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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.

We have four witnesses from three groups here today.

At about quarter to 5 or so, we will end this portion of the meeting and go to a discussion of future business, a discussion of what the draft of this report might look like, as well as some other issues. This is just a heads-up. I understand we have bells at 5:15, so we want to make sure we leave enough time to handle that.

We have with us today, to continue our study on integrated approaches for providing energy services in Canadian communities, the following: as individuals, Martin Lee-Gosselin, professor at Université Laval and Imperial College London, and Atif Kubursi, professor of economics at McMaster University. From M.K. Jaccard and Associates Inc., we have with us Christopher Bataille, director and business manager, and Robert Joshi, consultant.

Welcome.

We will take the presentations in the order in which they are listed, starting, then, with Martin Lee-Gosselin from the Université Laval and Imperial College.

Go ahead, please.

[*Translation*]

Dr. Martin Lee-Gosselin (Professor, Université Laval and Imperial College London, As an Individual): Good afternoon, everyone.

I would like to start off by saying that I prefer to make my remarks in English this afternoon, in order to speed up the discussions with the other witnesses. However, I would be pleased to answer any questions you have in French.

[*English*]

My name is Martin Lee-Gosselin. I'm recently retired from Laval University, where I hold an honorary appointment. For the period of 2006-2010, I'm also visiting professor at Imperial College, London.

I come to you as one of a panel of researchers today, and I think we will deliver rather different messages from some of those you've heard before. My particular area of work is user behaviour, consumer behaviour, particularly in the context of planning and particularly transport planning. I've also been responsible in the first part of this decade for a large international program of research in 16 universities looking at user behaviour as an input to the simulation of land use, transport, telecommunications, equity, and sustainability relationships.

I'm particularly interested in understanding how people respond to new technologies and policies and deal with unfamiliar situations like energy shortages. Today, all of this comes together in decision support systems, and we address two types of vulnerability: the acute problem of energy supply perturbations, including price perturbations, and the chronic problem of unsustainable development and climate change. I would also mention that I've been involved in the organization of the QUEST workshops.

Now, energy efficiency is a tough one for decision-makers to handle, in part because the scientific evidence, like the community energy systems we're studying, is unfortunately siloed. We had a workshop here, a joint U.K.-Canada workshop, in 2006 to look at the scientific requirements to move integrated urban energy systems ahead. Although I would be happy to supply to you some results of that, they're rather technical; they have to do with data and modelling. I also wanted to mention that this group, some of the brightest minds involved in modelling energy use, said that we, the researchers, are not doing a very good job of telling the story to the decision-makers about what the results mean.

Somewhat in that spirit, I just want to share six thoughts with you, which you may want to dig deeper into if you wish, rather than try to replicate some of the other kinds of testimony you've received.

First, here's a thought on integration itself. The urban world looks pretty seamless to most of the people who live in it. When people are preoccupied with getting access to day care or to shops or health services or employment, the world looks pretty seamless to them, and they don't see the large number of professional interests that unfortunately are not talking to each other very well. But even though it looks fairly seamless to them, they, themselves, have their own silos. They don't see the connection necessarily, for example, between taking a car a short distance to go and buy a loaf of bread and turning down a thermostat. Increasingly, we hope these things will be on the radar in the same way for the consumer.

The second point is that we're often wondering whether communities are going to be willing to look at what happens in their community through an energy or sustainability lens. Probably most people won't do this in the abstract. But one of the things we have learned from research is that when you have multiple innovative opportunities such as are now being offered by energy efficient products and services, there may be an opportunity here to resonate with people who are ripe for change, who are ripe for a shift in the way they live their lives.

One of the things we've learned from longitudinal data is that when people change things, they often change a whole lot of things at once, and indeed there's some delay in changing things that to an external observer look like they ought to have been changed a while ago. So there may be some good news here for creating the kind of environment we're talking about with integrated urban energy systems.

My third point concerns the wisdom of the consumer. When electric cars were pronounced widely as being rejected by the consumer, what was being said was that most people recognized that electric cars, as they existed, particularly in the nineties, were not a very good substitute for conventional heat engine vehicles. They were a lot like microwave ovens, which were originally a flop because people expected they would displace a conventional product. Consumers, in their wisdom, thought of very creative ways to fit those battery electric vehicles, poor as they were, into their lives. We have some research on that from California and France.

● (1535)

I believe that Canadians will invent new ways of living in the face of energy efficiency opportunities, and we need to catch up with their thinking.

My fourth point is that it's really central to give feedback to people. We need to know how we're doing. The same technologies you've already heard about, which allow for smart grids and peak pricing—and by the way, I'm not just talking about peak electricity pricing, I'm talking about congestion pricing in vehicles—could eventually provide consumers with a one-stop balance sheet that reveals their household's recent and cumulative energy performance and cuts across the rather artificial boundary we have now between building energy use and vehicle energy use. This is particularly true, but not essentially true. It's not necessary that they have vehicles plugged in at home, but that sure would make it more interesting.

It's possible that this sort of information would be far more compelling to consumers than the calculation of payback periods. It could help them choose between different uses of energy. Similarly, communities need a synthesis of such balance sheets to know how they are doing.

My next to last point, and with all respect to one of the members who warned me that I shouldn't be asking for money, here are some priorities that from a decision support perspective I think are the sort of business the federal government should be in.

There are three priorities. First of all, there is a really important federal role that has existed since 1991: to provide a national clearing house of energy end-use data—to monitor it, model it, and to provide evaluation. It draws on university expertise, and in particular I'm thinking of the three data and analysis centres in B.C., Alberta, and Quebec.

Second, there is a need to increase the variety of experiments in integrated community energy systems, the test cases at appropriate scales. Complicated things can only be done on a relatively limited scale if you want to encourage, without getting tied up in institutional problems, the entrepreneurship and creativity of Canadians to take risks, to learn what the errors are, and to help build that narrative about what is worth doing.

Third, I believe the federal government should be providing the conditions for some of the beachhead innovations you've heard about, such as low-carbon vehicles or distributed energy production. I'm not picking those in particular; they're only examples. But that's only if the experience of actual implementation is evaluated as part of an integrated approach. These are not silver bullets. They are potential help in relieving the roadblocks in integrated urban energy efficiency.

To conclude, ladies and gentlemen, I believe we should be in the incubation business. Canadian communities have done this for years with small and medium enterprise. Why can't we use the same model for integrated urban energy systems? The impressive variety of stakeholders who have lined up with the QUEST venture should nurture and interpret and publicize a variety of integrated energy management packages that meet the needs of different sizes of communities and different regions of Canada.

The research community is ready to help. It is a source of innovation—for example, at Imperial College, we have the urban energy systems project, which is trying to develop integrated energy, waste, and other systems. Finally, the researchers are a source of the very evaluation methods without which we will not know whether the initiatives being incubated are of any use.

Thank you.

● (1540)

The Chair: Thank you very much, Professor.

We now move to Atif Kubursi, professor of economics, McMaster University.

Dr. Atif Kubursi (Professor, Economics, McMaster University, As an Individual): Thank you, Mr. Chairman.

I also come to you as president of Econometric Research Limited, which is an outfit that specializes in impact analysis, the type of methodology that I'll talk to you about.

We all know that many Canadian communities are known for their dependence on a single, dominant industry and that this activity is often resource-based—mining, forestry, and even sometimes tourism. These communities have typically found it hard when their dominant activity scales down or the price of its products declines: unemployment rises; population declines; families move elsewhere to seek employment; asset prices evaporate; home prices, all of a sudden, are completely depressed; and there are many socio-economic dysfunctions from crimes, family violence, and other things that happen.

These communities really found it very hard, particularly in the seventies and eighties. They had to meet severe challenges that came with some structural breaks in the system from two free trade agreements, from the GST, and from the technological advances that came with the ICTs. They have had to restructure in very difficult circumstances and with very limited resources and capacities.

Today they face even worse situations as the international financial crisis now has migrated to the real economy, and they are basically absorbing incredible costs in terms of a reduction in world trade. These typically are export oriented, lack of access to credit, restricted resource prices, and limited opportunities.

Typically, many communities ignore and dismiss the need for economic renewal when the prices of these resources or economic conditions are good. When the layoffs and difficulties and population losses become the experience, there is increased interest on the part of government—policy-makers, public servants, municipal forces—and the communities in economic renewal and diversification. But this is typically the time when it's extremely difficult to kickstart the economy. Interest increases, but the capacities are at their lowest level, and it's extremely hard to do something about this.

This is why I think integrated energy systems, the kinds you are discussing here, could be seen within this context as some growth poles, where they can create employment opportunities, diversify the economy, garner natural comparative advantages—some areas have more sun or maybe have more wind—and they can slash import bills because most of the energy they typically use does not come from their own perimeters, and they can lay down some strong foundations for upstream or downstream activities.

The challenge here is to identify these opportunities and to see if there exist methodologies, techniques, moulds that will allow you to quantify what these opportunities are, where they are, what impacts they will have, how many jobs they will create, what level of jobs, and the success possibilities these may have. This is part and parcel of what economic impact analysis is all about.

Typically, economists have looked at this in a number of ways, and economic impact analysis is one of many social accounting frameworks that deal with this, but it is different, and in many respects it has its own niche. And it is the niche, I would argue with you this afternoon, that is probably most aligned with the kind of interest you are talking about, where you look at communities and see to what extent you may be able to shore up these communities, create alternative economic activities, and capture some of the natural wealth that may be available to them.

The types of economic analysis have always been at the macro level—this is a general level—but these are probably too aggregate, too broad, too general. They may not be really the appropriate one for the communities.

● (1545)

All of those have really used microeconomic analysis, too small, too partial, too truncated, so that they're not able to situate the energy sector within the total framework of the economy. It's quite dangerous, and I've seen it many times, when people talk about one sector, the energy sector or any other sector, in isolation, independent of the overall economic interactions this sector may have. This community is part of a constellation of communities.

The focus here should really be on a broader interactive system where the energy is seen within the broader economic structure, even the social and environmental structures. It's not separate accounting, but one that can integrate many other accounts. It would also be able to come down to the community level; it does not stand at this general GDP impact or total employment impact. It could look at the income of the community, the prices of homes in the community, the social dysfunctions in the community, and employment opportunities.

It is basically dependent on an accounting framework that Canada has done very well with, called input-output, where the tables are produced with some lag. Hopefully, we can really argue for speeding up the process and maybe going to lower levels, usually at the provincial level. But they can provide a working system that we have used a number of times to fashion and create regional-local activities that capture the interactions among the sectors and communities.

It begins by basically and fundamentally looking at three aspects. One, that independent of the primary importance of activities.... Certainly a pristine environment is good for its own self and protecting the environment is good in itself, but ignoring analysis, especially impact analysis, does not go into valuing these important primary effects. It really says that whenever you use scarce economic resources, there are repercussions and consequences, and that these consequences can be identified and quantified. And they're typically much larger than the initial impact.

If you really look only at the direct, initial consequences, you get a poor, truncated, limited picture. The overall picture that could come from the direct, indirect, and induced—and I'll try to explain this quickly—is typically much larger than the initial effect. If you were to look at that sector alone, not looking at the derivative, secondary ripple effects, you will be limiting your perspective and not capturing the full values that could be created. The impact analysis gives you this ability to go beyond the direct impacts to the total impacts.

Imagine we'll work with you through a production of wind energy. You would need machinery, and machinery needs steel. Steel may not come from the community; it might come from my country in Hamilton, and it may really need energy from other places. It may need plastics from Alberta. It has to really capture all the derivative impacts. Then each time at every level you're producing wages and incomes; people will use them on their favourite beer, maybe in moderation. In that respect, you have to capture all these things. In the final analysis, you would also like to know the contraction of this that remains within the community, and then this is much larger than the initial effects.

The second thing is that when economists come to impact analysis, unfortunately they have come as close as alchemists, trying to create something out of nothing. There is something called the multiplier, and there is nothing more dangerous than the multiplier in the hands of economists and public servants. Everything is multiplied and magnified.

What is necessary and important here is that these multipliers are far fewer than they usually are, but they're still very poor ones. What I would argue with you, what we have really done...and we've just completed a study for the OPA, the Ontario Power Authority, for the conservation office on energy efficiency, and you'll find the net impact. If you use wind energy and don't use fossil fuels, then you have the positive impact of the wind energy, but you have a negative impact of scaling down the use of fossil fuels. The net effect is what really counts.

What's interesting is that with conservation, when you save, these savings don't disappear, don't evaporate. We call them avoided costs, but they can be reinvested in the economy. If the consumers realize them, they may really spend them on general consumption. If businesses were to realize these savings, they could be increased investment.

● (1550)

What is crucial here is to look not at the gross impacts but at the net impacts. What is also quite necessary and important, and seems to be a direct impact of the system, is that you have to look at all these aspects at the same time.

Suppose you want to build a new energy system. There are capital expenditures. There'd be new, incremental capital that did not exist before. You have to look at this opportunity cost, such that if you don't invest here, could you invest it someplace else in the community or in other places? You have to look at operational and maintenance costs. You have to look at the avoided costs. And you have to also look at what we call “induced investments”. The fact that you create some energy base may, itself, be a lure for others to capitalize on this available supply downstream and upstream.

Thank you.

The Chair: Thank you very much, Professor.

Now I'll go to the last group, M.K. Jaccard and Associates. We have Christopher Bataille, who I believe is going to make the presentation. You have up to 10 minutes.

Go ahead, please.

Dr. Christopher Bataille (Director, M.K. Jaccard and Associates Inc.): Thank you very much for the opportunity to speak here today.

Just for clarity's sake, you should have a briefing note from us as well as a set of slides, with green sides on them. I'll be speaking to those. I'm kind of used to PowerPoint and may use it as a crutch, but what can I do? Does everyone have them? Okay.

Just by way of general introduction, I'm the director of M.K. Jaccard and Associates. It's an energy policy consulting firm based in Vancouver. It's a private consulting arm of a research group out of SFU run by Dr. Mark Jaccard. We do any manner of policy associated with energy use and its impacts, so we look at local air quality, energy use, and energy supply. Our bread and butter for the last five to ten years has been climate policy analysis.

Does everybody have those pieces? Okay, I'll just not worry about them.

One of our main tools in all of this—and if you're familiar with the climate policy debate, you may have heard of it—is the CIMS hybrid technology simulation model, which has been used by NRCan, the national climate change process, EC, and the national round table for its recent *Getting to 2050* work, in which they advocate carbon pricing for the Canadian economy.

Besides the federal government, we've also done work for the provinces of B.C., Alberta, Saskatchewan, Ontario, and Nova Scotia, and we've also been looking at doing work for the cities. We just completed work for the City of Vancouver, and we're looking at other municipalities right now. So we've looked at the entire breadth of jurisdictions in Canada. And it's mainly for climate policy issues.

So that is MKJA. And just so you know, I wear two hats. I have a position at the university, but 80% of my time is spent working as a private consultant.

Just for some general context here—and everyone around the table is going to know this—Canada's targets for reduction in our greenhouse gas are 20% below 2006 levels by 2020 and 60% to 70% by 2050. Kyoto was 6% below 1990. Our actual performance on GHGs has been an increase of 22% over 1990. So we've been going in exactly the wrong direction in all but the last couple of years. Emissions have just started coming down a bit.

● (1555)

In terms of the urban picture with respect to GHGs, the personal transport, commercial buildings, and residential emissions constitute about 40% of emissions, and that's including upstream natural gas processing and upstream production of electricity. If you include a bit of light industry—the urban light industry and urban freight transport—we're looking at about 60% of emissions coming out of our cities, one way or the other.

The other thing is that Canada's population is expected to increase, and most of that increase is going to end up in our cities. So a big part of the whole GHG issue is basically an urban issue, one way or the other, along with all our other urban issues. That gets me to the scope for integrated urban energy systems.

The overarching question with integrated urban energy systems was, what if we could densify our cities, drive less, use transit, and walk more? In other words, all our daily destinations would be brought closer together: work, school, the nursery, shopping, what have you. You would bring our buildings closer together so that we could link them, so that energy could be used, reused, and used again. You would start out with really high-quality energy being burnt once, and then the energy would cascade as heat through several buildings, instead of having a natural gas furnace burning in every one of those buildings.

Also, we would think of buildings as energy producers as well as consumers, using passive and active solar, and waste as fuel. Then, in order to take maximum advantage of this network of small and large energy users and consumers, we would utilize a smart grid that acts more like a web than the one-way flow of energy we're used to. We have a big energy production facility in one place and we pipe all the energy to the consumers. Instead, what we would have is an active web that's looking for the cleanest, cheapest, and most reliable power at all times.

That's the overarching vision, and it has a lot of people excited. The question is how much it has by way of policy and engineering legs.

MKJA was contracted by the QUEST group, the Quality Urban Energy System of Tomorrow, to do a scoping study to see whether there is some way we could lock down some of the quantitative potential in this. What are the megatonnes of emissions that could be attached to reducing emissions here? Are there effective policies that we could implement in order to reduce those emissions?

We did this in a two-part way, and it's shown on the top slide here. First we took a look at a literature review of what's already been done, trying not to reinvent the wheel. The second stage was a quantitative analysis using our simulation model.

With the literature review, we found that on top of energy efficiency and fuel switching—and it's generally agreed that carbon pricing is the most effective way to get really effective reductions from the efficiency of fuel switching—strong and effective policy to induce densification in our cities and integration of the energy system could reduce our urban emissions by 40%-plus; this is in the 10- to 20-year timeframe. If you were trying to go for an absolute maximum, it could be up to 90%, if you completely linked up the energy system in the urban centre.

That's coming from the literature. How useful is it in Canada? What does it count as, in emissions?

We then took the CIMS model, which doesn't do this energy integration stuff all that well because it's non-spatial, and ran a carbon price up to $200 a tonne—which is the maximum, basically, that anybody's expecting to see, because it's seen as the global backstop price for cleaning up all of electricity and running everything on electricity—and then looked at what emissions are left in the urban centres.

If you apply the literature review amount that we found, that 40%, what does it turn into in megatonnes? It turns into a 2020 reduction of about 65 megatonnes. Canada's current emissions are just over 700 megatonnes, so this would be a little under 10% of our net emissions.

When you run that $200-per-tonne carbon charge, we don't get to our targets. We don't get to it with $200 a tonne, but if you add this densification integration policy on top of the $200 a tonne, we no longer have to buy international permits. The 65 megatonnes at $100 a tonne amounts to $6.5 billion a year that we don't have to purchase from somebody else, if we're trying to effectively meet a target in 2020. Or you could use a mix of cheap permits and a mixture of densification integration policy in order to bring in these cost solutions. However, this doesn't come for free. That 65 megatonnes is not something we're going to wish into existence. A fancy PR campaign is not going to make people drive half as much as they do and buy energy efficient everything and move into dense urban condos. You need effective policy to do this.

● (1600)

To get that 40%, you have to halt the geographic expansion of our cities—you have to stop sprawling. Then you identify densification nodes and corridors and provide reliable, safe, fast, and timely transit within those corridors. You change your land use zoning, your property taxation, and your site design permitting to reflect the new urban form you're trying to build.

Our current property taxation system works exactly opposite. If you're trying to densify our cities, it's working exactly opposite. As you go out into sprawled communities, people are paying only an average of the increment on sewers, water pipes, and electricity infrastructure. You should be making them pay for every additional amount. In the dense corridors, you should be paying less tax per unit than you'd pay on the edge, but we're all paying the average. Apply full costs in externality pricing on energy, water, and waste, and implement some form of demand and supply planning and policy for water, waste, and energy services to make this new urban structure work.

That was phase one that we did for QUEST. You cannot hang large government policy on a scoping study like this. Given that there seemed to be some potential here, QUEST asked us to look at a work plan for something more quantitative, with more foundation to it. We proposed to take the best of the various disciplines involved—policy, economics, land use, transport, waste—and build it up into a credible national study that could be used to support this kind of policy.

The problem is, you're asking academics and experts who hardly ever work together to work together. Believe it or not, transport modellers rarely talk to land use planners or climate change economists. For some reason, this is what occurs. So the idea was to bring the best of all this together in one study.

The method we suggested—and this is just a proposed work plan—was to use the CIMS model and the energy technology simulation model as the integrating template. As you reduce electricity and natural gas in our cities, you want to know how much emissions are reduced in the natural gas fields and by electricity producers.

But instead of using literature values to actually get that densification happening in the cities and to get the energy integration, we used specialized land use transport and energy models in order to build three archetypes—a small, medium, and large city under three different scenarios: (1) a reference case where we continue to build our cities as we have continued to do with sprawling suburbs on the edges; (2) raising of technology standards, where you make the technologies as sufficient as possible, and this would be in conjunction with some form of carbon price; (3) adopting moderate and aggressive policies that promote densification energy integration, so you can see what's happening. QUEST is trying to get up enough support to make this happen.

First and foremost, the urban form is a public policy choice. It doesn't just happen; we choose it. We choose it with our municipal zoning. We choose it with our urban planning. We choose it with the provincial acts that govern how our municipalities run. We choose it with how we use our federal infrastructure funds when we're leveraging new roads, transit projects, what have you. It's a public policy choice. In other words, we can choose sprawling car-orientated cities or we can choose dense, walkable, and safe cities. This is something that's in the hands of policy makers.

Second, densification and integrated multi-stage use of energy between industry, buildings, and residences can reduce greenhouse gases, local air pollutants, and energy use all at once. If you do it right, it will also improve urban livability.

● (1605)

As I said, the issue is multi-jurisdictional. Municipalities have a big role to play here, but they're governed by the provincial acts that govern the rules. And then the federal government has a role to play here, in terms of how it leverages infrastructure funds.

Finally, as the other experts were saying at the table, we lack complete tools for assessing integrated approaches. But phase two is a movement in that direction.

I guess my concluding remarks are that we have some of the best resources in the world here in Canada, in terms of urban planning, energy management, waste water management, and what have you. We basically have all the tools to guide the coming infrastructure rebuild in a sound direction for the long term—for the next 50 to 100 years, not just to get out of the recessionary hole we happen to find ourselves in right now.

That's it. Thank you.

The Chair: Thank you very much.

Thank you to all of you for your presentations.

We'll go now to questions, starting with Mr. Regan, for up to seven minutes.

Hon. Geoff Regan (Halifax West, Lib.): Thank you very much, Mr. Chairman.

Let me begin by thanking all the witnesses for coming here to share your wisdom with us today. I'm sure we all appreciate it. It's good to have a chance to have a discussion with you.

In the government's budget, it announced $1 billion to establish a clean energy fund. The Deputy Minister of Natural Resources was here, I guess about a month and a half ago, and she seemed to indicate that something in the range of three-quarters, or more, of that money would be targeted toward setting carbon capture and sequestration. Then whatever was left would be for other things.

What's your view of this determination or distribution of resources?

The Chair: Whom is that question for, Mr. Regan?

Hon. Geoff Regan: I'd like each group to respond.

The Chair: Okay.

Mr. Lee-Gosselin, are you ready?

Dr. Martin Lee-Gosselin: I don't consider that I'm qualified to give a detailed answer to that question. In the competition for resources, I would certainly hope that a substantial percentage of those resources would be applied to the urban setting, rather than to CCS. That would be my preference.

The Chair: Thank you, Professor.

Professor Kubursi.

Dr. Atif Kubursi: Thank you.

The issue here is what are the alternatives? How does one judge alternative A versus alternative B? Resources are limited, and if you use them in one employment, then you have to look at what you lose if you were to use them someplace else. This is crucial, particularly at this moment. There are overriding concerns that we shouldn't recreate the past. This is a time in which the crisis is providing us an opportunity to re-evaluate and to be quite specific about what our objectives are. What sort of future are we trying to create? The concern here is about the extent to which we can avoid replicating the past and give a chance to a sustainable economy to emerge, and to see to what extent we can exploit the conversions of the environment and the economy.

There are always aspects of this where people think the economy and the environment are at odds. Actually, the trade-offs are really limited, and it's really a question of “both or neither”. The issue is to see what you are ultimately getting at the margin, in terms of employment—when unemployment is rising very quickly—and what you are getting for this employment, in terms of the environment, climate change, and the clean living we would all like to see.

● (1610)

The Chair: Mr. Bataille, go ahead.

Dr. Christopher Bataille: Just to begin, the depth of our targets is such that we need to do absolutely everything. We're going to need CCS. We're going to have to decarbonize our energy supply system. But we also need to address the consumption side of the economy.

Now, if you have $1 billion, you obviously have to parcel it one way or the other. But I would set dual priorities. Yes, you do need to apply it to CCS.

In some ways, this stuff is something we know how to do. So it's more of a policy question when it comes to cleaning up our urban centres. It's a matter of taking the policy initiative to do it, whereas CCS is still on the cusp of being a viable technology; all the bits are there, but it's going to need some proving.

But there are efforts around the world to do that. We are one of many doing it. In some ways, we should almost be in partnership with other projects to do that, and share our efforts, for example, with the Norwegians, the Americans, and everyone else.

Hon. Geoff Regan: I wonder, then, if you would all agree that in fact there's enough funding already targeted at developing integrated energy systems. We haven't heard that elsewhere. Is that what I'm hearing, or not? Is there enough funding already targeted by the federal government toward developing integrated energy systems?

Dr. Christopher Bataille: I don't know if it's so much funding as it's a matter of policy effort. CCS has definitely risen to the top of the agenda, and we're putting steps in motion to get there, but I haven't really seen concrete steps to get to integrated urban energy systems.

Mr. Robert Joshi (Consultant, M.K. Jaccard and Associates Inc.): I'd like to add, if I may, that we would like to see more attention given to this. As Chris pointed out earlier, urban energy use in general is about 60% of our emissions. It's a large chunk. To get at that, and not in an individual sense of how efficient a building is or how efficient a furnace is, but in this integrated aspect, the amount of effort and attention we give to it should be commensurate with the size of the solution it offers.

Hon. Geoff Regan: So the potential gain here, in terms of lowering emissions and becoming more energy efficient, is enormous.

Mr. Robert Joshi: And there are the broader socio-economic opportunities that were discussed, but just looking at air quality emissions and energy, the gains are enormous.

Hon. Geoff Regan: Ontario recently introduced a green energy act, as you may be aware, and it's intended to promote wind, solar, and biomass electrical generation. We also see the Obama administration investing heavily in renewables. What's your analysis or your assessment of the federal performance in this area, this government's performance? It seems to be investing far less.

Dr. Atif Kubursi: There's no question that we need to get all alternative non-conventional energy sources examined and analyzed and the consequences evaluated.

Governments seek multiple objectives. We really need to see every particular program in terms of the criteria we put in. For example, if you want to reduce emissions but increase employment at the same time, then I would like to really see what a particular program and a particular expenditure would do in terms of employment and in terms of reduction. It's only within this general picture that you could lay out where the commonality is and where the trade-offs are so that you can come to a complete assessment of what's going on.

But if you take each one on its own and say, all right, we want to have unconventional energy, this could really bring about major, massive unemployment or a reduction in employment possibilities. It could raise the cost of energy to industry, which might compromise further manufacturing. We really need to see how these multiple criteria would fare in terms of any particular expenditures. We would really like to see all these expenditures lined up against these criteria, whether that's jobs, a clean environment, emissions, or integrated energy reduction in urban cores.

These are issues that you cannot deal with separately or independently in a truncated way. You really need to bunch them up and see to what extent they satisfy these multiple criteria and where are the trade-offs.

● (1615)

The Chair: Thank you, Mr. Regan.

We'll go now to the Bloc Québécois, with Madame Brunelle, for up to seven minutes.

[*Translation*]

Ms. Paule Brunelle (Trois-Rivières, BQ): Good afternoon to you, gentlemen, and thank you for being here.

I have a question that could be of interest to several of you.

Mr. Lee-Gosselin, you mention the federal government's role and say that it should create the conditions that allow structural innovations to emerge.

I would like to share with you something I read about the Hydrogen Research Institute, a prestigious research centre in the riding of Trois-Rivières. The head researcher was voicing his concerns. He said that the significant decline in the price of gas and the economic crisis would lead to reduced investment in research. Hydrogen development was at a critical point. The researcher's analogy was that Europe would continue to have a strategic advantage over us because they do research there and they would do for hydrogen what they did for wind power. As a result, they will have the technology that we will have to buy.

You see what I am getting at. Do we need a major course correction in order to turn things around? Yes, we do. It took considerable effort to attract a university, let alone a hydrogen research institute, to the small city of Trois-Rivières, with its 130,000 citizens. However, things cannot grind to a halt just as the efforts are beginning to bear fruit.

Dr. Martin Lee-Gosselin: It is highly unlikely that the price of oil will remain at around $40 to $50 a barrel for very long. The federal government must make a smooth transition towards our future options. I have no problem supporting the continuation of a project like that, which is of great importance to a city like Trois-Rivières. I am well aware of it, although I do not know the details.

Ms. Paule Brunelle: There is a hydrogen research centre in Vancouver. I have visited it; perhaps you know it too. You mentioned urban transit, among other things. In Vancouver, some buses run on hydrogen fuel cells. I see that as a promising breakthrough.

Mr. Bataille, you said that GHGs were an urban problem, that we needed smart modes of transport and that urban sprawl was a political choice. I quite agree with you. But we cannot deny resistance to change. Urban sprawl is a way of life. Since the 1960s, people have been sold on the small bungalow in the suburbs, with a pool and a happy family. Schools were built all over. How can we reverse that trend?

In Montreal, a lot has been done to get people to live in the city, but people are reluctant to move there. What do we do? You can call the choices political if you like, but we are politicians; so what do we do?

[*English*]

Dr. Christopher Bataille: That's a planning question and a policy question. It is generally recognized among urban planners that in a lot of ways we've been going the wrong way in the last 30 to 40 years, in terms of really expensive infrastructure that can't support itself because there's simply not enough tax base per unit of land.

There's going to have to be some form of retrenchment one way or the other. It is very much a matter of smart development. You can create a dense ghetto, or you can create a very dense high-end neighbourhood, or you can find something in between. But the potential is there.

I agree with you. Again, every possible measure has to be pursued to bring our emissions down to our target levels, because most of our trading partners will be looking for something in the order of 80% reductions within a couple of decades.

So we have to pursue every means we can.

● (1620)

Dr. Atif Kubursi: Madame Brunelle, I think you have it right here, but there are two dynamics and they seem to be in conflict here. One dynamic is that the most important natural resource is people's brains. It's our knowledge, our creativity, our innovation. And there is no question about it, that as things become tighter, as the price of energy rises, the incentives are to see to what extent these brains can bring about the change.

But the other dynamic, which is also quite dangerous, is the fact that we cannot rely always on technological solutions or be quite optimistic about technology being able to generate the kind of change, in appropriate quantities and in appropriate time.

So it is really the two dynamics. To what extent can we as a government create the atmosphere, the incentive regime, the capacities, the enablement of the universities and our brains and our private sector to come to terms with the requirements, but at the same time to also remain realistic and within these hard budget constraints that would allow us to do these things appropriately and patiently?

Dr. Christopher Bataille: Another thing, too, is that you mentioned that since the 1950s and 1960s our cities have been growing. It is going to take us that long, if not longer, to come back down.

So what we need is steady, consistent, fair policy that does not overly penalize any one group. If someone has made an investment that's outside where we want to go, we don't penalize that person. It is just that all marginal investments, all the next investments, are made in smart fashion.

The Chair: You have about 30 seconds.

[*Translation*]

Ms. Paule Brunelle: These are all very complex problems. We do not have a long term strategic plan. We will be investing massively in infrastructure in order to boost the economy, but will we be investing in infrastructure to save money or to develop energy capacity through integrated appraoches? I find this somewhat concerning. We seem to be rushing off in all directions without really knowing where we are going.

[*English*]

The Chair: Professor Lee-Gosselin.

[*Translation*]

Dr. Martin Lee-Gosselin: Approximately half of the man-made environment that will exist 30 years from now has yet to be built. That means there are opportunities to seize. Our research has found that savings can be generated even by those living in a suburban bungalow. For example, in Quebec City, bicycle use is widespread.

Ms. Paule Brunelle: Despite all the hills in Quebec City.

[*English*]

The Chair: *Merci.*

Mr. Cullen, go ahead. You have up to seven minutes.

Mr. Nathan Cullen (Skeena—Bulkley Valley, NDP): Thank you, Chair, and thank you to the witnesses.

To Mr. Bataille, this has been alluded to in all presentations, but I wanted to get your direct answer on this. With all the plans and the putting in place, you talked about pricing things effectively or including the costs, the current externalized costs, into what we do.

How critical is carbon pricing to some of the adjustments you're talking about in terms of the way our cities are designed and laid out and set up?

Dr. Christopher Bataille: Absolutely central.

Mr. Nathan Cullen: Then if the price of carbon is central, and the pricing mechanism we choose is important, should there be any analysis when government is setting out its spending priorities?

I noted that in the five things you talked to us about, most of them exist outside of federal powers. This committee will be charged with the task of making recommendations to government, directing the government in a certain way or another. On the spending side, that is one mechanism, and also on the price regime that we set up for a tonne of carbon.

Should an analysis or a filter be laid over top of what the government does in terms of spending, in an attempt to achieve greatest efficiency in spending costs per tonne of carbon reduced?

I want to give you an example. I sat on a committee last year, or about 16 to 18 months ago, in which the government was rolling out a significant package on biofuels. It was directed mostly toward corn ethanol. We attempted to move an amendment that said we should use biofuels that are of the greatest impact in terms of GHG reductions per thousand dollars. That amendment was rejected, and you know, I was confused by that.

How critical is it, for what we do into the future, to have that overlay assessment of what the cost per tonne is, of what the efforts of the government are in this?

● (1625)

Dr. Christopher Bataille: It's interesting; you say you need a filter and an assessment of action by action. But the most effective filter is an effective carbon price and the private market operating within the bounds of the carbon price. They will allocate funds and investment in the direction in which they see some long-term profit.

Mr. Nathan Cullen: So you're imagining a 100% auctioned carbon market?

Dr. Christopher Bataille: No, no. The first and most important thing is full coverage. There's been a lot of discussion of covering our large final emitters, but there's been very little discussion of actually covering our entire economy, which includes our urban consumption in our urban systems.

So you first need full coverage. That's missing here in a lot of the discussion that's occurred.

Now, as to how you get there, you can get there through an upstream cap and trade system, high up in the system. You can have downstream cap and trade mixed with things. You can put a direct charge on carbons. There are many ways. But the first thing is that full charge, full coverage in the system. That will do most of your filtration for you.

The Chair: Mr. Joshi.

Mr. Robert Joshi: I'd like to add to that.

As Chris pointed out, the urban space, though, is a policy choice. The modelling is going to get more detailed. A key point is that you can go so far with a carbon price—cars get very efficient, buildings get very efficient—but this integrated aspect is directly involved in municipal, provincial, and federal policy. The market can't operate fully in it; government has to make choices.

Mr. Nathan Cullen: Maybe I'll turn to you on this, Dr. Kubursi. You were talking about the way the economic models work and trying to get the full costs, whether that's understanding the actual impact of government spending or the multiplier effect, which gets thrown around, it seems to me, loosely, and in quite a biased fashion.

Right now the government has an accelerated capital allowance for the tar sands. They say that we can write off, in a more accelerated fashion, for that project. How would your model apply to something like that industrial development if we were to try to include the full costs of what it is to have that type of energy produced in that manner?

Dr. Atif Kubursi: This is quite fair. First, the full-cost pricing is quite important. There is market failure when the polluters impose costs on third parties for which they are not responsible. You would get more efficiency if you were to include all the third-party influences where the market fails by building it into a taxation subsidy that would cover the full-cost pricing. You will get more efficient transformations. There is no question about this. There is considerable evidence to suggest this would be appropriate.

What is worrying me is that when the government is seeking multiple objectives, we look at one instrument or one criterion and assume that all other implications are incidental. This is within the context of the things I presented before. Yes, we have to rank things in terms of the carbon emission or carbon reduction, but we also have to look at employment, the socio-economic aspects, and integration of the economy. Several other objectives need to be considered. These should be ranked from top to bottom in terms of every criteria for whatever action you're taking.

In my case, for example, we're talking about the implications of a particular investment. I'm talking about jobs, value-added, wages and salaries, the types of jobs, regional allocation, and the special allocation of these impacts. Some activities might be urban concentrated or would improve the south but completely devour the north.

Mr. Nathan Cullen: We've seen the federal government come out with a stimulus package and use urgency, in the moment, and talk a lot in the form of roads and bridges, that this is what we need first and foremost. However, I don't get any sense of the actual incurred cost of these things beyond just the physical making of the bridge or the physical making of the road.

You talked about urban sprawl, these unmitigated costs we've gone through, through years of planning. We told them to grow as much as they wanted; we made land cheaper and subsidized that sprawl.

When we're doing a major fiscal stimulus package, there's a certain amount of money out the door and an estimate from government as to how many jobs that creates, but in these other costs you spoke about today, I've heard absolutely nothing from the finance minister or others saying, here is the encumbered cost of what it is to spend $3 billion on making a bunch of bridges in Canada, or spending it on road construction through these parts.

As a final comment, I'll ask this. One of the presenters said we should fund plans, not projects, as a way to think about this; that some communities in Canada are thinking about the things you presented today. They have energy plans. They're trying to integrate their energy plans, but there's very little funding associated with it. The government will show up and say if they want to build a bridge, let's build a bridge. Outside of a plan, we want to cut a ribbon; we want something for the evening news.

How do we get around that? How does the government put a filter up high enough that all the funding has to filter through that assessment first?

● (1630)

Dr. Atif Kubursi: You've suggested it. What you're talking about here is that there shouldn't be one single framework but there should be a multiple accounting, so you take into account all the implications. For example, a bridge or a road that you say you really need might improve or speed up urban sprawl and the movement into the suburbs, but in fact your objective may be, in terms of energy efficiency, densification.

These issues have to be taken from more than one perspective. They should go through more than one filter. Ultimately, it is up to you, who in a democracy are the people who represent the choice of the people, to put some prioritization. On the basis of this, you could look at all these filters, rank them all, and then give them the weight as to which one supersedes or dominates.

Ultimately you're entitled to make the decision on behalf of the people and you bear the consequences. This is your responsibility, where to put the weight. The economists, the urban planners, the transportation people could give you the consequences of alternatives, but which one should dominate and which one should be considered to be more important.... What we're really arguing here is, don't take one social framework, one accounting framework; take a number of them. But it's the responsibility of the decision-maker to ultimately put some weight on where these things stack.

The Chair: Thank you, Professor. Thank you, Mr. Cullen.

Now to the government side. Mr. Hiebert, and maybe Mr. Anderson if there is time.

Mr. Russ Hiebert (South Surrey—White Rock—Cloverdale, CPC): Thank you, Mr. Chair, and thank you all for being here.

I'll start my questions with Dr. Bataille. Going through your report, I have a couple of questions that have come up that I don't fully understand. Perhaps you can help me understand what you're trying to say.

My first question has to do with the price of carbon. When you talk about raising carbon to $200 a tonne, are you talking about a cap and trade system or a carbon tax?

Dr. Christopher Bataille: It can be done either way. That's a policy choice.

Mr. Russ Hiebert: So you're saying they're equivalent?

Dr. Christopher Bataille: There are wrinkles to it, but functionally on a graph scale they're equivalent. It depends on what happens with the permits with the cap and trade system, if you fully auction versus grandfathering versus allocation and what have you. But in terms of sending the price signal out into the economy, they're mostly functionally equivalent.

Mr. Russ Hiebert: Have you done any research into the impact that having a $200-per-tonne carbon tax would have on the average family?

Dr. Christopher Bataille: It depends on how you recycle the revenue.

Mr. Russ Hiebert: What financial cost would it be to the average family that spends $1,500 a year on gas? That's not including what they spend on heating and electricity.

Dr. Christopher Bataille: My understanding was—and I'd have to sit here for five minutes to calculate it exactly—that the U.K. compared to Canada, in terms of the average person's petrol prices, was something on the order of a $170 tonne carbon tax already. The difference they pay at the pump versus what we pay at the pump is already $170 a tonne. But again, that's subject to check.

Mr. Russ Hiebert: When they're paying the equivalent of about $4.50 a litre and we're paying $1 a litre, you're saying that's kind of the impact of a $170-per-tonne carbon tax?

● (1635)

Dr. Christopher Bataille: Roughly speaking, but again that's subject to check.

Mr. Russ Hiebert: Okay.

I appreciated your comments about not wanting to work in silos. I was wondering what research you have done in cooperation with the social sciences about the impact of densifying populations to the degree you're suggesting. What came to mind was, at what point does density cause more problems than it solves? And of course I'm thinking of places like row housing in Scotland where the life expectancy is 63 years of age. We can all think of urban examples that we don't want to replicate.

What evidence from social sciences do you have that suggests that putting people in that kind of compact space will be good for community? In particular, you commented that we choose between sprawl or dense, walkable, and safe cities. I think I envisioned that such dense population is not necessarily safe.

Dr. Christopher Bataille: I'm not a social.... I'm an economist. I'm an energy economist by trade. That's what I'm trained to do. But I just look at the examples. Depending on how you build your city, you can have New York, you can have Geneva, or you can have São Paulo. It depends on how you govern your city and how you govern your society.

Mr. Russ Hiebert: So perhaps bringing in some of these other social scientists outside of their silos into the discussion would be worthwhile.

How much time do we have left, Mr. Chair?

The Chair: You have three and a half minutes.

Mr. Russ Hiebert: Okay.

I have just one brief question to Mr. Lee-Gosselin.

The sixth point you made in your presentation was, “We should be in the incubation business.” Who's the “we”?

Dr. Martin Lee-Gosselin: I think I would be so brave as to say that there would be some common interest between the federal government, to whom we are speaking today, and the other interested parties, including the NGOs and the other levels of government. I think it's a very, very broad “we”. I just think the society would be well-served if we could learn much more about how to do this integrated energy, to grow different integrated energy futures.

Mr. Russ Hiebert: Okay. I'll pass the balance of my time to my colleagues.

The Chair: Mr. Anderson, you have about three minutes.

Mr. David Anderson (Cypress Hills—Grasslands, CPC): Thank you, gentlemen, for being here. I don't think I have time to cover all that I want to.

I've had an interest, actually, in rural communities, and a lot of my riding is small communities of 300 to 1,000 people, 10 miles apart from each other. I'm just wondering if what you're suggesting has any relevance for those small communities. Maybe you could talk about that after.

First, I want to come back to the question of some of the costs here. Mr. Bataille talked about the importance of full coverage of carbon pricing. I just want to talk about the implications on housing, if there are any, because many people in cities live on the edge with regard to affordable housing—young families that are working, and that kind of thing. What we've heard here—more than one group has come in and told us—is that these projects have a $150,000 premium per unit in order to build them, so the communities that have been built have that kind of a premium on the units.

In order to make these work, it seems to me, you have to raise the cost of the normal housing we have now to the level where these projects are economical or else try to bring their price down. That $100 to $200 a tonne actually drives up the cost of living and the cost of housing for everyone in order to make these projects more economical, right? I'm wondering if you have done any work on the social impact for those hundreds of thousands of people who are living on the edge of that envelope who may be driven right out of the housing market by the cost of the entire project.

The Chair: Mr. Bataille, go ahead.

Dr. Christopher Bataille: There are two elements there too. In some of the modelling we've done, when we talk about $200 a tonne, you often see sometimes complete electrification or drastically reduced emissions. You may not be paying a carbon tax at all, simply because your building is not powered with something that directly burns fossil fuels. So that's one element.

With the modelling we have done—that's simulations, as who knows how the future could go—in these integrated communities you could have virtually no fossil fuel emissions and therefore you are paying no carbon price.

Mr. David Anderson: We've been told that the premium on the units is about $150,000. That has to be made up somewhere in the market. Either you don't have a market, people aren't interested in buying, or you have to drive some other prices up or these down to make it so that people are interested.

● (1640)

Dr. Christopher Bataille: Again, a lot of these are leading-edge communities. These are prototypes. I agree, the first time you build something it's fairly common that you get those kinds of cost increases.

Just consider this. What if the new standard for building were this new way of doing things? It became a standard, you had efficiencies of scale, and all builders and contractors built according to those standards. The cost per unit would come down a lot. But I do agree. Those kinds of numbers do make sense in the initial runs.

Mr. Robert Joshi: I'd like to add that most of my reading suggests a 3% to 5% or 2% to 5% cost per unit. There may be some specific communities that are very advanced—solar photovoltaics all over the place. That could get expensive, but the majority of the gains from building efficiency and connecting a community entry can be done for much less, based on my reading.

Mr. David Anderson: If you're talking about a 40% reduction in GHGs, it has to be more than 2% or 3%. From what I understand, you can make changes of 2% or 3% in savings, but to make the kinds of savings in GHGs you're talking about, it has to be a massive change in the way people live and in the housing units they live in. That's not achievable, is it?

Mr. Robert Joshi: Not necessarily, but part of the work is to explore that better. Our policy tools, in my opinion, aren't quite there yet and we need to improve them.

Mr. David Anderson: Have you any comment on the rural communities?

Mr. Robert Joshi: Chris mentioned energy cascading. The integrated energy isn't about the same kind of integrated energy in every community, so the rural example would be cascading with local agriculture. There is energy opportunity in local agriculture. Whereas in a city with a light industry you might get heat from a factory, with agriculture you could use animal waste or other products to generate energy and create fuels. In a large city you would have nodes with a large-capacity public transit. That wouldn't be a part of the solution in a small community, so there are aspects of it that apply.

The Chair: Thank you, Mr. Joshi. Thank you, Mr. Anderson and Mr. Hiebert.

I go to the official opposition for five minutes, to Mr. Val...?

Mr. Francis Valeriote (Guelph, Lib.): Valeriote. As in chariot.

The Chair: Chariot, Valeriote. Okay, I've got it. Thank you.

Go ahead, for up to five minutes.

Mr. Francis Valeriote: I come from the community of Guelph. We've adopted what we call the "community energy plan", and we're very proud of it. Some of you are nodding, to suggest that you might be aware of it. We're tapping into methane from former dump sites. We're planning on harnessing heat that's otherwise lost into the atmosphere at the Owens Corning plant and pumping it to other industry or housing. Better transportation programs...all of those things that I know you know are necessary to reduce our greenhouse gas emissions. We're taking our lead from communities in Europe, Scandinavian countries.

From my understanding of the issue, and indeed, following Places to Grow, the Ontario program, in fact intensification—to allay Mr. Hiebert's concerns—leads to less crime, increased efficiencies, more jobs, fewer greenhouse gases. That's my impression.

First of all, is my impression, or that premise, correct? And how do you assess the energy performance of Canadian communities in comparison to those of Europe? Is it something we should be afraid of? Should we be afraid to pursue those models?

I'd like to ask all three of you, starting, perhaps, with Mr. Bataille.

Dr. Christopher Bataille: I think you want an urban planning expert here, to be honest, to answer that.

I'm an energy economist. I can see the benefits when you run your models—what happens to personal kilometres travelled in transportation, what happens to energy burn in buildings. But running good cities, you want good urban planning experts, and there are people who know how to do this. There's been a revolution in this in terms of having multi-use, lots of people, eyes on the street, that kind of thing. But I'm speaking totally from a layperson's perspective.

The Chair: Mr. Lee-Gosselin.

Dr. Martin Lee-Gosselin: Incidentally, Mr. Hiebert, I live in a rural community with a population of 1,100 people, and I would like to emphasize what Mr. Joshi has said about the possibility of doing some very intelligent energy efficient things even if you're in a small community. It doesn't mean that you will have, perhaps, as many systems working in tandem, and you won't have a lot of buses, but by golly, my extended family—and maybe it's a good thing I married into a big Quebec family: the carpooling logistics are incredible.

But to come back to your question, sir, I think it's a little bit false to make a direct comparison between Canadian communities and European communities that have centuries of fairly organic development under very different sorts of constraints.

As I said earlier, I think we have a great deal that we can do to be more efficient than what we have already, as well as trying to place new construction in the right place.

All I would want to say is that the sort of leadership that Guelph has provided is not just about one set of cookie-cutter solutions that's going to work in all communities. It's about a process of getting on with the job, of finding out how we set our priorities, depending on the scale and the size of the community we have.

The experts have their role to play, too.

● (1645)

The Chair: Professor Kubursi.

Dr. Atif Kubursi: One of the major problems of small communities, rural communities—Guelph probably is not too small—is that they import a large proportion of the requirements, and this represents a leakage. It represents a loss to the community.

If you get an integrated energy system, the savings you make on importing from outside the fossil fuels, or whatever energy, creates quite a bit of an advantage and would retain income within the local economy, and this by itself is a very positive thing.

The other thing is that the availability of this energy—and probably at a scale where it probably may be lower priced than what you have to import—itself becomes an inducement, an incentive, for other activities to capitalize on these savings. In that respect, what we're talking about here is a net advantage to even small communities, rural communities.

You mentioned one thing that is something I've done some research on, where violence—at least, nine Criminal Code violences—seems to be highly correlated with unemployment. So if you create jobs, you create opportunities, and these tend to ultimately reduce these occurrences. In that respect, it may be a balance from the increased intensification of urban living against the fact that you're creating savings and generating surpluses and opportunities, which tend to depress it. Those are the facts that would really count, and I would venture a guess here to say probably around the positive side.

The Chair: Thank you very much, and thank you, Mr. Valeriote.

Thank you very much, gentlemen, for your presentations and for answering the questions. I think the information we've received here today will be very helpful to us in our study.

We are now going to suspend for a minute or so to go in camera. Then we will come back to discuss committee business for about 25 minutes.

[*Proceedings continue in camera*]

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