House of Commons
CANADA

Standing Committee on Natural Resources

RNNR • NUMBER 013 • 2nd SESSION • 40th PARLIAMENT

EVIDENCE

Thursday, April 2, 2009

Chair

Mr. Leon Benoit

Standing Committee on Natural Resources

Thursday, April 2, 2009

● (1530)

[*English*]

The Vice-Chair (Mr. Alan Tonks (York South—Weston, Lib.)): Good afternoon, everyone. We welcome members of the committee and we welcome our guests. We appreciate your being here.

It's a lovely day, and we've had some excellent presentations on integrated energy systems. We're fascinated with the topic and the opportunity to look at downstream energy applications in a broader way and in a strategic way, so we appreciate your coming to us from your various disciplines, backgrounds, and experiences. We are looking forward to hearing your deputations.

I think we'll go in this order. We have Elizabeth McDonald from the Canadian Solar Industries Association; welcome, Elizabeth. From the Centre for Agricultural Renewable Energy and Sustainability, CARES, we have Art Schaafsma; welcome, Art. From Net-Zero Energy Home Coalition, we have Gordon Shields; welcome, Gordon. From Pollution Probe, we welcome Bob Oliver. Welcome to all of you.

As an explanation to the committee and to you, I'm not the chairman; I'm the vice-chair. Mr. Benoit was not able to make it, but he does send along his best regards. He's sorry that circumstances are such that he can't be at this meeting.

We'll begin with the Canadian Solar Industries Association. Elizabeth, would you like to make your presentation? If you could stay within five to ten minutes, it would be just wonderful.

Thank you.

Ms. Elizabeth McDonald (Executive Director, Canadian Solar Industries Association): Thank you.

Good afternoon. My name is Elizabeth McDonald and I'm the executive director of the Canadian Solar Industries Association, or CanSIA, as we call ourselves. I'm accompanied today by Wes Johnston, CanSIA's director of policy and research. This is my first opportunity to appear before this committee, so I really appreciate the invitation.

For many of you, CanSIA and I are the new kids on the block. Solar energy is not a new concept; however, the technology has evolved considerably since the solar mini-boom of the mid-1980s. We've also evolved a lot since then as an industry. So you don't have to ask me this question: Canada does have excellent solar resources, better than Germany, the global poster child for an integrated renewable energy strategy. Too often Canadians get confused between coaled and solar resources, so I thought I should make that statement right at the beginning.

Before I go any further, I would like to acknowledge some of the leadership that already exists in this area from the Net-Zero Energy Home Coalition, CMHC, and dedicated and helpful public servants who work tirelessly, particularly in the Department of Natural Resources. While we are not yet members of QUEST, their goals and efforts are laudable. We are a small association with limited resources, so we're just beginning our dialogue with QUEST.

I'd like to thank you for inviting us to appear and for taking on such a forward-thinking concept. The one thing I've learned since joining this industry is that the success and reliability of a forward-looking energy policy for communities across the country will have to have an integration of different energy types or a mixed energy supply agenda embedded in it.

As I was considering this appearance before you, I thought about how I could be helpful. Last year I chaired a solar task force for the Ontario government, and it underlined for me the complexity of the challenges facing governments in this area. How can we make it simple and understandable? How can we be realistic? It struck me that we had a very successful laboratory experiment only 29 kilometres outside of Calgary in the community of Okotoks. As Prime Minister Stephen Harper himself noted, Okotoks is “the greenest community in Canada”.

I am sure all of you are aware of Okotoks. Indeed, you probably know more about it than I do. But for the record, the town of Okotoks became one of the first municipalities in the world to establish growth targets linked to the infrastructure development and environmental caring capacity when it adopted its legacy plan for municipal development in 1998. At that time, the town faced an intersection of its evolution. Dependent on the Sheep River for its water and its ability to treat and dispose of effluent, Okotoks had to choose to either continually grow without limits, in line with regional development and access to regional infrastructure, or take the road less travelled and intentionally choose to live within the caring capacity of its local environment. A community-driven vision was created that chose to respond rather than manipulate the environment in order to sustain its standard of life. It has been a great success.

How does Okotoks work? It established four pillars for a sustainable Okotoks: environmental, social, economic, and fiscal sustainability. It went on to recognize a basic truth:

> Sustainability is not a magic cure that can be taken once. It is not a single tool or design feature. It is not a short term vision. Rather, it is a long range philosophy towards design, construction and utilization and maintenance of the built environment that attempts to rectify some of the more serious transgressions of contemporary development practice and living.

My point here is that we do have a successful project from which we can learn.

What next steps are needed? From our perspective, this is where we need to go next.

● (1535)

We need a national road map that will include a strategy on how to create sustainable communities in Canada. We cannot expect government to do this on its own.

We need industry, government, and NGOs like the Net-Zero Energy Home Coalition to work together. And this needs to include all levels of government, not just the federal government.

Any such road map will need to embrace certain core principles or objectives, and the Okotoks pillars are certainly an excellent starting place. It will need to recognize the diversity of the country in terms of climate, energy sources, culture, and economic realities.

Representatives of aboriginal communities must be at the table, as they face great challenges in this area, but they also recognize the opportunities in terms of jobs and other economic activity that adopting sustainable technologies can bring to them.

CanSIA recognizes that the Government of Canada has taken steps to invest in new technology, with solar being part of that initiative. However, it's important to realize that technology on its own is not the only answer. We need to take it another step further and learn how to implement new energy technologies that encompass sustainable principles.

Most importantly, as a country, we need to find the best approaches to link clean energy technology to communities and the built environment. This should be one of the broader objectives of this new road map. Also, we need to address industry capacity. We can develop a road map with objectives, but if we do not have a trained workforce, then we will fail miserably.

We also need to address community awareness. This was driven home to me this week when I was interviewed by the *Ottawa Citizen* about a family that had decided to put solar panels on their home to generate electricity. They worked with a “handyman who is good with electricity”. But Ottawa Hydro was reluctant to hook them up. Why? Because the minimum standard is to have an electrician do the hookup, and often these electricians work with trained solar industry installers. This, in the end, is about safety.

Adopting new forms of energy like solar and PV, or photovoltaics, is about generating electricity. One quote of mine, which regrettably the *Ottawa Citizen* did not run was—and I will quote myself—that, “We're not talking about installing a dimmer switch in a dining room: this is about generating electricity.”

In conclusion, from CanSIA's perspective, a truly integrated approach to sustainable communities in Canada requires the following.

First, it requires a road map that is based on sound and responsible objectives.

Second, it requires participation by private and public sectors—and by public, I mean federal, provincial, and municipal—and the NGO community. This does not mean that every province and every territory needs to be at the table, but the group needs to be representative, and it needs to consult. Having chaired a task force in the province of Ontario, we found that the consultations were very enlightening and very useful to the report we finally delivered.

Third, industry capacity must be addressed. We need to be prepared to inform our citizens so that as they adopt sustainability they do it in a responsible, safe, and successful manner.

Finally, we need to have definite timelines to establish the road map. An undertaking like this could go on forever.

Polls are telling us that Canadians are concerned about their environment and looking for ways to adopt more sustainable practices. They want this road map. They need this road map.

Beyond Okotoks, we also know from the European experience that the deployment of sustainable technologies or renewable energy does generate economic activity. It creates jobs—long-term jobs.

Renewable energies like solar, wind, and geothermal are local and they will create jobs in our communities—in your communities and in my community. These are the jobs that we want our young people—my sons—to have going forward.

Thank you for this opportunity to be here today. We'd be happy to respond to any of your questions.

● (1540)

The Vice-Chair (Mr. Alan Tonks): Thank you, Ms. McDonald.

I neglected to also welcome, on behalf of the committee, your colleagues who are here: Wes Johnston, director of policy and research at the Canadian Solar Industries Association; Ron Bonnett, from the Centre for Agricultural Renewable Energy and Sustainability, CARES, and first vice-president of the Canadian Federation of Agriculture; Abimbola Abiola, who is the chair of the Olds College School of Innovation; and Bruce Bibby, manager of energy conservation, Hydro Ottawa Limited.

Welcome to all of you on behalf of the committee.

Thank you, Ms. McDonald.

We'll now go to the Centre for Agricultural Renewable Energy and Sustainability, with Mr. Schaafsma.

Dr. Art Schaafsma (Director, Ridgetown Campus, University of Guelph, Centre for Agricultural Renewable Energy and Sustainability (CARES)): Thank you very much for the opportunity to speak to the committee today. This is also my first opportunity.

This is my colleague, Abimbola Abiola, from Olds College, in Alberta. We're representing four nodes of activity with agricultural campuses across Canada, looking at renewable energy and sustainability as they relate to linking agriculture and rural communities. Each of those campuses is indeed in a rural community.

From my own experience, I moved to Ridgetown, Ontario, 20 years ago, and our population has declined by around 3% to 5% annually. Most of our smart people—except me—moved away and have taken jobs elsewhere. This is something that's near and dear to my heart, in that we need to look at turning around that tide of declining rural economies and taking advantage of the opportunities that we see in the bioeconomy and also in the areas of renewable energy.

When you look at this type of endeavour, it has to do with many different facets, many different areas of emphasis and so on. It's not just agriculture. It's not just rural economies. It's not environment alone. It's not energy alone. It cuts across all of those sectors.

What many folks have noticed is that there is no single body or unit that brings those pieces together at the grassroots so that we can enjoy and put together all the benefits. That's what CARES came about as trying to be. It's about being applied, it's about being grassroots, it's about rolling out technologies and integrating them so that we can maximize our benefits to improve the rural economy.

With my partner here, Dr. Abimbola Abiola, we're trying to spearhead this across Canada. We have been working with Alma College, or Collège d'Alma, in Quebec, and also with the Nova Scotia Agricultural College. We hope to emerge, with the leadership of the Canadian Federation of Agriculture, as a lead organization to bring these various institutions together so that we can engage our youth, our agricultural communities, our rural communities, in trying to stimulate the best advantage of all of these important areas of environment: nutrient cycling, water cycling, and the creation of energy and utilization of energy.

Again, we are focused on the community aspect and the farm and rural areas. We are here to try to alleviate the risk that these agricultural producers take when they adopt these technologies: try it first, and then try to look at ways to integrate these technologies, and then allow them to take it over. It's about scale. It's about looking at the footprint. It's about how to integrate all of these things together.

So this community of enterprises, which will be something that we have across Canada, is about technology assessment, it's about commercialization. We also have the opportunity, then, to build education programs: to train our youth to learn how to manage and operate these technologies and support them. It's about looking at opportunities for applied research and consulting with the various clients we have.

We have the vision and goals to be the conduit for these types of technologies for the rural community and to try to accelerate access to these technologies and increase their adoption. We want to promote innovative and interdisciplinary research on renewable energy issues relevant to the agricultural community. Our goal is also to serve agriculture, primarily through the primary producers, through the application of research results, consultation, and the introduction of new program initiatives. We seek to be a leader in curriculum development in the area of renewable energy at the technical, undergraduate, and graduate levels and in a range of professional and continuing education initiatives. We also seek to be a source of current, comprehensive information on renewable energy for a range of audiences through publications, newsletters, visiting scholars, demonstrations, conferences, and workshops, as well as electronic media.

So what are some of the direct spinoff benefits of what we hope to do?

● (1545)

We hope to stimulate the rural economy, as new technologies will need to be built and serviced. We hope to increase the profitability of farms, making the industry more attractive for young farmers. We hope to provide high-skilled employment for youth in the rural regions. We also hope to provide a green bridge between agriculture and rural communities—closing that loop. We seek to launch a paradigm shift from highly centralized, fossil-fuel-dependent agriculture to closed-loop agriculture with reduced environment and energy impact.

We've sought to establish this centre. It had its first meeting with a national board of directors in January. We're meeting quarterly, as a board of directors, to get this particular organization off the ground. Our next meeting is in April, at the end of this month.

Again, our partners are Olds College, in the west; and we have the Great Lakes region, represented by the University of Guelph at the Ridgetown campus; Quebec, being represented by Collège d'Alma; and the maritime region being represented by the Nova Scotia Agricultural College.

I'd like to give my colleague, Dr. Abiola, a chance to explain how Olds is working on this as well.

Dr. Abimbola Abiola (Chair, Olds College School of Innovation, Centre for Agricultural Renewable Energy and Sustainability (CARES)): Thank you very much, to members of the committee and my colleagues who are here.

Elizabeth, thank you for at least highlighting some of the things that have happened across this country, within Ontario and in Alberta. I've been very involved with the situation in Okotoks also.

Olds College, as the node for the western CARES, is working with other centres in the west, including University College of the Fraser Valley; Lakeland College, in Alberta; SIAST, in Saskatchewan; and Assiniboine College and Red River College, in Manitoba.

At Olds College we've been working with industry, especially producers, in introducing biofuels to use in agricultural communities. Over the last three years, we've actually developed one of the first applied research biodiesel production facilities, and we are working with communities, counties, and school divisions to introduce the use of biodiesel in the community. We have had successful projects, and we've had our industry partners coming to the table.

Based on our experience, Canadians are ready. Under your leadership and the leadership of the government, Canadians are ready to adopt technologies that are going to save this country and provide an environment for our children.

I believe that despite our regional differences, our national goal, as a country, would be to create an environment and a legacy for our children so they will be able to live in health. We have an opportunity to make it the best that it can be.

I want to thank you for the opportunity. I am open to any questions.

● (1550)

The Vice-Chair (Mr. Alan Tonks): Thank you, Dr. Abiola.

We will now go to Gordon Shields, with the Net-Zero Energy Home Coalition.

Mr. Gordon Shields (Executive Director, Net-Zero Energy Home Coalition): Thank you, Mr. Chair.

Ladies and gentlemen, thank you very much for this opportunity to present before the committee.

It's a pleasure being here today on behalf of the Net-Zero Energy Home Coalition. My name is Gordon Shields and I'm the executive director of the coalition.

Joining me, as you pointed out, is Bruce Bibby, the manager of energy conservation at Hydro Ottawa. He has been a great supporter of the coalition. I would be remiss if I didn't note that Elizabeth McDonald, through the Canadian Solar Industries Association, continues to be an active member in the coalition as well, and with her leadership, it was one of the founding members of the coalition a while back. CanSIA was really in at the beginning with the coalition. There has been a lot of progress with our activities and our coalition, but CanSIA has been an excellent partner in that regard, and so has Hydro Ottawa.

The coalition was formed in 2004 and has been working with various levels of government in an effort to raise awareness of, and encourage support for, the development and deployment of net-zero-energy homes in Canada. We represent a cross-section of stakeholders who are primarily involved in the new residential construction sector. Our organization has become the leading voice on the advancement of net-zero-energy homes across the country. We've held multiple workshops and forums domestically and internationally. This process has culminated in a proposed blueprint framework strategy for deployment of net-zero-energy homes.

That was probably shared with you in advance. I did give that to the clerk.

When we initially began our efforts, the question was, "What is a net-zero-energy home, and why should we support this style of home instead of just promoting our existing efforts behind recognized energy efficiency labels such as R-2000, Novoclimat, or Energy Star, etc?"

The most important aspect of a net-zero-energy home is the ability to produce, at minimum, an annual output of renewable energy that is equal to the total amount of its annual energy consumed and purchased from utilities. On the green building continuum, it is a transformative step forward that is happening in many countries and is slowly gaining root here in Canada.

I should point out that there are some PowerPoint slides that you might try to follow. They don't totally correspond to my remarks, but they will help give you a glimpse of the context that I'm talking about.

Most importantly, ladies and gentlemen, a net-zero-energy home is grid-tied. This allows for the home, and ultimately the consumer, to integrate and become part of the energy mix solution, enabling both a culture of conservation and a transformation in the way homes are built and the way they interact with our energy systems across Canada today. Indeed, the net-zero-energy home represents the potential for a paradigm shift in the design of energy policy and its interrelationship with Canadian homeowners: it's not just homeowners as consumers of energy, but homeowners as producers of energy.

While this step forward is taking time to take root in Canada, progress has started, and now is the time for governments and the private sector to begin accelerating larger partnerships on initiatives that enable cost-effective programming, capacity-building, and development of market-driven solutions.

The builder market in Canada is quickly recognizing that energy efficient housing alone is no longer sufficient as a means of diversifying one's products. Builders are looking beyond EnerGuide 80, once thought to be costly and difficult to reach, and are looking at the integration of on-site renewable energy options as part of the overall housing design. Equally, consumers are acutely sensitive to energy and operating costs in the home and are looking at alternative means for lowering these expenses.

I think we can all agree that governments across the country are grappling with the challenge of implementing effective policies that lower greenhouse gases and increase cleaner sources of energy production in the country. For too long, however, governments have directed most of their policy and regulatory attention toward industry and its large final emitters. This is only half the problem. The other half is the built environment: our residential sector represents 16% of our greenhouse gases and 17% of secondary energy use in Canada. If we are truly to find a balanced and holistic approach to these challenges of environment energy, more attention must be directed to the net-zero-energy home concept.

Net-zero-energy homes can address several issues when considering integrative approaches to community generation, including dual role of power plant and effective demand-side management; reduced dependence on expensive and imported peak electricity; reduced need for transmission and distribution infrastructure; an integrated approach to deploying available renewable energy technologies into the marketplace; and integrating sustainable living and community development.

● (1555)

As mentioned earlier, we're beginning to make progress. In our dialogue with governments we were pleased to see the federal government support a demonstration of 15 net-zero-energy homes, led by Canada Mortgage and Housing Corporation and in partnership with Natural Resources Canada, Environment Canada, and Industry Canada.

Natural Resources Canada has been building international attention to its Super E net-zero-energy home label. Furthermore, Industry Canada is helping to facilitate a technology road map on sustainable housing aimed at addressing barriers and opportunities for improving the design and integration of net-zero-energy home principles and other issues such as waste, water conservation, affordability, and others.

Finally, through Canada's participation in the Asia-Pacific Partnership on Clean Development in Climate, we started working with the government on establishing Canada as an emerging leader in this area and leveraging the work of our coalition in an effort to build wider public and private participation toward innovation, technology exchange, and, most importantly, larger demonstrations.

Ladies and gentlemen, in this brief summary I've outlined some positive developments happening in Canada on deployment of net-zero-energy homes. However, the fact remains that a significant policy gap remains in the way we deliver programming for the residential sector. In particular, there is no program for new residential construction that helps transform our industry toward this next generation of housing. Such a program is important, as well as the need to support visible community-scale demonstrations that help address economies of scale and the learning curve associated with design integration at the builder and developer levels.

In conclusion, governments are doing good work on improving the energy efficiency of our current building stock; however, if we don't start turning more attention to new construction and developing a pathway to the principles of net-zero-energy housing, then we'll be continuously trying to correct the mistakes of the past.

The glass is not half empty, but surely there is more to do. I look forward to answering your questions today and hope this helps move us further in the coming weeks and months ahead.

Thank you.

The Vice-Chair (Mr. Alan Tonks): Thank you, Mr. Shields, and right on time.

All of you actually were within time, and we appreciate that, too.

Now a final deputation from Pollution Probe.

Mr. Oliver.

Mr. Bob Oliver (Executive Director, Pollution Probe): I'd like to express my sincere thanks to members of the committee for the opportunity to speak on the role of the federal government in promoting integrated urban energy systems, a new approach to planning. Integrated urban energy systems result from smart and thoughtful planning at the community level.

The logical alternative to integrated urban energy system planning is disintegration between energy suppliers and energy consumers in the community. This arises when energy supply is considered separate from the needs of the local community. The producers and suppliers of energy often view the community as a black box. Unaware of the factors that govern energy use and energy demand in the community, they are simply concerned with hooking it up to electricity, gas, and oil supplies sufficient to meet the peak demands of that community.

Likewise, community planners often give no consideration to how the design of their communities predetermines the patterns of energy use and energy demand of that community. Generally, there's a cookie-cutter approach taken to planning homes. It's done according to code. The utilities come in and hook it up to sufficient electricity to power the block.

This is simple, and what's wrong with simple? The problem with this old way of planning communities is that supply and demand are subject to different planning regimes, and because of this, significant inefficiencies are built into the system.

Power is generated, often in distant locations, and transmitted over vast distances. In this format, energy is lost. Electricity and energy along the transmission lines is lost as a result of electrical resistance in the lines. While some of the heat generated to produce electricity is captured and converted into electricity, much of it is vented to the atmosphere. So again, there is precious, expensive energy being wasted.

In this old method of planning communities, infrastructure locks in certain types of energy use patterns. Simply put, natural gas is for heat, oil is for transportation, and electricity is for lighting and power equipment, even if these are not always in optimal combinations. Why not electricity for transportation, for example? Why not use natural gas to produce heat and power in the home or in the building?

As a result of these decisions, reducing energy is achievable only via end-use efficiency improvements, like taking out an incandescent light bulb and replacing it with a compact fluorescent, or simply shutting down the services, a la earth hour. Communities based on this non-integrated approach to energy system planning suffer from an inability to respond creatively to energy crises and climate change. Local energy sources and opportunities for efficient management of energy are not fully exploited. Often they compete with the existing energy supply infrastructure. So you could site a community on a rich, geothermal resource, but with the old method, you wouldn't use that resource. You would just truck in enough electricity, oil, and natural gas to heat and power the community. These opportunities are not identified and exploited in the old method of doing things.

Energy use scales the population growth, so within a range, the amount of energy consumed per head is fixed. As you grow the population, your energy increases and the emissions associated with that grow. As a result, deep reductions in greenhouse gas emissions are more difficult to achieve and more costly, simply because fewer options exist.

The new approach, integrated urban energy system planning, empowers the community to take action to address these issues. New and existing communities can realize opportunities to dramatically lower energy consumption and associated GHG emissions. A community using the integrated urban energy system approach considers energy production, or supply, and energy consumption, or demand, in the planning stage.

● (1600)

Options for local energy supply and efficient distribution are considered, again, in the planning stage, and this fosters a whole-system approach to managing not only energy but also water, waste, and transportation. All of these things are possible through the integrated systems approach, again, as opposed to the disintegrated systems approach.

This movement towards integrated urban energy systems is gathering momentum. A collaborative network of industry representatives, environmental groups, governments, academia, and those in the consulting communities are working together to foster integrated community-based approaches that address energy end-use and reduce related emissions. We call ourselves QUEST, quality urban energy systems of tomorrow. We've mapped out six principles that I think are very consistent with my colleagues' deputations here. I'll run through them very quickly.

Number one, improve efficiency. Reduce the energy input required for the given level of service. So if you can achieve the end-use service, be it transportation of a good or a person or illumination through lighting or heating, what is the most efficient and effective means to achieving that service using the least amount of energy possible?

Optimize “exergy”, which is to say avoid using high-quality energy in low-quality applications. So rather than burning natural gas simply to produce heat, we burn natural gas and use the high-quality BTUs to generate electricity, and the waste heat is perfectly suitable for heating homes and buildings through district systems.

Manage heat. That's in a similar vein. Capture all feasible thermal energy and use it, rather than exhausting it.

Reduce waste. Use all available resources such as land-fill gas, gas pressure drops—which is a very interesting option that I'd like to return to during the Q and A if you're interested—and municipal, agricultural, industrial, and forestry wastes as well.

Use renewable resources, that is, tap into local biomass, geothermal, solar, and wind energy.

Finally, use grids strategically. Optimize the use of grid energy as a resource to optimize the overall system and ensure reliability.

While the federal government certainly has cause to see the approach to integrated urban energy systems planning succeed, you have set targets for deep reductions in GHG emissions by mid-century. The urban regions and communities in Canada account for 50% of all the energy consumed and GHG emissions produced, so finding ways to enable these communities to dramatically reduce energy use and achieve deep reductions in GHG emissions is fundamental.

Furthermore, integrated urban energy systems is a critical component of a cleaner, greener, more sustainable national energy framework, and the role of the federal government in promoting and facilitating integrated urban energy systems is best achieved through three points: policy leadership, investment incentives, and skills and knowledge development.

I'd be pleased to take your questions.

Thank you very much.

● (1605)

The Vice-Chair (Mr. Alan Tonks): Thank you, Mr. Oliver.

We'll now go to the committee for questions, and we'll begin with Mr. Regan for his seven minutes.

Hon. Geoff Regan (Halifax West, Lib.): Thank you very much, Mr. Chairman. Allow me to express my appreciation to all the witnesses, not only for being here today, but for the excellent presentations that were very interesting. I trust my colleagues will all agree that they were interesting and informative for us.

I don't know if I'll have enough time in my seven minutes for all the questions I have, but I'll start.

For starters, Ms. McDonald, it's nice to see you again. Most of my questions will relate to what the role of the federal government should be. So when you talk about the road map, who should lead in the development of that road map. What is the federal role, and how should it be developed?

Ms. Elizabeth McDonald: One of the challenges we face in Canada is the fact that we have policy in all the different provinces and municipalities. So it is, at best, schizophrenic. Where the adoption of sustainable communities and renewable energy has really been successful from both an environmental and an economic point of view is where there is national leadership.

The one that everyone points to, and I'd be remiss not to, is Germany. Basically, Germany faced several challenges. They faced what they thought were environmental challenges. They had energy security issues and serious economic problems, so they took leadership. While they still have states within Germany and each of the states has different policies, the leadership came federally, so it's more coherent.

I think one of the largest challenges we face is the coherency issue. If you're going to embrace targets and all those things, how do you do it in a coherent manner? Can we get everybody to come to the table—at minimum, I would use the term "check your egos at the door"—and come together?

I think it can be done. I saw it in a small way in Ontario, and I think there is enough energy. There's a lot of excellent research available now, too, so it doesn't mean we always have to reinvent the wheel. There are some good ideas within Canada suitable to our climate and our particular situation. But in addition to that, a lot of people are ahead of us. We're kind of behind. So there's a lot to learn from and there are a lot of best practices to pick up from. I see a great opportunity for the federal government to lead, and I think it would be very popular.

I can only say as an aside that I was in the broadcasting and film industry for a long time. When I gave up that job, I thought my two sons would be disappointed because they'd lose their tickets to the Toronto Film Festival, but they actually think what I'm doing now is much cooler. So this is where the young people in Canada want us to go.

Hon. Geoff Regan: I'll bet they do. I'm not surprised. Congratulations on that.

Let me turn to Mr. Schaafsma. You've indicated in your written presentation to us, which we got a few days ago, that you'd like committee members to support the establishment of CARES nodes in Quebec, in Alberta, and, as I particularly noted, of course, in Nova Scotia.

What can we do to assist in that? What should we be doing to promote that in places such as the Nova Scotia Agricultural College?

Dr. Art Schaafsma: As in everything, it needs a kickstart. The model we're trying to develop is some base capitalization and the development of highly qualified personnel. The model has it that it should run itself over time, because if the CARES model can't make this technology work and return revenue, how can we expect the producers to do the same?

We're trying to go to the trough early and deeply, in some fashion, and then hopefully we can have a sustainable model coming out of that in the long term.

● (1610)

Hon. Geoff Regan: Thank you very much.

Mr. Shields, you mentioned that there's no program for new residential construction that helps transform the industry toward the next generation of housing. What are the obstacles to that, and what should the Government of Canada be doing?

Mr. Gordon Shields: That has been a long-standing issue for many years. There is a concentration of effort on the retrofit side, which understandably has a lot of merit. What I take issue with is that we are constantly trying to bring our existing building stock up to a new level, whether it be an EnerGuide level of 80 or higher as we move forward.... However, rather than trying to always correct the mistakes of the past, we should be trying to change the way we make those mistakes and in fact improve on ways of trying to avoid those mistakes.

How can the government help? First of all, identify an existing program around a vision of net-zero energy. That is the ultimate in energy vision for how you're going to address the energy component in the home. That's a step forward in that regard.

Energy is and will remain one of the most important components of how this country is going to prosper in the future. Whether it's energy produced through conventional oil and gas or energy produced, I would suggest to you, at the residential level by an individual consumer or homeowner, all of it goes into the energy mix, strengthens our energy mix, makes us a better nation, creates more economic opportunity, and limits the environmental footprint overall. However, it does take a new program that would be identified through net-zero-energy home principles, designed toward the new construction sector.

Hon. Geoff Regan: Thank you.

Mr. Oliver, it's your turn. I know you're dying to talk about gas pressure drops, but before you do that, I want to ask you something. When you talk about the need to integrate the thinking about various energy sources in the planning process, to what extent do you think municipalities in this country have the capacity to do that? How can that change? Is there a federal role in assisting in that regard?

The Vice-Chair (Mr. Alan Tonks): You have one minute to respond to that, Mr. Oliver, please.

Mr. Bob Oliver: The lack of capacity is a reflection of the lack of knowledge. They need information, tools, metrics—things to guide their planning. It would also be helpful if there were a fundable requirement—that's maybe another role for the federal government—for a community energy plan to be part of the initial proposal for an expansion of a community area or the building of a new one.

The Vice-Chair (Mr. Alan Tonks): Good. Thank you.

Madame Brunelle is next for seven minutes, please.

[*Translation*]

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

Welcome, ladies and gentlemen.

Ms. McDonald, your association has been in existence since 1978, and it seems to me that we have been hearing talk about solar energy for a long time now. Why are things not moving forward more quickly?

Ms. Elizabeth McDonald: It is easier for me to express myself in English.

[*English*]

If you're asking about the penetration of solar in Canada, it's because we don't really have a renewable energy strategy that's federally driven, as they do in other countries. If you go to Europe, their needs and desires are somewhat different. We are blessed with quite a large supply of fossil fuels, but we're cursed by them in a way because they have made the uptake slower. When you go to Europe you see some of the challenges they face in generating the power they have and hoping to do something about their pollution and GHG.

Our neighbours to the south are more concerned about energy security than most Canadians are, so I think that's a second element of it. We've been slow to move and have not recognized until quite recently that we are taking more from the world than we're giving back. The technology is there for solar and all the others, and it is improving at quite a rapid rate.

We are also not recognizing the economic opportunity. It is an environmental opportunity, a climate change opportunity, and an economic opportunity. We can really create jobs. Through their strategy Germany has created about 250,000 jobs in the renewable energy area, of which 50,000 are in the solar energy area. That includes solar thermal, solar photovoltaic, and solar air to some degree. So it's embracing all of that and moving forward where I think we just have not had that vision and opportunity.

● (1615)

[*Translation*]

Ms. Paule Brunelle: With relation to that, Mr. Gordon Shields, you talk to us about these houses. In your presentation, you talked about the price-quality ratio. My impression is that this must be a very important element in the decision to purchase one of your houses. Furthermore, in Quebec, we see that the houses are getting bigger and bigger, perhaps because they are heated by electricity, and families are getting smaller and smaller. It appears to me that we have quite a hill to climb in convincing consumers to come on board.

How might we go about convincing people that virtue is a good thing? What do you think you might be able to do, on your end, to make these houses attractive? What can you do to make their cost-efficiency appealing, while at the same time ensuring that these houses are beautiful enough to attract our very demanding consumers?

[*English*]

Mr. Gordon Shields: Madame Brunelle, the cost is always going to be an issue right now. We are in the early stages of proof of concept homes. Builders are becoming more familiar with this principle of net-zero-energy housing. A moderate number of consumers are asking for it, to some extent.

When you address the issue of cost, which is the first question any consumer is going to ask when they want to purchase a house, especially a house of this kind, you're going to get an extraordinarily high amount associated with that incremental cost to the house, above and beyond conventional design.

Right now there is no easy way to answer your question, to say how we come up with the best marketing solution for our consumers and how the builder best sells this, if I understand your question correctly.

The issue right now is that we have to better educate the builder community first, and equally better educate the consumers about the combined benefits this kind of housing provides for both of these stakeholders.

When you walk into a display home, where builders offer different varieties of products or a different kind of housing, it's rare to find a builder who will say they can put photovoltaics on your rooftop or that they could design the house such that they could pre-install some of the wiring in case the owner wanted solar on their roof or in their home in some capacity.

We need builders who are beginning to market this, but they first need to learn more about it. And that's part of the leadership that can come from the federal government, but most importantly from the provinces, who have primary jurisdiction over this issue. There is a huge education curve and a learning curve. But combined efforts at a federal-provincial level—and I would even suggest at a municipal level—are required and can be done. It's happening to a certain degree right now in Ontario and will be, I hope, in British Columbia soon.

[*Translation*]

Ms. Paule Brunelle: Do I have a little bit of time left?

[*English*]

The Vice-Chair (Mr. Alan Tonks): You have one and a half minutes.

[*Translation*]

Ms. Paule Brunelle: My question is for Mr. Abiola or for Mr. Schaafsma.

In your presentation, you often make the statement that this or that should be done. Could you talk to us about some best practices, or are you still just in the study phase? Could you provide us with concrete examples of things you have done or things you have seen in Europe or elsewhere and that have served as a model for you?

● (1620)

[*English*]

Dr. Abimbola Abiola: Thank you. I'll be quick.

I will give you a couple of examples of some of the things we have done. In Alberta, in the area of waste management, at our campus we've spearheaded and we've worked with communities in the area of composting of waste. Every community, every municipality, in Alberta now has a waste management system where they are composting and recycling their material.

The other example is that over the last two years we've been working with producers, both in oilseeds and in some of the cow-calf operations. We are producing biodiesel on our campus and we are introducing it into communities. The local counties are using it. Our municipalities are using it in school buses. Many of our farmers are also using biodiesel and many of them are ready to use it. They only need help to have the technology to use it.

Thank you.

The Vice-Chair (Mr. Alan Tonks): Thank you, Dr. Abiola.

We'll now go to Mr. Hyer.

Mr. Hyer, you have seven minutes.

Mr. Bruce Hyer (Thunder Bay—Superior North, NDP): At roughly two minutes each or less—less would be great—would any of you care to comment on specific policy recommendations you would make to direct this committee, the House of Commons, or this government to facilitate the use of solar, biomass, or whatever your area of interest is? If you were to have influence—and you may have influence today—what would be your top one or two policy recommendations?

A little bit from each of you.

Mr. Gordon Shields: I think the first goes back to an earlier question. I think we need a dedicated program toward a vision of net-zero-energy housing, a fundamental transformation in the way we look at housing in this country—not to impose a federal presence over all provincial jurisdictions but rather have a vision that can be shared across the nation, much like the model national energy code is shared across the nation, but one that's geared around net-zero energy.

Second, that program or initiative should be endorsing community-scale demonstrations. The knowledge is there. The capacity is growing. It is the economies of scale that we need to drive down into now. If we get to the economies of scale, then the market can decide how best to find a solution on how to grow the net-zero-energy principle across Canada.

The Vice-Chair (Mr. Alan Tonks): Would anybody else like to comment? Ms. McDonald.

Ms. Elizabeth McDonald: First of all, I'll go back. We need a stated vision that has objectives tied to it, and then from there the programs will appropriately fall out, rather than having programs before you have a vision.

I think we also need a commitment to informing our citizens. The desire to adopt new energy or communities or net zero is high. The information that can be found from reliable sources—that is a challenge. I know that from the daily calls, and they will soon increase as people go back to their cottages and wonder how they can adopt renewable energy, and they'll ask me, which is not good.

The final thing, and this is really important, is that the Government of Canada needs to lead by example, not only in doing more and larger demonstration projects, as they are through the Net-Zero Energy Home Coalition, but also through their own procurement practices. There's an office within GWPSC, etc., but it's always difficult to do.

We have quite a thriving IT industry here in Canada because the Government of Canada is very active in that area. It procures from Canadian companies, etc. There is not really a commitment in a very tangible way, and that would make a big difference. Certainly in the U.S. it was done through a presidential direction from the previous President, not this one. It has made a big difference in terms of what government buildings are doing, and in fact in some cases they're using Canadian technology.

● (1625)

The Vice-Chair (Mr. Alan Tonks): Mr. Schaafsma.

Dr. Art Schaafsma: Thank you very much. I think the federal government ought to have a look at incentives and policies towards developing this net-zero concept for rural communities so there's a bridge between the rural communities and agriculture, trying to close that loop not only for energy but also for water and nutrients. It's a big future problem.

Also look at the scale of how we do things: rather than having a highly centralized form of agriculture and industry, try to scale that down so the loop is a lot closer and these various commodities—energy, water, and nutrients—flow in a tighter circle. It's not to dumb down agriculture but actually to make it more sophisticated and more technology-resourced to achieve those goals.

The Vice-Chair (Mr. Alan Tonks): Thank you.

Mr. Oliver.

Mr. Bob Oliver: Thank you. I would do three things in the context of integrated urban energy systems. I would first commit the principles of integrated urban energy systems to all federal building projects, construction projects, new buildings, and all that, wherever applicable the six principles can be shown to apply. That would demonstrate leadership.

The second thing is I would develop and fund, through the use of demonstration projects and federal studies, the development of an integrated urban energy system how-to guide for communities, complete with benchmarks and examples of how to do this in various communities. Every community will have a slightly different look to it when the principles are applied.

Third, I would begin to move on the development of funding programs to help communities develop their own energy plans, so that when they do move forth on expansion and growth, they're doing it with that information in hand.

The Vice-Chair (Mr. Alan Tonks): Good.

Mr. Hyer, Dr. Abiola would like to reply to your question.

Dr. Abimbola Abiola: I have just a couple of things. I think the government should still be willing to set objectives. I remember in 1999, when they set the objective to reduce waste in Canada by 50% by the year 2000. Many communities reached that goal across the country. That actually initiated provinces to follow through. The federal government has to be a leader in setting those objectives.

The second one, especially with energy, is that one of the things preventing people from adopting renewable energy is the fact that if they produce the energy, there are a lot of restrictions on being able to put the energy into the grid. Through legislation and other things, government has to make it easier, at the home and the municipal levels, to be able to generate electricity and put it there, and compete with the big guys.

The Vice-Chair (Mr. Alan Tonks): You have 45 seconds.

Mr. Bruce Hyer: Those are all my questions.

The Vice-Chair (Mr. Alan Tonks): That's it? Okay, thanks, Mr. Hyer.

We'll now go to Mr. Anderson for seven minutes.

Mr. David Anderson (Cypress Hills—Grasslands, CPC): Thank you, Mr. Chair.

I'm going to start with something I've been waiting to ask, and I don't know if you folks are the right people, maybe not, but we're running out of committee time here to ask this. I'm from the Prairies. When it was settled 100 years ago, people came out and many of them ended up digging down to find shelter and then covering themselves up. They found that to be a reasonably stable environment.

I'm surprised. I waited for someone to suggest that there's something we can do underground. I would be interested in your take on that—we're all going to spend a fair amount of time six feet under. Once you get down to a certain level there, you're below the frost line; it seems to me you have a stable environment that settles down your energy use and those kinds of things.

You have a comment on it, Dr. Abiola, but I'd be interested in hearing from Net-Zero as well, as to whether that's being considered as a major part of Net-Zero planning in terms of housing and those kinds of things. I think we have technology to get the light into the areas. I understand why people may not want to live there, but is it energy efficient to do that?

An hon. member: We're going to call you Groundhog Anderson.

Mr. David Anderson: I have a gopher problem in my area, but I want to be one of them.

Dr. Abimbola Abiola: I just want to give two examples. Many communities, especially municipal governments in Alberta, for example, are now going geothermal for all their municipality buildings, and it is very efficient. I think the federal and provincial governments have to do the same.

Geothermal is efficient. Many of our greenhouses in Alberta are now going to look for energy in geothermal. We have partners we are working with who want to bring geothermal technology for heating our compost. I think that would work.

Mr. David Anderson: Then is there a reason some buildings should also be in the ground?

Dr. Abimbola Abiola: Buildings in the ground—I don't have the expertise in that area, so I cannot make comment on that.

Mr. David Anderson: If anybody else has a comment, I'd be interested.

Mr. Gordon Shields: You're asking the coalition, and I'm sorry, at least in terms of the experience we have with some of the demonstrations that have happened to date, no, nothing underground.

I would concur, though, on the point of geothermal. That's about as close as we've seen where any interest is about going underground and in any capacity. But I would also make the point that the way we approach this is technology neutral, so where geothermal or solar might have its validity or viability in one part of the country, it may not be as viable in another part of the country. Geothermal and other technology options will vary, but if we take a neutral approach to this and look at it as whatever works in a particular region, then that's best.

But I'm afraid I can't answer you on the principle of digging deep into the ground. Sorry.

● (1630)

The Vice-Chair (Mr. Alan Tonks): Mr. Oliver wanted to respond to that, Mr. Anderson.

Mr. Bob Oliver: I can't think of the names of any projects right now, but I have seen it done before, and yes, it works. You get down to a certain depth, you're past the frost line, you're into a fairly stable temperature regime, and it would be good. I think geothermal is the second-best option, though. What you're trying to do is recreate the ability to be underground. You're above ground, which is where a lot of people want to be. You're just drawing the heat that's underground up, and you're circulating that through the building system and through the district energy systems, and then putting it back down.

Mr. David Anderson: Thank you. I have another question. I want to focus on solar for a minute.

I'm at the end of a grid in a rural area in Saskatchewan. If I would like to set up a system for my farm, just to have a reserve system—I have a farm, a shop, a couple of other buildings—in terms of solar, what type or size of system would a person need? Is that economical compared to a system that would be big enough to go on-grid with something from a farm-type situation?

My next question is, how do you handle a situation where you have monopoly utilities and you can't get access to the grid? We've heard that's an issue across this country. I'd like to hear from Ottawa Hydro on that as well.

Ms. Elizabeth McDonald: First of all, I'm going to let Wes answer most of this. But I want to assure you that the best solar resource in the country is in Saskatchewan—I just thought I'd state that. I think we're going to see the utilities start to move. In some places they're being strongly encouraged by the provinces, etc. I think there are groups in the U.S. where actually the utilities and the industry work together, and I think we have to start mimicking that here in Canada, because we're behind them—not because I'm fixated on the U.S. I think we have to do that more with the groups as such. To a large degree, a lot of the renewable energy groups have been small. We're starting to get more resources enabled to do some of those things, to allow those things to happen.

Wes, why don't you answer the question about the farm?

Mr. David Anderson: We also heard that some of the projects are working together with the utilities, but there's a lot of frustration from others that aren't able to.

Mr. Wes Johnston (Director, Policy and Research, Canadian Solar Industries Association): To expand on that a little, it is a learning process at this point. For example, in Ontario, programs are in place or coming into place whereby you can actually hook your solar system up to the electrical grid. Even though we have had a program in place for about a year and a half, it's being relaunched, but there is that learning curve. That has to be understood as well. It's on both sides—not only on the installation side, but on the utility side as well. There has to be that acknowledgment up front and that cooperation between everybody to try to get past that barrier.

In terms of putting a solar system up on your home, that's a great initiative. I highly recommend that. Saskatchewan, as Elizabeth mentioned, has the greatest solar resource in Canada.

In terms of what size of system you would require, I'm not going to answer that today. I'm not an engineer or an installer. However, there is a process that you would go through. You would want to speak to a qualified installer and designer, and they would go through a couple of steps with you to find out what your objectives are. They would take a look at your site and do an assessment on it to determine how much solar resource there is, the layout of the land, the pitch of your roof, and things of that nature. Also, they would do an energy consumption assessment to find out how much energy you are consuming and how large a system you would require. On top of that, they would do a fiscal assessment to find out how much you would be looking to spend.

Generally, right now a standard home would use about a three kilowatt system. At present prices you'd be looking at about $30,000. In terms of the payback for that system, it does depend on where you live in Canada. For example, in Ontario there is what is called the feed-in tariff, and that provides a greater incentive than you may find in Saskatchewan at this point in time.

The Vice-Chair (Mr. Alan Tonks): Thank you.

I think you're out of time, Mr. Anderson.

● (1635)

Mr. David Anderson: Can I get an answer to the issue of the monopoly of Ottawa Hydro?

The Vice-Chair (Mr. Alan Tonks): Yes, the committee is fine with that.

Mr. Bruce Bibby (Representative, Manager, Energy Conservation, Hydro Ottawa Limited, Net-Zero Energy Home Coalition): I can tell you that I'm responsible not only for conservation, but also for the renewable generations coming on our grid.

First of all, we're a municipal organization, and we're responsible for only the Ottawa region. So I can only speak to that.

Let me first address the issue of being, as you suggested, at the end of a feeder. This is an issue of engineering and physics. There's so much capacity you can put on any given line. If somebody is going to put a large generation on your line, then you look at the capacity that you have in your equipment, for all intents and purposes, and determine whether the equipment can handle that extra capacity. If it can't, then you have to reinforce the environment—the equipment that you have serving that area. That's the hesitation most often for people, especially in the last year or two. Generally it's a large installation that somebody wants to put up, whether it's solar or whatever, in a renewable generation. More often than not, when they're coming onto the grid, the hydro companies have had, over the past several years, a lot of capacity, but they haven't built out as much as they probably should have I think, if we look back over ten years of planning. They've used that excess capacity in their system and used it and used it. Now they're to the point where they're quite full, and as the generation starts to come on, they have a bit of a dilemma because now they have to reinforce and build excess capacity again. That's what's going on in the hydro industry.

For the residential solar rooftop, we expect in Ottawa about 5,000 customers to come online over the next three years. We're looking forward to them. They're not a big problem because they come on sporadically and in different areas. If one street comes along and everybody on the street wants to come on to the same point, then as we bulk those people up we look to make sure we can get them on the network. I think we're okay in our territory, and we expect that we're probably going to have some great success with it in Ottawa.

The Vice-Chair (Mr. Alan Tonks): Thank you, Mr. Bibby. That was very helpful.

We'll now go to the five-minute rounds.

Mr. Bains, would you like to lead off?

Hon. Navdeep Bains (Mississauga—Brampton South, Lib.): Thank you very much, Chair.

I want to pick up on the point that Ms. McDonald raised with respect to government procurement as a policy to deal with reduction of greenhouse gas emissions and implementing some of these programs.

Can you explain further what you mean by the procurement practices in greening them? Is it the request for proposals? Is it the bid process? Is it the criteria?

How better can the process be changed to accommodate and be more competitive for some of these proposals that would ultimately help the government in pursuing its green procurement policies?

Ms. Elizabeth McDonald: The United States government under President Bush—not under the present government—actually committed to a percentage of adoption of renewable energy by government buildings, and not just new government buildings. I think it was 15%, 20%. I'm sorry, I should have the exact number, but I forgot to pick it.

So the first step is to have that commitment, because then it makes it clear. Otherwise, you're just stuck in the traditional procurement issues of the Government of Canada, which is the bid that comes in at the lowest price and the fastest, etc. I was a consultant for a while. It just all kind of lined up tick, tick, and your name comes up and that's excellent.

Actually, if over that there were a commitment that 15%, 20% of Canadian government buildings had to get their energy from renewable sources, then I think you would see a major change, and it would show leadership. You are seeing it in some new builds, but not consistently, so I absolutely agree with you. You see it here, you see it there. And you see various departments doing it, depending on how they plan.

For example, Correctional Service of Canada has either already adopted or is in the process of adopting solar thermal technology in the penitentiaries in Saskatchewan, which is an excellent way for them to use hot water because they have lots of people who need to have showers. So you go from that kind of thing, where within a department a certain person decided to drive this agenda because they thought it was forward-looking. They had found the way to fund it, but it was not an overall commitment.

Every time the discussion comes out, it's “Well, we rent instead of own some of our buildings.” Well, I would say the Government of Canada is a fairly large tenant and people would welcome those buildings. So if part of it is to have some of the energy supplied by renewable resources, I think that would inspire the building owners to do that. When we build buildings we shouldn't just have the occasional building, as you said, but we should actually have a clear commitment that there should be a percentage, and that should be clear right across the board.

For example, it's very hard to penetrate the Department of National Defence, yet it has large installations across the country. In the United States the military installations are adopting renewable energy, and in fact a number of them use solar air technology that was developed in Canada for air heating. So there are real opportunities. That would build an industry, it would build jobs, it would build technology. It would deliver a whole lot. It would also give Canadians something they could point to—other than the 5,000 homes we're going to see in Ottawa, which I'm very happy to hear about.

● (1640)

Hon. Navdeep Bains: With respect to the 15% to 20% target that you outlined, is that a target you'd use in the U.S. as a benchmark? How do you determine that 15% would be deemed reasonable as a commitment to renewable energy?

Ms. Elizabeth McDonald: I'm a policy person, so I can't.... That's part of the reason why I would think this should be an integral part of any commitment this government makes. You have to sit down and bring all of the engineers and everyone together. But what the U.S. government did was I think first embrace 15%. It may be higher now. They basically decided that at a certain point you lead by example. So at a certain point it's going to be a tough decision to do, but again, given that the federal government is a significant tenant as well as an owner of buildings, I think that would be an excellent way for the government to lead.

The Vice-Chair (Mr. Alan Tonks): We're out of time.

Thank you, Mr. Bains.

Hon. Navdeep Bains: I thought you were going to let me have some time.

The Vice-Chair (Mr. Alan Tonks): I appreciate that.

We're going to Mr. Trost for five minutes.

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

It's sort of interesting for me, as a member, to watch the various panels go through, and they all talk about greenhouse gases, energy efficiency, and so forth. But I just want to say, at the end of the day, as much as we're all in favour of energy efficiency and so forth, ultimately for me as a member the goal is to improve the quality of life for my constituents. It's not energy efficiency for energy efficiency's sake; it's energy efficiency because it does improve the quality of life for my constituents, and if they have to make trade-offs and sacrifices, knowing the average voter, they're not going to do it.

So it brings me to sort of a point where I was talking about how economies of scale can drive down the costs for these various technologies. How far, in your various opinions, are we from those economies of scale? How much do we have to put into it? What sorts of timelines are we looking at where we can go to a point where the pilot projects are finished and the average Canadian will start to grasp this on their own?

I was at a homebuilding show the other week, because two of us here on the committee are in the process of building houses and we're looking at energy efficiencies, etc. Geothermal seems to be sort of at that tipping point on its own, but for most of the rest of the technologies, it's like hmm.... Better insulation tends to be what most people are talking about.

How far away are we from that tipping point? Is it more technology growth that we need? You mentioned economies of scale. What's the timeline we're looking at? How much more effort to get there do we need before people get the payback without a priming from the government?

I guess we'll start there, and I'm willing to take at least two or three different people responding.

Mr. Bob Oliver: I wanted to say that the integrated urban energy systems approach could be cost-effective immediately. We're not trying to push any one technology, but it's an approach to planning that provides for all of this distributed power generation and consumption to be happening.

We just heard about how, in the city of Ottawa, there's a local distribution agent. The grid can only accept so much distributed power. If you're building the grid from a starting point, it doesn't necessarily cost more than a classic grid, but it does enable people to participate in the consumption and generation of power to achieve a net-zero objective utilizing solar and agricultural waste and all that. It's an approach that, given the circumstances, might be cost-effective immediately.

The other thing is that, when you're doing that, what you're trying to do is not so much improve efficiency for the sake of efficiency; you're trying to eliminate waste, so hard-earned dollars are not going up in smoke.

● (1645)

Mr. Bradley Trost: And that improves the quality of life of my voter, so....

Mr. Bob Oliver: I think the more the money goes into value-added work, which enables economic activity, more jobs, better quality of life.... That's how I'd answer that.

Mr. Bradley Trost: Okay.

We'll go one, two, I guess.

Mr. Gordon Shields: Sure.

Mr. Trost, I would say to you regarding the quality of life that it goes into lower operating costs for the homeowners and how they can manage those costs more effectively if they have lower operating costs from energy use and the utility side. It's also healthier living.

We're not just talking about slapping photovoltaics on the rooftops and saying you have a zero-energy home or net-zero-energy home. It's about producing a better envelope first.

Mr. Bradley Trost: But how far away are we from doing that?

Mr. Gordon Shields: The United States has already targeted 2020 as where they want to see 70% to 80% energy reduction in their homes, which is effectively net-zero timelines and targets. I would say we're that far away. But I don't like to suggest that's where we have to look to right now. The vision is important, but nothing prevents where we are going to be in the very near future. Our building codes across the country, which will be effectively EnerGuide 80, will put us in a range where you can then have builders offering the potential of solar thermal or improved passive solar design or even photovoltaics as an option. But it's a near net-zero-energy stepping stone that we want to get to as a first point to allow the homes, first of all, to even be upgraded—retrofitted, if you will—at a later time, when the economies of scale improve or when the prices overall just come down and let in the consumer to be able to expand their house toward that path of net zero.

Mr. Bradley Trost: If I could pull a suggestion from what you're saying, it would be to prepare the houses for future technological advances. That would be worthwhile. That's what we're aiming for.

Mr. Gordon Shields: That's what I'm trying to get to. That's the stepped approach we're aiming for.

Mr. Bradley Trost: We'll move over here, because I saw someone wanting to answer the question.

Dr. Art Schaafsma: Just briefly, I don't think we can expect to turn a switch in one or two or three years and say we're there. It's a step-wise process. There are a lot of things we can roll out immediately towards a great benefit, but it's going to be an evolving process.

The Vice-Chair (Mr. Alan Tonks): Thank you. We're out of time, Mr. Trost.

We'll now go to Mr. Ouellet for five minutes.

[*Translation*]

Mr. Christian Ouellet (Brome—Missisquoi, BQ): Thank you, Mr. Chairman.

I much appreciate what you are saying. Indeed, government assistance is required and that is where these questions are leading. The government's help could be much greater. Twenty-five or 30 years ago, the government provided a lot more help to the solar energy sector. That is obvious.

You stated that government buildings should be the first to be refitted so as to provide examples of efficient solar buildings. The Confederation Building, next to the one we are in, still only has single glazing. The federal government is far from setting an example, but that is what it should be doing.

Mr. Shields, you mentioned the National Building Code, which is very important. It is somewhat limited to say that we are building net-zero energy homes. These are always small original and isolated houses, whereas we should be building gigantic zero energy consumption buildings. All of these buildings and multi-dwelling projects should also be net-zero energy.

Could the code be assessed? We have an energy code. The National Building Code includes a section on energy, but this section is not revised often enough, nor as in-depth as it should be. What do you think?

[*English*]

Mr. Gordon Shields: I would agree that the code is an important tool to move the builders along the green building continuum. That's important.

The codes are designed right now for the lowest common denominator—the laggards, if you will. Codes should be designed to help provide a pathway to a better place and incrementally grow and bring everybody along with them. You're always going to have the push and pull with industry in codes and regulations. I understand that challenge all the time.

But codes are only one part of it. You can't just raise a code and assume that the builder capacity is there to actually reach that threshold. Governments have a role to play in that regard to help build capacity or always facilitate the industry's capacity to effectively develop its way toward the pathway the government wants to see them move to—in this case, net-zero energy. It's not a single solution, but one part of it.

[*Translation*]

Mr. Christian Ouellet: I am happy to hear you say that. That is but one part of the solution, and the federal government could take care of that. It could also continue to provide help with regard to the larger buildings.

It is not necessary for houses and buildings to be completely net-zero, but it would be appropriate for them to aim for that. We have for 20 or 25 years now been erecting buildings that consume 50% less energy. That is where we are at. In Quebec, Hydro-Québec has several programs aimed at a 50% energy reduction.

Should the government be doing more than providing financial assistance? As Ms. McDonald mentioned, the government could not only provide help, but also launch an awareness campaign aimed at consumers, architects and engineers.

● (1650)

[*English*]

Mr. Gordon Shields: Well, it's of all governments, if you were speaking specifically of the federal government.

I go back to a principle of what we were about and what we came to be about. It is that it requires a paradigm shift in the policy, in the way we view energy produced in this nation. We tend to look at the residential or the built environment as a consumer-only issue: how to reduce the consumption.

If we change the mindset and don't just look to the central generation sources—nuclear, hydro, coal, to speak of where we are right now—as the only option, and if we look to the built environment as part of the solution on a production level, I think the federal government has a role to play there, with a national energy vision or strategy. I don't want to use the term “national energy policy”, because that's a bad term, but a “national energy strategy” of some kind that gives opportunity to these varied options of energy production. We lack that in the country.

If we could find one, potentially the energy sources—whether for transportation, or electrical sources of energy for the home, or thermal energy sources.... We need a strategy that identifies how we can find those strengths and leverage them. We don't do that right now by identifying the built environment. Until we do it, we're going to continue making programs or initiatives in silos and never effectively take an integrated approach to how we're going to produce energy in this country.

The Vice-Chair (Mr. Alan Tonks): Thank you,Mr. Ouellet. We're out of time now, so we're going to have to go to Mr. McColeman. Thank you very much for that line of questioning.

Mr. Phil McColeman (Brant, CPC): Thank you very much. I'm a fill-in today, but I'm feeling quite at home, actually. I've been a builder my whole life, prior to six months ago. As president of the Ontario Home Builders, representing about 4,000 building companies in Ontario, I know through the years that I served the industry as a person elected by my peers that there were many changes to the building code that moved us toward more energy efficiency. Through the years, we were involved with CMHC in developing standards, developing new technologies through R-2000 and in other ways.

Mr. Shields, I'm finding the assertion that I think you've made, that nothing is moving towards that ultimate goal of zero energy consumption, difficult to understand, because there has been great progress. I might say, too, that our peers around the world generally consider the housing stock of Canada to be the finest in the world. I'm wondering whether you have any comments in that regard.

Mr. Gordon Shields: I most certainly do.

First of all, if I've given any impression that I was critical of the industry, that was not my intent. Frankly, it's quite the opposite. You're right, Canadian homebuilders have been among the best in the world in building safe, healthy homes.

As for R-2000, I'll speak to that point, because it helps illustrate some of the challenges. Approximately 6,500 R-2000 homes exist in the country today. How old is the program? And there are 6,500 homes out of the length of it.

There has been an enormous uptake of interest in R-2000 in terms of training, so that builders could learn how to build the homes and tell people that they were an R-2000 builder. But do they produce them? That was the question.

As to the consumer—I'll just try to answer your question—part of the problem is how you effectively market a need that may or may not be there at the time. R-2000 might have been ahead of its time, if you ask me, to a certain degree. But we know how to build energy efficient homes right now. Consumers now, for the first time, are becoming more acutely aware of the energy cost challenges, the operating costs of the home, because of higher energy prices. This is the reason we have more interest from government and more importantly from builders in Ontario and across the country, concerning how to design and construct these homes.

I would say to you that it's not a question of builders failing Canadian consumers; rather, it's a question of leveraging what we know builders can do today, helping them move the code on energy efficiency and then recognizing that it's not net-zero homes overnight as a concept, but net-zero-energy homes over an extended period of time that matters—just giving the consumer the option to get to that point. I think builders can be part of it, and they are already building them.

● (1655)

Mr. Phil McColeman: I know we are. I guess the point is that builders build what consumers buy. The consumers drive the product, and there is a huge consumer expectation in this country, for that matter, of a certain standard of housing. This is all necessary to make incremental progress. Any expectation that this is going to happen in a relatively short period of time.... It may take several generations to get there, instead of following a fast track. What they have is all driven by consumer choice and consumer expectation.

I'm not saying that as a scenario. As I said, I think our housing stock in general terms is some of the highest quality in the world.

The other thing is that you made a reference to the codes being developed on the lowest common denominator of housing. I would question that. I think that in Ontario at least, some of the building code standards required right now, as far as energy efficiency goes, are not the lowest common denominator, not to my mind.

Do you have a comment on that?

Mr. Gordon Shields: Typically, homes right now are built at around an EnerGuide 72 or 68 range. The province is suggesting that they get to 80. The Province of Ontario is suggesting that they'll be at EnerGuide 80 in a short period of time, by 2011 or 2012, I think at this point.

My only opinion about the role of the code is that the code brings everybody onto a level playing field. It doesn't imply leadership. It just implies that you must get there now and that's what you have to build. Then builders will inherently have to build to that. It doesn't mean they want to build to that; they have to build to that.

There are builders who exceed that right now. Those builders are the innovators, the ones we're leveraging right now and trying to recognize and celebrate in saying, “You know what? The yardsticks can go further than EnerGuide 80, and if you do that, this is the product that can result.” That's why they think it's worth the risk.

Right now, the energy component in the home, beyond just energy efficiency, is a bigger sell in the homebuilding community, and it's growing. It's growing in the United States. It's growing in other countries. That's why those respective countries now are going down this path on a policy level. Hopefully, we will too.

The Vice-Chair (Mr. Alan Tonks): Okay. We're out of time, Mr. McColeman. Thank you.

We're going into the third round, with Mr. Shory and me.

If you trust me to stay within the five minutes, I will vacate the chair. Is that okay? I'll watch my own time.

I just have a couple of questions. I think the committee would be interested in any examples, perhaps, Mr. Oliver, where there is an integrated energy strategy that would include what you mentioned as the challenge of trying to use electrical systems in transportation. Are there any examples of best practices across the country where an integrated energy approach has been taken to include transit as part of the strategem?

Mr. Bob Oliver: Not as such, but any community that has a public transit system powered by electricity is representative of what can be done under an integrated urban energy system. If it's in Vancouver, or if it's in Toronto or Calgary, for that matter, wherever you have electrified rail and electrified transit, that is an example.

What I was suggesting was more along these lines. The way we do it now is we build our communities according to some prescribed processes and then we hand that over to the transportation authorities to figure out how wide to make the roads and how to service the expected level of mobility that comes with that. A better approach would be for the transportation planners, the builders, and the local energy distribution companies to come together to figure out a system that might work in an optimal fashion.

Again, if you're hooking your block of homes up to natural gas, you might be able to produce heat and power for your home, and that power might enable a certain amount of private electric vehicle use, or it might also be able to feed to the local electric bus grid. All of these things are examples.

The one example I would point out is in Victoria at Dockside Green. It doesn't have the transportation component that your question leads towards, but it does represent the efficient use of energy, waste water, and so forth.

● (1700)

The Vice-Chair (Mr. Alan Tonks): Good.

On the QUEST principles, our analyst has pointed out to me that point 6 is “to use grids strategically”, which means optimizing the use of grid energy as a resource to optimize the overall system and ensure reliability. Could you just expand upon this a bit in terms of what it means?

Mr. Bob Oliver: Certainly. We're not suggesting that centralized power be abolished and that all homes generate their own energy and the energy for the surrounding neighbours and so forth. There is a role for facilities such as institutional buildings and manufacturing plants in communities to generate heat and power for those communities. As well, there is a role for individual homes to feed the grid and share power with the district, with the community, but there may also still be a need for central power to bolster any shortfalls.

That point simply speaks to the need to look at the system holistically, to not be driven idealistically toward a certain objective, but to just utilize what we have. That's why I say it may be cost-effective immediately because you're starting at the planning stage.

The Vice-Chair (Mr. Alan Tonks): Ms. McDonald.

Ms. Elizabeth McDonald: I was going to point out that what we're really talking about here, too, is the adoption of smart grid technology. That was among some of the discussions that took place between the Prime Minister and Mr. Obama when he was up here. That's part of that dialogue that is going to take place between the U. S. and Canada.

I think the best example of what that means is.... If you've seen the GE ads—I'm not giving them a commercial, but they have the straw man from the *Wizard of Oz* saying, “If I only had a brain”. We have old grid infrastructure, and if we gave it a brain with the technology that's available, I think we would get a lot of the efficiencies that we're talking about. That would be an important place where the federal government can take a role. It would be an important place for it to happen.

The Vice-Chair (Mr. Alan Tonks): Mr. Bibby.

Mr. Bruce Bibby: With respect to smart grid technology, there have been committees within and without Ontario, and there are documents that have been released probably in the last four or five weeks. It would behoove the committee to take a look at this. It's probably a good picture of where smart grids could go. It captures everything, encompassing electric cars right through the entire network.

Ms. Elizabeth McDonald: I can provide you with a report done by the American Wind Energy Association and the American Solar Energy Society on smart grid technology. I'd be happy to make it available.

The Vice-Chair (Mr. Alan Tonks): That would be excellent. We would appreciate it. We could consider it as we bring our report together.

Ms. Elizabeth McDonald: The report Bruce is talking about is also very important. It gives excellent examples and deals with our climate. This is a place where this government can really show some leadership.

The Vice-Chair (Mr. Alan Tonks): If you could forward that to the clerk, it would be helpful. Thank you.

Mr. Shory.

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

First of all, I'd like to thank each of the witnesses for being here.

Does anyone know which country is the leader in the renewable energy sector?

Ms. Elizabeth McDonald: Germany.

● (1705)

Mr. Devinder Shory: That was easy.

Ms. Elizabeth McDonald: It is phenomenal to go there. It is breathtaking what they've done in their commitment to renewable energy and the job creation that it produces. They've integrated it into some of the most architecturally stupendous buildings I've ever seen. It is efficient, it's driving economic activity, and it has created some beautiful buildings.

Mr. Bruce Bibby: Germany started this process about 1990, just to give you a perspective on how long it took to get from where they started to where they are today. It took about 20 years.

Mr. Devinder Shory: Do they apply this system to individual homes as well?

Ms. Elizabeth McDonald: Yes, they do. They're particularly known for what they do in photovoltaics and solar. But they are also leaders in solar thermal, which is important to the use of natural gas. They're developing this energy source for reasons of energy security, perhaps because of some of the problems they've had with Russia, and they are converting 95,000 households a year to solar thermal technology.

Mr. Devinder Shory: Wow!

Ms. McDonald, in your opening remarks I heard a comment that Canada is behind some other countries and we need to do more. Recently, our government announced a home renovation program that gives homeowners tax credits for renovating homes, and this includes renovations to make the homes more energy efficient. Do you think this policy will encourage consumers to adopt energy efficient practices? Will it promote the renewable energy sector?

Ms. Elizabeth McDonald: First of all, it is absolutely outstanding that new moneys have been made available. In addition to that, the Minister of Natural Resources just announced, I think earlier this week, money for solar thermal retrofit. Taken together with some of the provinces matching it, I think solar thermal technology will be something you'll see in many of the provinces across the country within two years. But it's a very fast turn and there are a lot of issues that have to be addressed. That's why I talk about an umbrella framework policy, because it has to take into consideration educating people.

Before I took this job, I didn't even know you could heat water with solar energy. There are a lot of things Canadians don't know, and we did work in Ontario on that. We spent a lot of time informing consumers. It's what they don't know. So we will move forward in the next two years, but we don't have that framework to keep it going. We don't want to create something that's up here and then have the various industries, not just solar, fall off the edge.

Also, because it has happened so suddenly with this economic downturn, we have capacity issues to address. We'd already started working with Natural Resources Canada, which is very generously underwriting the creation of curriculum for solar thermal and solar photovoltaic installers for community colleges. But by the time these programs come and go, I hope we don't find ourselves with programs that aren't taken up to the degree they should be because of the short time constraints.

That said, I understand why we're doing it.

The really important thing to remember as you look forward is that for any of us here, while we think it's important, the market is my sons, my 22- and 28-year-old sons. That's what they want; that's what they're going to be looking for.

Can we drive down the price? I think we can. Can we work with the building industry? On the Ontario solar task force, one of the things we learned in working with the building community was absolutely the issue of what happens when people come to buy a house. How well educated are the real estate people? How well educated are the people selling in new communities?

You can have the homes ready, you can have a lot of programs ready, but perhaps there isn't the education there. So you need a framework. We need to bring everybody to the table. That's a role for the federal government. We need to have a smart grid. That's a role for the federal government to play. We also absolutely need to start seeing more federal buildings consistently adopting renewable energy as part of how they move forward.

The Vice-Chair (Mr. Alan Tonks): I'm sorry, but we're out of time.

Thank you, Ms. McDonald.

Mr. McColeman, you have five minutes.

Mr. Phil McColeman: I'm going to switch gears here, because we're talking a lot about residential housing. What about commercial industrial construction? I'd like the reaction of pretty much all of you to the LEED standards and the fact that they are being promoted in the building of federal buildings and infrastructure dollars going out. Are LEED standards in commercial construction useful?

● (1710)

The Vice-Chair (Mr. Alan Tonks): Mr. Oliver.

Mr. Bob Oliver: What I find interesting about the LEED standards is that they're not regulated. No one is being forced to comply with LEED standards.

It's a voluntary standard. It's kind of like Energy Star. When people buy a refrigerator, they are buying into something that they want to feel proud of.

Buildings are using it as part of their branding, frankly. They want to be known in the community as a LEED standard. So it incorporates all kinds of motivations beyond just whatever cost savings over the lifetime of the building might be accrued.

Mr. Phil McColeman: Are there any other comments?

Ms. Elizabeth McDonald: I think it's a combination of the standards, and you're right, it is part of branding. If that makes people adopt LEED platinum, gold, or silver, then that, from our perspective, is good, but the other part is cost.

I think you're going to see some of that with feed-in tariffs being introduced in Ontario, for example. I'm think you're going to see solar on buildings—"big box solar", as we call it. You're going to see more of that. So it's not just the building standard; it's also an incentive.

The established energy sources have their incentives embedded in them, so everybody has forgotten that they've been there for 100 years. I think the combination of the standard and support programs then will, in the case of solar, lead to the holy grail of grid parity. I'm here to talk about it on behalf of our industry, but I think you will see that with other technologies as well. It's going to need the same kind of push that the traditional energy sources had before as well.

Mr. Phil McColeman: Would any of you prefer to see that regulated and enforced as a policy standard?

Dr. Abimbola Abiola: At our college, we have a new initiative with the Community Learning Campus, which is a big one. From my personal experience there, I would not say that LEED should be something we are going to enforce. Various things are so ambiguous in that LEED certification, everything from the type of water you use to other things. I would suggest that maybe we should get people in the industry together, whether builders, suppliers, or even some government people. Let's set our own standard and go with that.

Mr. Phil McColeman: Good. Thank you.

The Vice-Chair (Mr. Alan Tonks): Finished?

Mr. Phil McColeman: Yes.

The Vice-Chair (Mr. Alan Tonks): Okay, good.

Mr. Regan, and then Mr. Ouellet.

Hon. Geoff Regan: Thank you very much, Mr. Chairman.

Mr. Oliver, did you get a chance to talk about those gas pressure drops? I think you're anxious to do so, so here's your chance.

Mr. Bob Oliver: I'm surprised no one has been asking about this. This is a great thing. Big, fat gas pipes bring natural gas to the edge of the community. It's high pressure. Then it gets stepped down to low pressure so it doesn't blow the caps off the pipes in people's homes. In the process of taking it from high pressure down to low pressure, the second law of thermodynamics requires that the energy internal in the fluid has to be maintained, so it goes up in temperature as the pressure comes down. That's a consequence of that law.

It draws energy, heat, from the dirt surrounding the pipe. It freezes the earth, cracks the pipe, and causes all kinds of damage, so what they do is burn natural gas to preheat it before it goes through a pressure drop. It's waste upon waste. This is an example of a technology that would be represented in an integrated urban energy system. Enbridge is proposing to put a turbine in the gas flow. Rather than have it draw energy from the surrounding earth as it goes down in pressure, it converts the energy in the pressure into electricity.

You step down the pressure in the pipe by running that high-pressure gas through a turbine so it comes down to the proper level of pressure that's needed to feed the residential community. Then that electricity that's generated by the spinning turbine, just like in a power plant, can be used to power industrial processes, the grid, or the homes directly. It's just identifying an opportunity in the standard ways of doing things. Business as usual is an obstacle to doing things that are innovative and logical.

● (1715)

Hon. Geoff Regan: That's an interesting opportunity. Fascinating. I'm sure we all knew about that, though, right?

The Vice-Chair (Mr. Alan Tonks): I think Mr. Ouellet knew about it.

Hon. Geoff Regan: Do I have time for one more quick question?

The Vice-Chair (Mr. Alan Tonks): You certainly do.

Hon. Geoff Regan: Mr. Johnston and Mr. Shields have talked already about the feed-in tariffs that have recently been implemented, I gather, in Ontario. Is that entirely a provincial question, or is there something the Government of Canada needs to do to encourage this? It seems to me this is needed across the country. What's your reaction to what's happening there and what needs to happen across Canada?

Ms. Elizabeth McDonald: My life is the Ontario feed-in tariff right now. Because of the way energy jurisdiction is done, it would be great if there were a national policy, but realistically I doubt that would happen. Gordon is agreeing with me.

That being said, I think to support or shine a light on successive projects, etc., is where the federal government can play. Certainly if buildings are built or there are retrofits, etc., where the combination of a feed-in tariff and federal government involvement—I think we are going to see a huge uptake in Ontario because of the combination of programs where the departments have a very good relationship together and are looking at various programs, including the feed-in tariff, to see if it will work and what it will do.

If the federal government can do some things to even push that along, then that helps a great deal. In addition, some tax issues may affect residential uptake. The CRA has apparently declared that anybody who is gaining money from the grid becomes a business, which may be a problem. It could be a disincentive. We're looking at it. Certainly, the Ontario government is looking at it, but there is some concern about that being a disincentive.

The Vice-Chair (Mr. Alan Tonks): Thank you, Mr. Regan.

Mr. Ouellet.

[*Translation*]

Mr. Christian Ouellet: Thank you, Mr. Chairman.

I much appreciate the fact that you are all talking about the same thing, namely integrating the various energy sources to arrive at something. There is a term that I have not heard often, but it was used here, and it applies to all buildings. I am talking about passive solar, which is of extreme importance. There is nothing to sell, but it is of extreme importance. Codes and requirements could help reinforce this concept, and this is already in place. There are countries that use passive solar on a broad scale. You talked about Germany, and I am very familiar with the situation there.

You talked about geothermal, you in particular, Mr. Oliver. You talked about geothermal within your overall system. Geothermal really represents the future, but we must not forget that deep geothermal can produce electricity. Natural gas remains a non-renewable resource.

There are 24 countries that produce electricity in this way. In the United States, a lot of research is being done. Are you not of the view that Canada should, it too, undertake research on deep geothermy, in other words, at a depth of 2 to 5 kilometres, as a means to produce electricity.

[*English*]

Mr. Bob Oliver: I think the government should try to map out where those resources might be and then determine whether or not it's an effective way.

It sounds to me, though, that if you have an opportunity to generate power using a geothermal resource deep underground and it's close to a community, then that's consistent with the integrated urban energy systems approach of utilizing power generation close to the consumers and cutting out the inefficiencies in between. I don't know enough about it to specify what Canada's resources are or what our foregone opportunities might be, but it definitely bears further study.

[*Translation*]

Mr. Christian Ouellet: I think that you have put your finger on it. The government must carry out research to determine where the richest sources lie. In fact, everywhere, right up to the Far North, the earth contains heat at those depths, and it is quite consistent. This is what has been discovered in the United States. This is therefore energy for the future.

Geothermy should be exploited for agricultural purposes in particular. It is an extraordinary renewable resource. Are you doing research on geothermal?

● (1720)

[*English*]

Dr. Abimbola Abiola: At Olds College we are working with industry, especially those in the greenhouse industry, to look at geothermal as a source of energy. We are actually going to be having two companies coming on campus, and we are working with them on their research to see how efficient it is and compare it with traditional greenhouse management.

So definitely, we are.

Looking at CARES, we are trying to look at those regional differences to be able to work on those. Also, our colleagues at the University College of the Fraser Valley are working in that area.

[*Translation*]

Mr. Christian Ouellet: Might I answer David's question?

[*English*]

David, can I answer your question?

[*Translation*]

You asked a question about an underground house. I myself have built several houses in the ground, and I can tell you that the cost is too high in relation to the energy savings. It must be said that when you take into account energy, it is the entire energy cycle that you must look at. The construction of such a house consumes too much energy compared to what it can give back.

However, such houses are built in areas where there are hurricanes and tornados, in the American Midwest and on islands that are hurricane-prone. In France, there are entire villages that are covered in earth.

[*English*]

The Vice-Chair (Mr. Alan Tonks): Thank you, Professor Ouellet.

[*Translation*]

Mr. Christian Ouellet: Thank you.

[*English*]

The Vice-Chair (Mr. Alan Tonks): I'd like to say that Mr. Ouellet has been on our committee, and he's visiting, and we welcome him—

Some hon. members: Oh, oh!

The Vice-Chair (Mr. Alan Tonks): I'm sure there are many who would support such a move. But we do appreciate the input.

Rather than have an opportunity for rebuttal or reply, I'm going to, on behalf of the committee, thank our witnesses. In regard to those reports that have been cited, as you know, we are moving towards a report that the committee will be putting forward. It will be in draft form, and we hope those reports will be available so that our analysts can use them as a basis for some possible recommendations, or sharing the experience you've had.

I'd like to take this opportunity as the acting chair to suggest that perhaps we should have a visit to Germany—

Some hon. members: Oh, oh!

The Vice-Chair (Mr. Alan Tonks): —if the chair will entertain a motion to that effect.

Ms. Elizabeth McDonald: Mr. Chair, I think if you talk to the German Chamber of Commerce, they will, as they have for many people in the renewable energy area, make it an absolutely outstanding.... Actually, you should look into it. You would be surprised how happy they would be to have you.

The Vice-Chair (Mr. Alan Tonks): We will take that under consideration.

Thank you so very much for being here.

Members of the committee, we have also a notice of motion, and I'm told by the clerk that it will be dealt with at the next meeting of our committee. If there isn't any other business, we'll see the clock at 5:30.

Thank you very much. We're adjourned.

Published under the authority of the Speaker of the House of Commons

Publié en conformité de l'autorité du Président de la Chambre des communes

Also available on the Parliament of Canada Web Site at the following address:
Aussi disponible sur le site Web du Parlement du Canada à l'adresse suivante :
http://www.parl.gc.ca
