated systems.

Mr. Andrew Cowan: For integrated planning, we fund studies. I don't have the actual percentage. I can get it for you.

Mr. Alan Tonks: Could you give us some examples?

Mr. Andrew Cowan: Well, in terms of numbers, as Eamonn mentioned, we have funded about 69 capital projects, and over 150....

In your package is a small subset of examples in which the Green Municipal Fund has been active. Municipalities have been much more active than just what the Green Municipal Fund has funded. Some of the examples include Revelstoke, B.C., for a community energy system using wood waste. We're looking at a GMF grant and loan of $2.7 million. We're looking at the estimated greenhouse gas reductions of 4,000 tonnes, a nine-year payback, and—

Mr. Alan Tonks: We can look that up. My researcher is looking at those. But I'm running out of time, and there is one question I really want to get to, on behalf of the committee.

In the line of questioning from Mr. Cullen, you suggested a bottom-up planning approach with respect to development of integrated energy systems, as opposed to a top-down approach. Yes, there are provincial-federal programs that can be locked into, but what has been the experience, in terms of how that bottom-up approach can happen? Municipalities are not within our jurisdiction, so how can we act as a catalyst to a bottom-up approach and set a mission in place across the country so that we could achieve the carbon reductions and meet our climate change targets and so on?

Mr. Andrew Cowan: Again, I think it's through the provision of information and knowledge. Part of planning in an integrated way is having the information you need to make that plan. Having the federal government represented at the table in that bottom-up approach and providing the information and resources required would go a long way to improving the process.

● (1635)

The Chair: Go ahead with a very brief—

Mr. Eamonn Horan-Lunney: If I could quickly add to that, something the federal government can do right across this country, wherever you have an institution, is work with the local municipality to do integrated energy, such as in a tax centre somewhere that employs a lot of people but also generates a lot of heat. Could you work with the local community to have some of that heat go to local homes and vice versa? Or water integration....

So when you're designing your buildings, work with the local community to find an integrated approach, thereby creating new technologies, creating local markets for those Canadian technologies, and creating a new labour force that knows how to work in that environment.

Thank you.

The Chair: Thank you, Mr. Tonks.

We go now to Ms. Gallant, for up to five minutes.

Mrs. Cheryl Gallant (Renfrew—Nipissing—Pembroke, CPC): Thank you, Mr. Chairman.

And thank you to our witnesses.

I'll start with Mr. Mueller. On your waste wood energy system, where is the waste in terms of gasification? Are there oils, the residues...?

Mr. Thomas Mueller: I don't know if there must be residues. I think they also have an on-site composting system.

This is just one of the systems they have on the side. There is a waste water system, where they have some solids and so on being composted. Since it's a fairly environmentally friendly process, most of the residue from the development is diverted to the composting project. It's also touted as being a zero waste development.

Mrs. Cheryl Gallant: And with respect to your feedstock—the wood, the hog fuel—does it have to be a certain consistency? Does it have to be chipped to a certain size, or dried?

Mr. Thomas Mueller: As far as I know, it has to be chipped. But they can use pine beetle wood for the source. They can use any wood, even from urban prunings. It can't have the leaves on it; it has to be solid wood. It has to be chipped to a certain size, and I don't know exactly which size that is. It has to be what we call a “clean wood waste stream”. It cannot be leaves or straw or anything. It has to be a really clean wood stream.

In British Columbia, we have plenty of wood waste. I have to confirm this, but I think they might even be able to use sawdust as well. It's basically just fibre that's being gasified.

Mrs. Cheryl Gallant: In your handout you have the LEED application guide for campus and multiple buildings. This is just the cover page. Is there more?

Mr. Thomas Mueller: It's the cover page. This is available from us. If you are interested, you can be a member and you can get that for free.

Mrs. Cheryl Gallant: Oh, you have to be a member in order to get it.

Mr. Thomas Mueller: We are a self-sustaining, non-profit organization, so yes.

But if you're interested, I'd be happy to send you a copy.

Mrs. Cheryl Gallant: Thank you. I am interested.

What does LEED certification give your members? Does it give them access to special grants?

Mr. Thomas Mueller: Not necessarily. LEED certification is a true third-party certification of environmental performance of buildings. Over the last five to six years, LEED has grown nationally and internationally, and it has become a recognized environmental plan for environmental performance in buildings.

From our projects, 40% are now private sector. It gives the private sector projects an edge in the marketplace. They can market the units in an office as a green project. They can demand higher lease rates while having lower operating costs. It means a lot of money in the pockets of developers.

On the institutional side, cities are using it to show real, on-the-ground action on climate change and sustainability. Provincial and federal governments have subscribed to it to set an example of what can be done in terms of reducing environmental impacts and providing better comfort for the people who work and live in those buildings.

The benefits are quite far reaching.

Mrs. Cheryl Gallant: From the FCM, does a municipality have to be a member of the FCM to be able to access the funds?

Mr. Andrew Cowan: No.

Mrs. Cheryl Gallant: Who adjudicates the applications?

Mr. Andrew Cowan: The evaluation of the applications is done through an independent third-party process. There's a board of federal, municipal, and private sector decision-makers who make a recommendation on the applications.

Mrs. Cheryl Gallant: I see one of your green community energy projects was in the city of Prince George. Reference is made to snow melt. Is that snow melt from what the snow plows take off the streets? Can you tell me what it entails and whether it is integrated with some other infrastructure?

Mr. Andrew Cowan: Yes, it's a reference to snow melt that's taken off the streets and then used in the system.

● (1640)

Mrs. Cheryl Gallant: The snow melt is not pure water. Is something done to take out the salt and the other oils?

Mr. Andrew Cowan: Absolutely. There would be a filtering system that would take the waste away once it's melted. It would be treated as per the guidelines the municipality has.

Mrs. Cheryl Gallant: Is it used in the water system after that?

Mr. Andrew Cowan: It's uses the water as a cooling source, if I'm not mistaken.

Mrs. Cheryl Gallant: Okay.

Actually, before I jump to LEED—

Mr. Andrew Cowan: Just to follow up on that, the premise is that you wouldn't need air conditioning.

Mrs. Cheryl Gallant: So it's the heat differential that you're using. But who needs air conditioning in the winter?

Mr. Andrew Cowan: You don't need it in the winter. You have the snow that is melting in the summer, and you would store that snow in a place that could then access the coolness of that snow.

Mrs. Cheryl Gallant: Okay. The federal government has just introduced a RINC program in its recent budget, which is funding to go toward arenas, rinks, etc. Is it possible, the way your green fund is structured, that if, for example, a curling rink accesses the RINC funding and then it wants to go the extra mile and save energy, it can also apply to this green fund?

Mr. Andrew Cowan: Absolutely. We have had that type of application come through the Green Municipal Fund. In fact, that's where we see one of the most significant opportunities: recreation centres and arenas that are all fairly outdated now and are being retrofitted or improved.

Certainly it makes sense to make sure you're putting in the best systems you can. One of the places they can come to get funding is through the Green Municipal Fund.

But as Eamonn mentioned, in our energy calls we are over-subscribed substantially. So it is a process of selection. I cannot guarantee they're going to be able to get the dollars from us.

But it is specifically for that green component, yes.

The Chair: Thank you, Ms. Gallant.

We go now to Madame Bonsant for up to five minutes.

[*Translation*]

Ms. France Bonsant (Compton—Stanstead, BQ): I will share my time with Ms. Brunelle.

Mr. Mueller, when architects design major buildings, do they take orientation into consideration?

[*English*]

Mr. Thomas Mueller: Under the LEED, buildings take into account what we call solar orientation.

[*Translation*]

Ms. France Bonsant: Yes.

[*English*]

Mr. Thomas Mueller: Solar orientation, proper massing of the building, daylighting of the building, so that you cut down on energy use—just the proper siting and the proper daylighting strategies can reduce energy use, like lighting used in a building, by 30%.

[*Translation*]

Ms. France Bonsant: For such buildings, the witness said that one could have hot water stored in cisterns on roofs. Have you ever considered having two water systems: one for drinking water and one for other uses such as flushing toilets and cleaning floors? Treated water is very expensive whereas untreated water is much cheaper. It is certainly not necessary to use treated water for flushing toilets or things of that nature.

[*English*]

Mr. Thomas Mueller: These will be called water credits within LEED and they are very easy to get. We see many buildings that use low-flow plumbing fixtures, and they also collect rain water for toilet flushing, for storage in cisterns for irrigation, for all kinds of uses.

So that again is something in the building code that is very difficult to do. Depending on which province you are in, that rain water that you collect and water that comes out of your shower, and even water that comes out of your toilet, is all defined the same way and treated the same way.

As an example, there's rain water that is stored and then used in toilet flushing, where there is really no human contact. Just over the last few years, architects and engineers were able to incorporate it into buildings and get it by the municipal plumbing inspectors.

But this is one of the challenges. You have something that is freely available, that makes a lot of sense—not to use treated water to flush your toilet—and it's actually not as easy to implement on the building scale as we would think.

[*Translation*]

Mme France Bonsant: When I see all the treated water that people or companies use to wash their cars, for example, I get incensed.

I will leave the rest of my time to Ms. Brunelle.

Ms. Paule Brunelle: Mr. Horan-Lunney, we have not yet had a chance to talk. In your document, I was surprised to read that, as far as municipalities are concerned, the federal government has the opportunity to show some leadership and, with the Build Canada program, to stimulate infrastructure development. Further on, you say that there would be opportunities for public-private partnerships in the context of Build Canada.

Since the municipalities are creatures of the provinces and come under their responsibility, how can you make such suggestions when one must go through the provinces?

● (1645)

Mr. Eamonn Horan-Lunney: I apologize, I will answer in English.

[*English*]

In each province there are agreements between the federal government and the province—and in many places municipalities—to flow federal funding to certain types of projects. In each province they have different agreements, and we would respect those agreements and the jurisdictions there.

[*Translation*]

Ms. Paule Brunelle: I know how it works: provinces submit their priorities which are then accepted by the federal government. However, the way you expressed it in your presentation, one had the feeling that you wanted to go over the head of the provinces. Mr. Cowan stated that the federal government, the municipalities and the private sector would develop projects together. What would be the role of the provinces?

How much money is the federal government investing in the Green Municipal Fund? Does it really invest money in that?

[*English*]

Mr. Eamonn Horan-Lunney: The provinces and territories are always there when municipalities deal with the federal government. If you look at all of the different federal infrastructure programs, it's always a three-level agreement: federal, provincial-territorial, and municipal. Together, they work to ensure that the same Canadian, the same voter, is represented or serviced by all three orders of government together, where it's appropriate and where all three can agree.

Mr. Andrew Cowan: Just on the Green Municipal Fund, the province has to have seen the projects that come to the fund before we would consider them. Typically, in all of the projects, or a lot of them, there are provincial investments involved in those as well.

[*Translation*]

Ms. Paule Brunelle: Can you give me an example of the Green Municipal Fund being used in Quebec?

[*English*]

Mr. Andrew Cowan: Sure.

The town of Senneterre is one that we just funded, an excellent example of a town with an integrated approach to energy, where the plant will be sending off its waste heat to local facilities around the plant. That's one example.

Benny Farm is another example of where we've been involved in Montreal, where they're looking at a new or revised development that would be energy efficient.

So those are two examples, and we have many more we can provide you with.

The Chair: Merci, Madame Brunelle.

We go now to Mr. Shory, for up to five minutes.

Mr. Devinder Shory (Calgary Northeast, CPC): Thank you, Mr. Chair.

I'll be sharing my time with my colleagues here.

We have been studying alternative energy systems, and it seems as if we are studying systems that are only available on a community basis. My question is whether we have similar kinds of systems available for individual homes. If yes, then from a cost perspective, is it practicable for individual homes? If so, are there any green municipal funds available for individual homeowners?

Mr. Andrew Cowan: For individual homes, I'm just trying to understand your question. A geothermal heat unit for an individual home is an option, supplemented by solar and wind power, and so on. Mostly what we're looking at through the Green Municipal Fund would be district systems. I think you've heard about Okotoks, for example. That place would be something that we would look at from a green municipal standpoint.

But there is technology available for the homeowner that they could either apply in a new home or an existing home to improve their heating and cooling systems, and that would result in environmental benefits.

● (1650)

Mr. Devinder Shory: But what about the cost? Is it practically possible?

Mr. Andrew Cowan: It depends on the type of system you're speaking of. For the individual homeowner, I think it would only be practicable at certain points. Again, as Thomas has mentioned, let's say your furnace dies on you. You, at that point, have the option to purchase a geothermal system. It's going to cost you more initially, but where you're going to save on it is in your operating costs of your home. You're essentially not going to have energy costs other than electricity to run the geothermal system. So, yes, there are opportunities out there that could be employed.

Now, incentives to help retrofits make use of that type of system would be good to incite the homeowner to take that option on.

The other option I've seen is utilities providing that particular system and overriding the cost of it, so that the homeowner doesn't bear the cost. The homeowner continues to pay a monthly bill, just like they did for natural gas, except that the utility would get the monthly bill and cover the capital cost. So those types of things are being explored.

Mr. Devinder Shory: Thank you.

Mr. Thomas Mueller: Again, I think there are two strategies. For new housing developments, I think we really ought to look at integrated energy systems. For existing homes, I think there are a number of technologies available now, as Andrew already pointed out, such as high-efficiency furnaces, on-demand water heaters, solar hot water, geothermal systems. There's a whole range of technologies available now to Canadians to put in their homes.

Incentivizing those types of technologies is already happening, through the federal program for homeowners to do audits of existing homes to identify exactly where the problems are in their homes and then target their dollars, very strategically because the dollars are limited, to put things into their houses that will actually help them reduce their energy bill. I think that's key to success. There are just so many homes that are 60, 70, 80, 90, 100 years old, and you will never get a house that's 100 years old to the same level of energy performance as you could build today, but you'll still be able to get it down relatively, to help reduce energy demand.

So there are two different strategies. One is for new community developments and one is for existing homes. We have to treat them differently and we have to incentivize it differently.

The Chair: Go ahead, Mr. Hiebert. There would be time, if you'd like a five-minute slot, coming up very soon, but go ahead.

Mr. Russ Hiebert (South Surrey—White Rock—Cloverdale, CPC): I'd like to share my time with my colleague.

I have two questions. Regarding solar power, for example, SolarBC, which is another organization promoting the use of solar technology, did bring to my attention recently that one of the significant barriers to incorporating a solar-powered system within an individual residence was the fact that it requires an annual inspection. It would be the only item in a typical home that would require an annual inspection by an inspector coming by, and that seems to be a substantial barrier. As the FCM, you may want to raise that with your provincial counterparts, as a way of eliminating that disincentive.

In terms of this technology, we've talked a little bit about the application to residential, and I know your expertise is in the area of subdivisions and larger developments. There may not be the economies of scale, or perhaps it's not scalable to the individual residence, but are there technologies, like the gasifier, that would be applicable to an individual home?

I'm getting the impression that it's basically a highly efficient wood furnace with very little residue. Is that not the case?

Mr. Thomas Mueller: That's correct. It would require, first of all, a system that is sized to provide the same service at the home level, rather than having a big plant in a whole community development that services 5,000 people. So there is some research to be put into it.

With house systems and systems that would work on a home scale, most of the systems you have now are from other parts of the world—many from Europe—like solar hot water and on-demand water heaters that only come on when you actually need the water. Dual-flush toilets come from Australia. In Canada we have very little research on helping home-grown technology, to help us either develop our own technology based on the resource base we have or use technologies that come from other countries that we could adapt to Canada, to kind of leapfrog years and years of development.

For both, really the dollars do not exist, and it happens more by happenstance or by organizations like ours that promote it to designers and home builders and so on to use these products, rather than by a planned approach.

● (1655)

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

We go now to Mr. Bains for up to five minutes.

Hon. Navdeep Bains (Mississauga—Brampton South, Lib.): I just have a quick question, Chair. I'm not sure if this was asked, so I want to make sure I'm not repeating someone else's question.

The terms “green jobs”, “green economy”, and “green buildings” are fairly loosely used these days. It's almost as if everyone you talk to uses this term. In your capacity in working with these projects, what definition or threshold do you use to determine what's considered a green initiative, a green project, a green building?

I'm not sure the definition is very clear, because many people use it in many different capacities, and it's been mentioned here fairly often today. I just want clarity on it, because when we talk about the green jobs and green economy, and when we talk about this integrated system, the term “green” is used fairly often.

What threshold do you use to determine something that is considered green? Is it simply a reduction in greenhouse gas emissions or is it something more specific than that?

The Chair: Mr. Cowan, go ahead.

Mr. Andrew Cowan: If I were to encapsulate it, I'd say it's in the manufacturing, sale, design, development, or production of technologies that can contribute to an environmental benefit. That could include renewable energy, production energy, or conservation technologies, as Thomas has mentioned, green building technologies and approaches, design, and so on. So the green economy encapsulates a number of those types of activities.

In terms of a threshold, whether it's a GHG thing or improving water, I don't think we would define it using one single measure. The fact of the matter is, it's a growing industry, and the fact of the matter is, Canada is buying most of its technology from abroad. There is an opportunity here to develop homegrown solutions and to assist with the challenge we have right now in the economy.

Hon. Navdeep Bains: No, I recognize the fact that we need to have homegrown solutions and that ultimately we want to be able to create the expertise and then obviously be world-class leaders. As far as the notion that something is green goes, that is something that is said very loosely fairly often, and I'm not sure that over a period time it will hold credibility if there's not some sort of clear definition. That's what I was getting at.

Mr. Thomas Mueller: I agree with you that it's used fairly loosely right now. We know why, because of what's happening south of the border.

I think Andrew covered one side of what those green jobs are in terms of production, manufacturing, and development of new green technologies that can help us, not just in housing but in all aspects of life. It's clean-burning engines for buses.

The other side is that people who do work in the industry right now are being retrained to learn new skills, including how to install technology. It can be anyone, from somebody who frames houses to somebody who installs lighting in a building like this one. I think there are new skills to be learned, and I think these new technologies are coming on.

Actually now with the recession in Canada, I think there's a great opportunity, particularly in the building industry, for people to learn new skills. Then people go back to school, and I think there's an opportunity to learn those new skills and to have greener jobs that actually go toward making housing more energy efficient, whether it is new housing or existing housing or when retrofitting existing buildings. They are learning operational practices and how buildings can be operated better.

In our industry there are so many jobs. As I said before, there are not enough people around who can do this type of work, and the demand is out there.

Hon. Navdeep Bains: Just very quickly, I wanted to get clarification on the presentation you made. On the first page, are the tonnes of carbon dioxide per person? You have that calculation. You mentioned some Canadian cities. Do you have a list of all Canadian cities or the major ones?

● (1700)

Mr. Thomas Mueller: It's in the report that was issued by the Institute for Local Self-Reliance. It's referenced here at the bottom of the slide. Is that on your slide?

Hon. Navdeep Bains: Okay, that's perfect.

Mr. Thomas Mueller: That's the report we used.

Hon. Navdeep Bains: I didn't see that. Sorry about that.

Mr. Thomas Mueller: As I said, it mainly goes back to building performance and urban form. Some of our cities, such as Toronto, are doing quite well, but I think we can bring it further down with some further considerations—

Hon. Navdeep Bains: It has domestic and then obviously international benchmarks as well, so I appreciate that. Thank you.

The Chair: Actually, your time is up, but I think Mr. Tonks will get a chance a little later.

We go now to Mr. Allen for up to five minutes.

Mr. Mike Allen: Thank you, Mr. Chair.

I thank the witnesses for being here. I have a few questions.

Mr. Mueller, you talked about financing, developing, and integrating being some of the biggest challenges you have with this. When I asked the question to the folks who were here at the last meeting, they said that sometimes it takes two to three years to plan and develop and implement this, assuming you can get the financing. It's always occurred to me that developing and implementing one of these solutions for community energy has to be one of the most complicated things you could do, not to mention the time it would take.

Has it been your experience that it takes that long to develop one of these solutions?

Mr. Thomas Mueller: I wouldn't say they take that long, but big developments, like Southeast False Creek in Vancouver's Olympic Village, or Dockside Green, require quite a bit of research and thinking about what the right thing to do is. Then there are all kinds of impediments for people wanting to implement these. One is the planning act and local regulations about the energy system, and crossing rights of ways for energy systems that are not contained on one lot. These are all challenges that the developers had to overcome before they could actually end up developing these projects.

In terms of financing, we found it was not that difficult. Maybe it's more difficult now, but half a year ago it was not too difficult to raise the financing, because the payback from these energy systems, the way they are set up, is quite favourable. So we saw Vancity and third parties, like Terasen Gas, come to the table to finance those district systems, or the geothermal systems, which they then maintained and from which they then have an income over time, just like you would have from selling gas or from selling electricity. It's just a different line of business.

I don't know what the situation is now in terms of finding financing for these types of projects, but, in my opinion, it takes longer than a conventional project, and it would certainly be of benefit if there were more projects from which we could learn how to do this, and which could be shared across the country.

Mr. Mike Allen: When you make your comments, Mr. Cowan, keep in mind that the topic of financing is taking me right down to the next place I was going anyway.

I want to talk a little bit about the fact that there is no one level of government that can fund all of the intake. We've seen the intake of projects for New Brunswick and the infrastructure projects, and the number of them is huge.

Can you address the financing piece in the context of your comments on P3, and how that might work?

Mr. Eamonn Horan-Lunney: I was just looking at the various announcements made in the Building Canada plan, as well as the economic stimulus plan, and going through these to see what envelopes of currently available cash would lend themselves to these types of projects. It was just one example.

I know that the P3 office is not really operating yet, so this is something they might want to look at. I know these types of projects do require financing, and that's an office that will be looking at finding financing and projects.

The big challenge that municipalities have is that for every tax dollar collected, they only get 8¢, so they are looking for partners on some of these projects to make sure they can provide the service to their constituents and have sustainable development in their area.

Mr. Andrew Cowan: A model to apply, if that scenario needs to be explored more, is the Green Municipal Fund, where we do have private sector partners involved in some of the projects that we fund. Again, it's a matter of lining up these programs to see what each of them is funding and then to see if there's a possibility of adding in the green component, or that additional incremental environmental aspect, to the program.

Mr. Eamonn Horan-Lunney: It is project by project. I can't give you a blanket statement. It depends on what is going on, the local requirements, and the local need.

● (1705)

Mr. Mike Allen: Are your municipalities now actually thinking so long term, saying, I'm going to build my community energy plan or my community energy savings plans looking ahead 10 to 15 years? Then they can look at the sequence of projects, because they would have to line up their infrastructure funding over a period of time. And how do they make sure they do something that keeps integrating as they go forward?

Mr. Andrew Cowan: Some have, yes, and there are leaders out there. Calgary is one, and there are others. Through our funding, we would encourage that type of long-term approach to take place. It is tied to your capital estimates around infrastructure projects and so on. How that's actually applied still remains to be seen.

I also wanted to comment on the length of doing something.

Thomas, I think you will agree.

For example, with green buildings or integrated energy systems, we have been applying these types of projects for some time. That time becomes shorter and shorter the more we do these things. Part of getting this out is to replicate the experience of others. And we've evolved over time. So, for example, if you start the considerations of that project at the beginning, you can shorten the length of time required. So there is an additional length of time to do that type of project, but it's becoming shorter and shorter as we build the capacity internally to deliver.

Mr. Thomas Mueller: I would agree with that.

You can use the Enwave project in the city of Toronto as an example. As I understand the latest on it, I heard they were oversubscribed. All the office buildings and new developments want to sign on to the deep lake water cooling.

These are some of the community systems that I think we can put into Canadian communities. If developers are given the chance, they will hook up to those systems. Knowing some of these developers who have done these projects, they do it because they obviously want to make money, but they also think it's the right thing to do.

We put an extreme burden on them in terms of the length of time it takes to do the development. Essentially, they are pioneers. Once they figure it out, of course, it becomes a template, but we do put a burden on them because there are more barriers than there are solutions for them. It creates a certain determination, I guess, to see those projects through.

The Chair: Yes, sir, very briefly. Mr. Allen's time is finished.

Mr. Eamonn Horan-Lunney: To go back to your first point, one of the biggest challenges municipalities have, as you said, is that they have to plan things over the long term, but they do not have long-term funding. All the funding they have is short-term and project-specific funding, especially if it comes from federal or provincial sources, so they spend most of their own revenue on just maintenance. If you want to have long-term planning, we need to have long-term, sustainable funding from other orders of government, because we only get 8¢ out of every dollar.

The Chair: Mr. Boughen, you have about two and a half minutes.

Mr. Ray Boughen (Palliser, CPC): Thank you, Chair.

I'm looking at the implementation of the integrated energy system. How do you see it affecting municipalities in the area of economics? You mentioned it just briefly. What do you see as inhibitors or avenues for success around the whole economic question?

Mr. Andrew Cowan: I'll try to answer that. Is that within the economic question of economic development or the financial situation of a municipality?

Mr. Ray Boughen: Actually, it's development and then having the project run forward. Once it's developed, it's okay and it's operational. What do you see in terms of aid or problems for municipalities as they move into that integrated system?

Mr. Andrew Cowan: Again, first and foremost, I think it's probably getting the resources to fund that type of system. I don't see any problems once it's up and running. You'll need to maintain that system.

It's one of those things you hear about in terms of win-win-win, because once you have.... If we're talking about a district system in a small community, you're saving taxpayers money over the long term in terms of the operating and maintenance costs going down. You're also likely, as we've talked about briefly here, either transferring jobs or creating new jobs to maintain that system. The economic aspects and the financial aspects of the community are positive in most cases, so long as you can see why you need to invest in them.

I used to work for a city. One of the challenges we always had was, “We should maybe do some energy efficiency”, and it was, “Well, how much is that going to cost us?” Well, it's not about a cost; it's about an investment. It's not about the next four years; it's about the long term. If we can plan and then implement in that fashion, the benefits are substantial from an economic, a social, and a financial standpoint.

● (1710)

The Chair: Thank you, Mr. Boughen, for your question.

We'll go now to Mr. Hyer for about two and a half minutes, and then finally to Mr. Tonks for about two and a half minutes.

Mr. Bruce Hyer (Thunder Bay—Superior North, NDP): Good afternoon, gentlemen.

I'm going to ask a very broad question. I'm hoping for very snappy, short, sound-bite answers. Pretend you're politicians in front of the mike.

The Chair: So about half-hour answers, then, gentlemen? We're out of time. I'm sorry.

Voices: Oh, oh!

Mr. Bruce Hyer: Yes, in front of a media mike.

If we assume that 1990 is the base year and that we need to reduce our greenhouse gases by 25% by 2020 and 80% by 2080, with about one-third of our energy needs coming from buildings, one-third from transport, and one-third from industry, 99% of the scientists, 80% of the public, 62% of the politicians, and four-fifths of the federal parties seem to believe that we could and should do that.

If we made you energy czars—and you've thought about this a lot—could each of you give me one best bet from your point of view, relating to what you do, and one obstacle, if you want to add that, in about 30 seconds per answer for a total under his time limit?

Mr. Thomas Mueller: Do I have to go first?

Voices: Oh, oh!

The Chair: Mr. Mueller.

Mr. Thomas Mueller: In 30 seconds?

I think the biggest opportunity is to cut energy use in buildings in half, by 50%. The technology exists, the know-how exists, and we have a tremendous green building cluster, I should say, in Canada. We're renowned worldwide for that.

One of the biggest challenges, I think, is leadership. We see some leadership now, both from the industry and from government, but we need more leadership to make it happen. It's not in the technology, it's not in the know-how; it's actually us as Canadians making a commitment to moving forward and making real change on the ground.

Mr. Bruce Hyer: Thank you.

Mr. Andrew Cowan: Since Thomas has covered buildings, I'll go with transportation as a big bet.

One of the biggest barriers is coordination and partnerships and the will to move forward. We haven't talked much about transportation and energy today, but that is a huge component of community energy planning that needs to be addressed. It's a third of communities.

Mr. Bruce Hyer: A little bit of specificity, quickly, please. Could you be a little specific?

Mr. Andrew Cowan: Well, in communities, the transportation sector represents about a third of all energy and GHG emissions from it. So supporting public transit is a winner in all aspects, if you go through the sustainability principles of financial, economic, and social. That would be a prime focus.

Talking about how to plan cities better to accommodate transit and transit infrastructure is another area. And then the whole idea of vehicles—single-occupancy vehicles—is something that needs to be addressed. Part of the challenge there is measuring it, measuring change from one mode to another.

The Chair: Thank you, Mr. Hyer.

We go now finally to Mr. Tonks, just before the bells.

Mr. Alan Tonks: I'm sure the committee would be interested to know that the highly successful deep water heating and cooling corporation that was created in the city of Toronto, which presently is overwhelmed with people who want to be part of it, was under my administration in Toronto. But that's not what I wanted to say.

On the heels of that last question—and Mr. Allen was trying to get a sense of the scope and how a municipality would approach a redevelopment—let's use a hypothetical one. This would be a large redevelopment in an urban context, where there are many interests. There are social housing interests; there are transportation and transit interests; there are arenas in an area around probably a 100-acre redevelopment site. In order for it to be phased, many of these opportunities for an integrated energy approach are there. They're not all going to be achieved at once; they're not going to be achieved by one program.

Is Dockside Green the best example you have of that scale of development with those kinds of opportunities, or are there other developments in the national experience that exist out there?

● (1715)

Mr. Thomas Mueller: Dockside is the one that's the most advanced, because it's been completed, occupied, and sold, but there are many others. I'd be glad to provide you a list of the projects we are familiar with, in making that happen.

I think in any community development or redevelopment, if I were a municipality, I would set the goals, and I would let the creativity of the market, the creativity of the developer and the designers, find the solutions. So set the targets: this project cannot use more than half the water of a commercial project, or it has to reduce carbon by 60%, or whatever it may be. Then let the designers and the developers come up with the solution.

Mr. Alan Tonks: Perhaps the committee could have that information. If you could forward that, it would be very helpful.

The Chair: So noted.

Mr. Cowan, do you want to give a short response?

Mr. Andrew Cowan: We have examples as well that we can provide. I think Regent Park is a good example, where they're looking at energy within the redevelopment of Regent Park. Strathcona County is a smaller community with an urban centre that's looking at an integrated approach. It isn't just the large urban centres we have to emphasize. We can provide some smaller remote community examples as well.

Mr. Alan Tonks: It would be very helpful.

Thank you, Mr. Chairman.

The Chair: Strathcona County, by the way, is in my constituency. I just thought I'd mention that, if missed.

I would like to thank you all very much, gentlemen, for being here today. The information you've given us is extremely helpful.

I would also like to thank both Mr. Regan and Madame Brunelle for putting off their motions until tomorrow, so we could hear from these witnesses. Thank you all very much.

We will now go to the vote.

The meeting is adjourned.

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