House of Commons
CANADA

Standing Committee on Natural Resources

RNNR • NUMBER 014 • 2nd SESSION • 40th PARLIAMENT

EVIDENCE

Tuesday, April 21, 2009

Chair

Mr. Leon Benoit

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● (1530)

[*English*]

The Chair (Mr. Leon Benoit (Vegreville—Wainwright, CPC)): Good afternoon, everyone. We're here today pursuant to Standing Order 108(2) to continue our study on the contribution of integrated approaches for providing energy services in Canadian communities.

We have two witnesses today by video conference. The first, as an individual, is Alan Meier, the associate director of the Energy Efficiency Center at the University of California, Davis, and a senior scientist with the Lawrence Berkeley National Laboratory. We also have David Foster, the executive director of the Blue Green Alliance, by video conference.

A point of order, Mr. Regan?

Hon. Geoff Regan (Halifax West, Lib.): Mr. Chairman, I'm anxious to hear from our witnesses, but I received this morning, and I presume other members of the committee received, without any discussion, a notice about the meeting of the committee for Thursday afternoon in which the minister will be present. It's my view that this should not be a matter that is simply announced to us from the chair. Of course, as you know, the chair is the servant of the committee and not the other way around, and it seems to me that we should be deciding when we want the minister to come in the context of our discussions about our agenda. We should at least have some discussion about her availability. I find it hard to imagine that there's no Tuesday or Thursday in the month of May or June when she is not available to come. I think we should wait and we should have it after the month of April.

The Chair: The minister is coming on a Thursday.

Hon. Geoff Regan: Sorry, let me put it a different way: no other Thursday or Tuesday in the month of May or June.

The Chair: Okay. Mr. Regan, as I understood it, when we had our discussion on that, the members of this committee agreed that whenever the minister was available, we would set that meeting up and go ahead with it. That is my understanding—

Hon. Geoff Regan: It's not my recollection, but I'm certainly interested to hear from other colleagues.

The Chair: And I hope this conversation won't take too long. We do have two witnesses.

Hon. Geoff Regan: For example, I think we're waiting for a report on the nuclear safety regulator that I think is coming down in the near future, and I'm sure the minister would want to make sure that her presence here is after that, so she can answer questions about that report.

The Chair: Okay. You know, the meeting is scheduled.

Hon. Geoff Regan: Mr. Chairman, it was scheduled by you without any discussion with anyone else, as far as I can tell—perhaps with the minister's office, but other than that I'm not aware of anyone on this committee taking part in that discussion.

The Chair: We can go back to the discussions we had, but it is my memory that in fact this committee did decide that whenever the minister was available I would arrange the meeting based on that.

Hon. Geoff Regan: Perhaps the clerk could provide the minutes to that effect in due course, because that's not my recollection.

The Chair: I'm almost certain that's the way it occurred. If we could have the blues of those minutes—

Hon. Geoff Regan: Besides, we have a meeting that day already, as you know. That has been moved to the morning, that's fine. You have chosen to have it in the morning, a two-hour meeting. Members have lots of things to do, and I'm sure the minister does too—I recognize that. But it seems to me that this is the sort of thing we work out as a committee and don't have handed to us arbitrarily.

● (1535)

The Chair: I hear your concern, Mr. Regan. Again, it's no use restating what I believe was decided by this committee before. I certainly understand that as chair I work on behalf of all members of the committee, and I believe I have worked in accordance with instructions that were given to me and to this committee by all of its members before. That's my understanding. We can find the minutes of that in camera meeting where that decision was made, or maybe it wasn't in camera. It may have been made after debate on a motion. We'll take it from there.

Yes, Mr. Anderson.

Mr. David Anderson (Cypress Hills—Grasslands, CPC): Mr. Regan has served close enough to the ministry to know that the ministers come when they can. We had talked at this committee about her coming to deal with the main estimates and some other issues. She informed me that she could come on Thursday. We could have communicated that better—I apologize for that—but the reality was that she has Thursday open and is willing to come on Thursday. If the committee doesn't want her to come, I'd be glad to carry that back to her as well. But I think we've previously discussed the fact that she needed to come for main estimates. We were trying to find a time for her. We're having a meeting in the morning and there was some time available in the afternoon, so the offer was made to come on Thursday.

The Chair: Thank you, Mr. Anderson.

We have witnesses waiting here. The only decision we can talk about now, and let us make it very quickly, is whether you want the minister to come on Thursday or not. I'm going to ask for a show of hands on that.

Those who don't want the minister to come on Thursday as scheduled.... Five. Those who want the minister to come on Thursday.... Five. It's an even count. As chair, I will carry through with the plans that this committee had. We'll have the minister come on Thursday for one hour at 3:30 p.m., our regularly scheduled time. Thank you.

Now, to the witnesses. We will have the presentations in the order listed on the agenda.

Mr. Meier, you can go ahead with your presentation for up to ten minutes. Thank you very much. Please go ahead.

Dr. Alan Meier (Associate Director, Energy Efficiency Center at University of California, Davis, and Senior Scientist, Lawrence Berkeley National Laboratory, As an Individual): Thank you very much for inviting me to testify. I'm honoured, and I hope that my remarks are useful to your committee and to Canada.

I think it would be useful for you to understand my personal background first. I am currently working at the University of California, Davis, where I teach energy efficiency. I am creating several projects in energy efficiency research. I'm also a senior scientist at Lawrence Berkeley National Laboratory.

My other responsibilities include being editor-in-chief of a research journal called *Energy and Buildings*. I founded a magazine called *Home Energy*, which is designed for the practitioners. And I recently returned from a three-year appointment at the International Energy Agency in Paris, where I served as the senior adviser on energy efficiency.

For the past 30 years, my research and activities have focused on understanding how people use energy. I sometimes call that the “other side of the metre”. Most people focus on how energy is supplied. I'm mostly concerned about how energy is consumed, or transformed into useful services. I find that understanding consumption is critical to developing realistic technologies and policies to conserve energy.

Originally my research focused on energy-efficient buildings. Then I began to shift to appliances. More recently, I'm learning a little bit more about transportation. At the International Energy Agency, I focused on research into market barriers to energy efficiency, and monitored developments related to efficiency throughout the world, including Canada. Over the years, I have helped develop many energy efficiency technologies, methods, and policies. I hope today to discuss a few of the insights I have.

I need to apologize in advance that I'm not particularly knowledgeable about Canada. I think you should feel free to interrupt me if my line of discussion appears to be inappropriate to Canada or to your general lines of inquiry.

First I'd like to introduce what I call the “demand-side perspective”. From there I'll give you some observations about integrated planning and reducing energy use in communities.

About 30 years ago, we had a kind of curious asymmetry regarding energy. While the experts knew almost precisely, or with considerable precision, where our energy came from, they had little or no sense of how the energy was used. That is, nobody knew how much energy went to lighting, water heating, televisions, furnace fans, or air compressors in factories.

So the consumption side of the energy equation was a black box, sometimes affected by fluctuations in the weather or the season, but basically something that could not be changed. That absence of information has had a tremendous influence on the choice of energy policies over the last 30 years.

I want to give you some examples of the demand side perspective. Let's consider the demand and supply for electricity. Imagine two kinds of pie charts right in front of me. One would show the supply of electricity and the sources, where the electricity came from. That's coal, hydro, oil, or gas. In the case of Canada, I think the biggest slice is hydroelectric. Almost half of your electricity comes from hydroelectric sources. For the United States, though, only about one-tenth of our electricity comes from hydroelectric.

By coincidence, in the United States this one-tenth fraction of the hydro supply exactly matches the electricity consumed by our refrigerators. So if we had another pie that just showed where all our electricity went, the slice for our refrigerators would be exactly the same size, in the United States, as the slice for hydroelectric.

● (1540)

With that kind of information, we might want to consider the alternatives to building more dams or building more efficient refrigerators. If the electricity use of refrigerators could be halved, which would be more attractive, building more dams or reducing the electricity consumption of refrigerators?

Here's another example that is perhaps more surprising. It's the case of electric motors. Few people realize that about half of Canada's electricity is consumed by electric motors. These motors are everywhere once you start looking for them. They are in the refrigerators. They're in the furnace fans and air conditioners. They're in the compressed air systems that you'll find in many factories. They power pumps and disk drives and house fans and all sorts of things. Indeed, my guess is that motors consume as much electricity as generated by all the non-hydro sources in Canada. So basically if you think about these two pies of supply and consumption, you have all your non-hydro sources supplying electricity, and all of that is consumed by electric motors.

If you want to reduce electricity consumption and carbon emissions in Canada, then we need to address the motors and the services that those motors provide.

Motor applications are complex and typically require professional attention, but the potential savings are huge. There was a well-regarded study in Manitoba recently where they found that by simply replacing the electric motors in furnace fans in homes, they could reduce the electricity consumption of those furnace fans by 70%. This example is important not only because of that 70% reduction for the motors, but that translated into a 25% reduction in the electricity use of that home during the winter. It is a significant kind of saving that could occur. You don't realize these potentials until you begin to understand how the electricity is used in the demand side.

Another example of understanding the demand side is the case of automobiles. Again, automobiles are complex technologies, but nevertheless we know that about 20% of the fuel consumed by an automobile is used to overcome the rolling resistance of the tires. This is the energy—the rolling resistance—which is dissipated by the continuous flexing and re-forming of the tires that spin around. At least in the United States, for comparison, we know that that oil consumption, that 20% of the fuel consumption in cars, equals all the oil we import from Saudi Arabia.

We have recently found that there are some technical improvements possible in tires that can dramatically reduce a tire's rolling resistance, and that can, in some cases, reduce it by as much as 50%. That's without sacrificing the grip or the tread wear. So from a policy perspective we have to begin asking questions on whether the country should invest more in increasing oil imports or whether it should try to reduce the rolling resistance of tires. Again, we can only make these kinds of decisions, these kinds of balances and comparisons, when we have information on both sides of this energy equation.

I understand that one of your goals is to understand how best to integrate the energy policies. I believe that the effective integrated energy planning can occur only when both supply and consumption are taken into account. This applies to many aspects of urban planning where energy is a major input, such as transportation. Here too you have to be careful that you don't take either supply or demand as a kind of black box, because both sides of these equations, even if it's transportation, can be responsive to policies.

Recently, for example, I've been following the city of Toyama in Japan. This is a city of about half a million on the west coast of Japan that has been suffering economic decline as the young people have left to go to Tokyo and Osaka. What is left are the old people, and it is getting more and more difficult to deliver the services to these old people. At the same time, there's a lot of pressure to reduce energy consumption and carbon emissions in that city. The city is actually trying to reshape itself and align itself in a way that the key city and social services are on corridors. By getting both the services and the people who need those services on these corridors, they can reduce the cost of delivering those services and keep the city more efficient.

● (1545)

This whole process is under way. It's not going to happen overnight. They expect it's going to take at least a decade to make a significant difference. But they can see that this is the only way they're going to be able to provide those services and allow the city to economically survive in their new demographic situation and with new energy realities at the same time.

Toyama City knows that besides reducing the cost of delivering services, this new compact design will save energy and reduce carbon emissions. You might consider this is a situation where Toyama City is making a virtue out of necessity, but the fact is it's an integration that seems to be successful.

Before concluding, I'd like to stress one important difference between energy supply and conservation policies that I think has everything to do with integrated policies in towns and cities.

Most energy supply technologies—coal, nuclear, hydro, whatever, even some types of solar—are easy to point at when the facilities are finished. And they are relatively straightforward to evaluate in terms of knowing when they're generating electricity, or there's oil coming out of the pipeline, or whatever it is. But on the other hand, these kinds of projects are capital-intensive. And they create few jobs, which are not usually in the communities; they're a long way away from where people live. When they're poorly planned, they fail in huge, expensive ways.

In contrast, most energy efficiency policies are extremely diffuse activities. Sometimes they're touching every single home or store or factory in order to make them happen. But at the same time, their benefits are very difficult to evaluate. You have something that is causing energy savings, and you cannot measure energy savings like you can measure output because you're measuring a difference in energy use. So it's not straightforward. You don't have as much confidence that those savings actually happen unless you do careful evaluation. But on the other hand, energy efficiency investments are labour-intensive. The jobs are in the communities. They may be down the street or next door, so that means these are local jobs. I think if the policies are designed correctly, these jobs will persist.

Thank you for your attention. I would be happy to answer your questions about my remarks, or other topics.

● (1550)

The Chair: Thank you, Mr. Meier.

We will hear from the second witness, and then we'll go to questions. Members can question either or both of you.

Thank you very much for that big-picture look at things.

We'll go now to our second witness, from the Blue Green Alliance, David Foster, executive director, for about ten minutes, please.

Mr. David Foster (Executive Director, Blue Green Alliance): Thank you very much, Mr. Chairman and members of the committee.

My name is David Foster. Currently I serve as executive director of the Blue Green Alliance, a partnership of four unions and two national environmental organizations with over six million members, touching virtually every community in the United States.

The Blue Green Alliance is specifically made up of the United Steelworkers, the Sierra Club, the Laborers' International Union of North America, the Natural Resources Defense Council, the Communications Workers of America, and the Service Employees International Union. The collaboration of labour unions and environmental organizations is based on our common goal to build a clean energy economy, an economy that both creates good jobs and combats global warming.

The Blue Green Alliance has become one of our country's leading advocates for global warming solutions and good green jobs. I'm especially pleased to be given the opportunity to testify before the Standing Committee on Natural Resources on this same critical set of issues in Canada.

Before serving in my current capacity, I spent 31 years as a member of the United Steelworkers, and for 16 years served on the union's international executive board as the director of district 11, a 13-state region based here in Minnesota.

Several weeks ago, in response to the deepening economic and climate crises, the Blue Green Alliance put forward a policy statement on climate change. This was the first time a climate change policy statement came from both unions and environmental organizations. For some of our partners, it was their very first public statement on climate change.

This policy statement stressed the importance of including targets that rely on the best scientific evidence and on an economy-wide cap and trade system that contains mechanisms to prevent job loss in globally competitive, energy-intensive industries. Above all, the statement made clear that comprehensive climate change legislation should focus on the creation and retention of millions of new and existing family-sustaining green jobs, and should finance the transition to a clean energy economy.

I've submitted a copy of our policy statement for the record. I hope that got to you along with my testimony here.

The Blue Green Alliance strongly believes our U.S. Congress must act this year and pass responsible climate change legislation that will rapidly put Americans back to work with millions of jobs building the clean energy economy and reducing global warming emissions to a level necessary to avoid the worst effects of climate change. Our partner organizations agree that no course of action would be more destructive than to continue the energy policies that drove oil prices to $140 a barrel in 2008, contributed to skyrocketing food prices and global food shortages, and resulted in unsustainable trade imbalances.

Solving global warming will not be the economic calamity that some are predicting. Done right, the transition to a green economy will be the most important economic development tool of the 21st century. At the heart of this transition is the creation of a new energy system based on renewables and distributive generation. Some of the most notable examples of this transition exist in my own state.

In the neighbouring city of St. Paul, Minnesota, District Energy St. Paul produces, at its combined heat and power plant, 25 megawatts of electricity and 65 megawatts of thermal energy for its central city customers, burning wood chips from parks and other biomass, and providing steam for heating and cooling needs of much of downtown St. Paul.

In partnership with the local economic development agency, the St. Paul Port Authority, and a private recycling paper mill, District Energy has also embarked on an ambitious plan to convert the Rock-Tenn paper mill to a clean energy source, burning biogas from an anaerobic digester that converts waste residue from a neighbouring ethanol plant into renewable fuel. This project is envisioned as a key building block in creating a green corridor that connects Minneapolis and St. Paul through the delivery of clean energy.

In rural Minnesota, another renewable energy project known as CBED, or community-based economic development, provides a ready market for locally owned and developed wind-generated electricity. Minnesota has one of the country's most aggressive renewable electricity standards, requiring that 25% of electricity consumed in the state comes from renewable resources by 2025.

● (1555)

As a result of this policy, significant investment is taking place in the western portion of the state. CBED requires local utilities to purchase the output of individual wind turbine projects from local farmers, thus making it economically feasible for small farmers to own, operate, and profit from the production of renewable energy. The State of Minnesota estimates that family farm income could be supplemented by as much as $100,000 a year from these projects once initial capital investment is repaid.

These two local stories demonstrate what I hope is the potential of the clean energy economy. And they give us a clear sense of the important role that government can play.

First, government must give clear signals to markets on the future direction of energy prices. Strong cap-and-trade legislation that puts a long-term price on carbon, combined with a clear regulatory framework like renewable electricity standards and energy efficiency standards, provides the tools that investors need to know where the market is going. Our experience in the U.S., with some 28 state-based renewable electricity standards, shows the strength of influencing markets to create jobs and investments in clean energy.

Second, government needs to play a stronger role in solving transmission challenges that have resulted in a transmission patchwork built around moving energy inefficiently from large base-load plants to consumers. Programs like CBED in Minnesota or feed-in tariffs in Germany have shown the power of creating economic development tools that can be put in the hands of small producers or consumers. In Germany the regulatory framework and markets created by feed-in tariffs have created a solar industry that today employs 240,000 Germans in one of the cloudier countries in the world.

In the U.S. this week we will have an important milestone in the effort to pass federal climate change legislation. The Waxman-Markey bill will be heard in a series of public hearings before our energy and commerce committee. We were pleased to see many of the Blue Green Alliance principles in their draft climate change legislation. We think the draft legislation is a step in the right direction to solving climate change and creating jobs for the economic recovery.

The creation and retention of these millions of new and existing family-sustaining green jobs, particularly in manufacturing and construction, must be a top priority of climate change legislation. The recent American Recovery and Reinvestment Act of 2009 took the first step in that direction with a meaningful down payment on investments in the green economy. Approximately $120 billion of its investments were directed toward building the green economy and its infrastructure. Within days of passage we started seeing anecdotal evidence of its benefits when over 180 workers were recalled by the Andersen Corporation in Bayport, Minnesota, which makes energy-efficient windows. But this down payment could be wasted if we don’t make all the next installments in the clean energy economy at the scale necessary to convert our country to renewable energy.

The Blue Green Alliance was especially pleased to see the draft legislation require an increasing percentage of electricity sold by utilities to come from renewable sources, reaching 25% by 2025. Creating a regulatory framework that supports renewable energy, energy efficiency, and new transmission provide important market signals that will provide private investment at the scale necessary to put millions more Americans back to work.

A study released in 2006 by our organization and the renewable energy policy project of component manufacturing, based on a 10-year effort, found that 850,000 jobs would be created with $160 billion of investments in manufacturing. Economic models for my state showed that a 15% renewable electricity standard would generate over 18,000 jobs in component manufacturing. As I mentioned, my home state currently has a 25% renewable electricity standard, and as a result is home to the nation’s two largest construction companies specializing in wind farm installation.

● (1600)

In the interests of time, I will skip over some of my written testimony and hope that can be shared with other members of the committee.

In conclusion, I want to say simply that global warming is already destroying the livelihoods of workers everywhere. For example, thousands of steelworkers who used to make aluminum in the Pacific Northwest have lost their jobs in the U.S. because 15 years of declining snowfall in the Cascade Mountains meant less water in reservoirs and higher-cost electricity from the mightly dams that Henry Kaiser built 60 years ago. Seven smelters closed because they were unable to afford the higher costs of electricity. These lost jobs are a grim testament to why we can't wait to deal with climate change.

Failure to act will have severe economic consequences. In Nairobi, where last month I spoke to the United Nations Environment Programme's biennial ministerial forum, global warming isn't just about lost jobs. It's about starvation and mass migration. What little hope countries like Kenya or others in the developing world have of climbing the development ladder out of extreme poverty and into the ranks of the so-called emerging economies is evaporating as surely as the deserts of Darfur are expanding. That's the price of failing to act on global warming.

Before us are critical choices and decisions. Will we build the clean energy economy and put North America's factory and construction workers back in their jobs? Will we advocate a new development model for the third world that emphasizes consumption in their economies instead of unsustainable trade deficits in ours? Will we look back a year from now and say that we stood up for our countries, our climate, and all humanity when it mattered?

All of our choices are among those that will decide which path we go down. The Blue Green Alliance, its partner organizations, and its sister organization, Blue Green Canada, look forward to working with members of your committee as you continue to work on this critical issue.

Thank you very much.

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

Mr. Foster and Mr. Meier, we will now go to questioning. Some questions will be directed to one of you, some to both of you. If you could listen for that and if you could indicate if you'd like to answer the question, I'll be watching for that and will introduce one of you first and then the other for the questions that go to both.

We'll start the questioning with seven minutes for the official opposition, the Liberal Party, starting with Mr. Tonks, and if Mr. Tonks leaves some time, we'll have Mr. Regan.

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

Dr. Meier and Mr. Foster, thank you very much for your overview.

The committee has been attempting to look at integrated energy systems as part of that future that will work, as opposed to the future that won't work if we just keep doing the things that we are doing.

My first question is to Dr. Meier. You talk about Toyama City, Dr. Meier, in terms of, I take it, its change in urban planning. You talked about what I take to be a more sustainable urban plan that uses its resources in a more productive way. Can you give us any other examples, from your experience, of countries or cities that in fact have seen the light and are looking at the manner in which they grow in terms of looking at a more sustainable approach and using integrated energy systems for transportation to achieve that kind of an objective?

● (1605)

The Chair: Dr. Meier.

Dr. Alan Meier: Thank you for that question, Mr. Tonks.

I don't know immediately about transportation, but maybe I could mention another region that I am observing, I guess, from a distance, and that is the province of Upper Austria. This area also suffered from an economic depression 20 years ago as a lot of their heavy industry declined and their light industry, which was furniture building, also declined, and their forestry industry declined.

Then some clever person realized they could take some of the boiler-making capacity, use some of the old forests that no longer made good furniture wood, put them together with some chip-making facilities, and they started the wood chip industry and you have these wood chip or wood pellet stoves and so on. All of this came from Upper Austria.

It's been fascinating to watch how they've integrated the collection of the wood, which is second-growth and low-quality wood, with the former boilermakers to make the new wood chip furnaces, what we call pellet stoves.

Then they began to realize that was only half of the story. They had to deal with the problem of making the homes and the buildings more energy efficient to begin with. So they became one of the most aggressive—and I don't want to use the word "aggressive" in a bad sense, but in a positive sense—promoters of energy efficiency combined with renewables. So in the past, whereas almost all of Austria's homes outside of the major urban areas relied on fuel oil for heating, now it's down to about zero, because they've managed to make a complete transition to these pellet stoves for water heating and space heating.

Probably if I search my mind I'll come up with some ideas on transportation, but I thought that would be a good starting point.

Mr. Alan Tonks: Thank you for that, Dr. Meier.

As a follow-up question to that, are you aware of any economic models that would be convincing, in terms of the development industry when it approaches a rather large brownfield redevelopment, that would look at geothermal or solar or alternative energy packages, if you will, for that development?

I guess my question is twofold. Are you aware of any economic modelling that would illustrate that there is a return that would convince the developer that in the longer term, the best first course of action would be to implement new technologies, as opposed to just taking the traditional approach, which is interfacing with the existing electrical grid and drawing power toward that redevelopment?

Dr. Alan Meier: I'm not aware of any specific models. I think it's more a matter of the boundaries and starting assumptions that you put into the existing models. It's a business model in a sense. How radical an idea are you willing to accept? I don't know how to answer that question in terms of saying yes, there is this model XYZ, made by some university or planning consultancy or something like that. It's more a state of mind, that the people who are using the current models need to be able to consider and take in new kinds of information about these energy strategies, whether it's on the supply side or the demand side, and incorporate them with reliable data so that they can make decisions that can include them.

● (1610)

Mr. Alan Tonks: Thank you, Dr. Meier.

Mr. Foster, the objective of transforming our economy, and certainly the role that our workers play, is absolutely fundamental. You've addressed that. You've given us illustrations in St. Paul, in Minnesota. You've talked about Germany creating 250,000 jobs. You've also talked about the implications with respect to having a 25% target for the transformation of energy production away from fossil fuels.

Is there part of that national strategy that you talked about in your policy statement and a worker re-education, a new skills upgrading, a new transformation strategy, taking place in the United States as part of investing in new technologies? You not only need to commercialize those technologies, but you also need to service them and train people to provide the backup that goes with not only building them, but maintaining them. Is there a national strategy on re-employment, if you will?

Mr. David Foster: Thank you very much for that question.

First of all, yes, there certainly is recognition of the importance of worker training and retraining, both as part of the strategy of implementation of the transformation to the clean energy economy and as a response to changes in the economy overall, making some skills in some parts of the country redundant and requiring other skills in other parts of the country for economic expansion.

Dealing with those kinds of worker training issues is extremely important. Parts of the recently passed stimulus bill, or the American Recovery and Reinvestment Act, addressed those questions of worker retraining. In the proposed Waxman-Markey bill, there will be a major section dealing with the training needs of workers in order to respond to those changes in the economy.

I would say, however, that there's an aspect of worker retraining that I think gets overstated. It's important to remember that one of the prime economic benefits of these big clean-energy investments is that they will re-employ people with skills that they already have. In the current economic crisis, the six most common strategies for solving global warming available to us will produce great demand for jobs that people who are currently unemployed could put to quick and ready use.

For instance, in the strategy of building retrofitting to make buildings more energy-efficient, we did a study that picked the ten most common job categories required. Not surprisingly, those job categories are primarily in the construction field. They include carpenters, electricians, wall insulators, drywall installers—all the jobs that currently in the U.S. are experiencing an over 20% unemployment rate.

One of the main benefits of making big investments in energy efficiency in our building stock is that it takes advantage of existing job skills. It takes advantage of the very unemployment weaknesses that are dragging the economy down. It puts money into the hands of important consumers, who then turn it over in the economy and create demand for other products.

I think in our discussion about clean energy and global warming, we sometimes overemphasize the level of worker retraining required to undergo that transformation. We underestimate the degree to which these investments will actually reinvigorate much of our existing infrastructure in manufacturing and construction.

The Chair: Thank you, Mr. Foster.

Thank you, Mr. Tonks.

We go now to the Bloc Québécois.

Madame Brunelle, you have up to seven minutes.

[*Translation*]

Ms. Paule Brunelle (Trois-Rivières, BQ): Good day, gentlemen, and thank you for joining us.

Mr. Leier, you spoke of the importance of integrating energy policies and we don't disagree with you. You maintain that policies of this nature can be adapted to demand and supply.

The example you gave us of Toyama is one where an interesting integrated policy approach was taken. I'd like to hear more about it. You say this city was able to adapt and opted to focus on grouping together its infrastructures. However, as you know, in Canada and the United States, we see a considerable amount of urban sprawl.

In Toyama's case, where did this awareness and the will to adopt this approach come from? Was it a matter of governments having the political will to act? In Quebec, efforts were made to revitalize downtown Montreal and to encourage people to live downtown instead of in the suburbs. It hasn't been an easy process, after trying for 40 or 50 years to sell people on the advantages of living in the suburbs. Where does one start?

● (1615)

[*English*]

Dr. Alan Meier: Thank you for the question. I don't think I will be able to do it justice for the response, because I confess that I have never been to Toyama, although I have lived in Japan, and I've probably been to many similar cities. I would like to immediately suggest you go to their website. If you search for the name you can probably find some information about it.

Let me try to answer the question. First of all, they were facing several problems at the same time: a clear economic decline, loss of the young people, and a concomitant demographic shift. The city was growing older much faster and they could tell that they were not going to be able to supply the city services any more. They just could not afford it. It would bankrupt the city. There was a pressure at the municipal level that they had to do something in order to make the city more attractive. They did have a little more pressure than we could exert in North American cities in forcing the location, or relocation, or realignment of some of the major infrastructure items, such as the hospitals, senior citizens homes, and so on, in a way I don't think we've really tried to do.

At the same time, we have the influence of the environmental movement where they knew that they needed to reduce their carbon emissions. This is a general agreement in Japan that they have to do something about it. So it was a constructive confluence of both the positive and negative trends that they had to deal with, and they realized that the best way to accomplish it was to begin reshaping the city. It's not finished. It's a work in progress. I use it to illustrate the kinds of concepts that might happen for different reasons. You may end up finding yourself saving lots more energy, but mainly to address a completely different problem.

I suspect I'm slightly avoiding answering your question. I encourage you to make a field trip to Toyama City and experience it for yourself.

The Chair: That's exactly what we were thinking.

Madame Brunelle.

[*Translation*]

Ms. Paule Brunelle: You have answered my question, but I will try to get more information. I'm intrigued by this because you worked for an energy conservation agency in Paris for three years. When I first travelled to Europe back in the 1970s, I noticed that people were already more energy conscious. Among other things, cars were already much smaller. I was also struck by the fact that in London, people had small refrigerators—you were talking about refrigerators earlier— whereas here in North America, people had very large appliances.

Are we in North America behind in our way of thinking? Have we relied too heavily on our plentiful supply of energy, including hydroelectric power, and as a result, have we become energy hogs? Is that why it is so hard to convince people to cut their energy consumption?

[*English*]

The Chair: To Mr. Meier.

● (1620)

Dr. Alan Meier: I think you have several questions there, and I'll try to address some of them.

It's clear that Europe uses less energy per person and per unit of GDP than do the United States or Canada. It's also clear that the price of energy, especially fuel, is much higher in Europe, and that has influenced the choice of vehicle. There are some other trends that you certainly could have observed in Europe.

But I want to address another question, about whether we're lagging. I'm going to tell two stories. First of all, Canada has had minimum energy efficiency standards for appliances for, I think, at least 15 years. I can tell you that in Europe they have only now introduced them, except for a couple of appliances that came in earlier. Only now has Europe created a legal framework for these efficiency standards that Canada has had in place for years.

Now, it's true that the lifestyles are very different. I'll jump to the question of whether we can reduce our electricity consumption. I'd like to illustrate my answer to that—which is yes—by pointing out that the city of Juneau, Alaska, which is north of most of Canada, recently had an interruption of its cheap hydro because of an avalanche. It switched to diesel fuel for its electricity, so the price of electricity went up tenfold overnight.

In the space of about six weeks, we managed to engineer a 30% reduction in electricity use for the entire city of Juneau, and that happened without anybody having a blackout. The economy continued without any interruption. And how did they do it? They actually became aware of their electricity consumption. And that was without any technology. That was just a behavioural change. Now, imagine what would happen if we put in new technologies.

So you can see that there are actually great opportunities to reduce electricity consumption. Even without changing behaviour, you can get some. With changing the way we treat energy, we can get even more.

The Chair: Thank you, Mr. Meier, Madame Brunelle.

We'll go now to the New Democratic Party and to Mr. Hyer for up to seven minutes.

Mr. Bruce Hyer (Thunder Bay—Superior North, NDP): Can I share that time with Mr. Cullen?

The Chair: Absolutely.

Mr. Bruce Hyer: I have a question for Mr. Foster.

Mr. Foster, I'm really curious about the technology, and I could talk to you about that all day long, but I'm also interested in the process by which we persuade ourselves to make these huge social and technological changes that we are considering.

Around here, roughly a third of the people feel threatened economically by the changes we're talking about. A third believe, as you've said, that there are many job benefits and economic benefits to be accrued, and about a third of us seem to be undecided or uninformed.

How do we persuade the unpersuaded that we need to move quickly and decisively, and that this really isn't a threat but rather an opportunity?

Mr. David Foster: That's a great question, Mr. Hyer, and the one that in many ways I think is the most important question all of us in the industrialized world should attempt to answer this year in the lead-up to the Copenhagen negotiations.

As you know, I have spent most of my adult life in factory towns and among factory workers, listening to their concerns during a period of prolonged instability. In the U.S., we went through three distinct reorganizations of the steel industry, and virtually every other manufacturing industry, in which waves of blue-collar workers lost their jobs. Those jobs reappeared very often in low-wage parts of the world, and the products we once made were replaced with imports from the places with the least regulation in the global economy.

I have found that convincing U.S. workers of the benefits of these clean energy investments comes through a kind of three-stage process. The first is understanding the real cost of job loss over the last 20 years—and I've described what happened in the steel industry, that it was all about a race to the bottom. I believe most blue-collar American workers today believe deeply in their hearts that we embarked on a flawed battle of global integration that destroyed much of the manufacturing backbone of the country. They deeply relate to understanding the real cause of job loss.

Secondly, I think part of the process is understanding the economic danger of doing nothing about global warming. In my testimony I mentioned the story of what happened to aluminum smelter workers in the Pacific Northwest and being able to demonstrate concretely how a changing climate isn't a question of endangered species—it isn't a question of habitat or wildlife alone—that it's really about the profound disruption of the human economic systems and it's a disruption that's happening around us today. Aluminum workers lost their jobs because of global warming. Las Vegas, as a hospitality centre in North America, will become unliveable as a result of global warming, and those tens of thousands of workers will lose their jobs. It's making very graphic and very specific the impacts global warming is going to have on people's pocketbooks.

I certainly know I've discussed with steelworkers and pulp and paper members in the western provinces about the threat of the pine bark beetle to the boreal forest in Canada and the potential impact this global impact-related threat will have on workers' jobs.

Finally, the third piece I think is pointing to the real demonstrated promise that these events in clean energy have. We were already seeing those before the recession last year struck in full scope. There are lots of examples of ways in which clean energy investments were putting old-line blue-collar smokestack industry workers back on the job. We saw from the demand for wind turbine towers that steelworkers were called back to work in plate mills that hadn't operated in five or six years, in Gary, Indiana. We saw foundries in La Porte, Indiana, ramp up and operate at a level that they hadn't in 20 years. They hired hundreds of workers to do castings for wind turbine bases all over North America.

We saw, as I mentioned, large construction companies putting thousands of unionized construction workers on job sites in our wind-rich prairie states. The broadcasting of these images, of blue-collar workers picking up their lunch buckets and going back to job sites, walking into factories, doing the jobs they'd done for decades and doing them now for the vision of a clean energy economy, was a welcome sight to people who'd seen nothing but job losses in their communities for the last 20 years.

● (1625)

I think those are the three steps to creating awareness and enthusiasm about the importance of these kinds of investments being the smart, effective way to stop the recession and turn the economy around.

The Chair: Mr. Cullen, you have time for one short question, please.

Mr. Nathan Cullen (Skeena—Bulkley Valley, NDP): It's back to you, Mr. Foster. It's good to see you again.

This is a question about the need to eliminate the notion of an economic versus an environmental debate. We saw this in the previous American administration, that it was one or the other, that Americans had to pick, the world indeed had to pick. We heard this even some weeks ago from the environment minister here in Canada.

To the workers who are being put out of work right now or have been over the last several years, how critical is it to mesh the arguments, if you will, that the recovery required for the U.S., and I would say for Canada as well, is in fact in line with a number of the environmental priorities that are directed by climate change in Copenhagen, in particular?

Mr. David Foster: Well, again, a great question. I think it's essential that we link those two.

We're at a moment in which the model of the global economy that we were running showed that it was literally and absolutely unsustainable. In 2008 we saw a run-up on natural resource prices in everything from oil to bauxite to alumina to copper to cement. You name it. Virtually all the natural resource materials of an industrialized economy were in scarce supply and were being used as finite resources in a way that simply couldn't go on. That translated into what I think was an extremely fearful run-up on food prices, the return of food riots, the kind of demise of the green revolution that we thought was putting us on a pathway to ending world hunger. Along with this, there was this sense that the unsustainable trade deficits that the United States was running up, particularly with China, were somehow a healthy thing or a healthy model for building a sustainable global economy.

We simply can't go back to trying to recover from the current recession to re-create that same kind of triplex of problems. To do so I think really invites global and human disaster on a scale that none of us really wants to experience. We're being given, I think, a fundamental choice right now, which is to retool our economy by building it around sustainable technologies and sustainable energy forms that have the blessing of requiring us to make large enough investments that they literally can restimulate a global economy to get it back on a path of long-term sustained growth.

We need a really big galvanizing set of investments, investments on the size and scope of World War II that turned the Great Depression around, on the size and scope of things that we've done in the United States in the past by building the big national interstate highway system. The clean energy investments needed to change our economy fundamentally are of that size and scope. We can turn the economy around by letting that section of the economy lead.

Alternatively, look at the other sections of the global economy today and try to imagine what section of the economy is going to lead recovery. It's sure not going to be the banking industry. It's not going to be global finance. It's not going to be the housing market. It's not going to be in many of the other sectors that have run their course. Consequently, I think we have a clear choice to make, a clear investment to make, and it happens to be the one that's the best for the economy and the environment.

● (1630)

The Chair: Thank you, Mr. Foster, and thank you, Mr. Cullen.

We go now to the government side, to Mr. Hiebert, for seven minutes or so.

Mr. Russ Hiebert (South Surrey—White Rock—Cloverdale, CPC): Thank you, Mr. Chair.

Thank you both for being here today.

I'm going to direct most of my questions to Dr. Meier. I have a number of them, so I'll ask you to be as concise as possible.

The first question I have relates to what role industry or private business plays in developing the kinds of community-integrated energy systems we've been talking about. A lot of people have talked about the government's role, and I'll get to that in a minute. What are your thoughts on the role that the industry or individuals, private businesses, can play in this transition?

Dr. Alan Meier: Did you say there were going to be some other questions too?

Mr. Russ Hiebert: I'll get to those, but I'll do them one at a time.

The Chair: Just ask the questions one at a time.

Dr. Alan Meier: That's a very broad question. I confess, I don't have a simple answer to it. But the way I'm thinking now, if we are going to move quickly to a future in which we're using much less energy and creating lower rates of carbon emissions, we have to involve industry and the private sector. In fact, if we're going to make this transition at all, we have to make sure that in some way it's going to be profitable, and highly profitable, for the private industry to get involved to reduce emissions and energy consumption. Otherwise, it's not going to happen.

In that context, we have to start asking what industry is going to do. We really have to figure out ways of rewarding innovation to find new ways of reducing energy consumption. I don't have all the answers there, but I do know that it's not going to happen unless private industry is deeply involved in the whole process and making a handsome profit out of it.

I don't know if I answered your question.

● (1635)

Mr. Russ Hiebert: I firmly agree. You can't coerce industry into making these changes; you have to make it attractive to them to some degree.

In your opening remarks, I was struck by the examples you gave. You talked about motors, specifically updated furnace fans, that can reduce 25% of the cost of a home's energy consumption in the winter. You talked about technology that would reduce the rolling resistance of tires by half. I know that in Canada we have made the transition from incandescent to fluorescent light bulbs, which is another technological change that is reducing consumption of energy.

To what degree do you think what appear to be minor changes could solve the problems we're facing? A 50% reduction of the 20% of fuel used to move a vehicle is significant. Are there a series of these kinds of technological changes that we could adopt or advertise that consumers would find appealing and be economically viable, to solve a significant portion of the problem we're facing?

Dr. Alan Meier: I think the answer is both yes and no. Yes in the sense that there are clear areas where we can greatly reduce energy consumption, and I pointed them out. On the other hand, we have to be honest and understand that on the supply side, when we talk about new energy supplies, there are really only half a dozen kinds of energy supplies. We can tick them off on one hand practically.

On the demand side, to reduce energy consumption, it's an extraordinary complex collection of activities, and each activity has to be addressed individually. Some of them have tremendous savings potential simply with a technical fix. Sometimes we can even bypass some of the obstacles and save energy in ways that we might not expect. For example, we could try to make gas and electric ovens more energy efficient, but then we come around and invent a microwave oven that cooks in a completely different way. So there are completely new kinds of solutions to problems that we haven't even seen, and those will often yield the greatest savings. It's very difficult to figure out how to promote those.

In terms of telling the consumers what to do, yes, there will always be a list of the top 10 or top 20 most important measures, but the fact of the matter is that each household, each store, each factory will have an element of its own uniqueness that we have to take into account in order to save energy and to save money in those places.

Mr. Russ Hiebert: We've been talking in this committee about examples of communities that have taken radical steps in adopting new forms of energy consumption and sourcing. Can you provide us with any American examples of communities that have done an extraordinary job of integrating their energy systems?

Dr. Alan Meier: The city we like to point to is Portland, Oregon. It appears that they have successfully managed energy efficiency, city planning, and land use, while engineering an absolute reduction of carbon emissions over the last ten years or so. That's one example. My own home city of Berkeley, California, has done fairly well too in reducing its total carbon emissions. Is there a unified plan? I would say Portland has done a better job than most in looking at the whole picture. Portland always rises to the top.

Mr. Russ Hiebert: In Canada, we have a significant portion of our population in cities, but there's still a large portion of our population that's rural. Sometimes we seem to forget that rural folks are also interested in conserving electricity or energy. Most of the solutions are focused on cities. Is there an urban-rural divide here that needs to be addressed? Is it possible for rural communities, smaller communities, to take steps that would make sense from a cost-benefit analysis, resulting in less energy consumption or more savings? Or will that focus always be on urban centres?

● (1640)

Dr. Alan Meier: I should hope that the focus does not remain on the urban centres. One example that comes to mind is a small town in Oregon called Hood River, next to the Columbia River, where they decided that they would retrofit nearly all of their homes with insulation and weather stripping. In a small town—I believe this one has 10,000 people—you can undertake programs that you could never succeed with in a large city. In fact, you have some special tools in a small town that you might not have in a city. In the truly rural areas, there may be some other special cases, but to be honest I don't know that much about it.

Mr. Russ Hiebert: Dr. Meier, I have one last question, maybe the most difficult question of all. When you were talking about how it's harder to measure energy savings because of the very factors at stake, it got me wondering what success looks like in this field. Is success attained only when all of our energy sources are renewable ones? Is it marked by 50%, 30%, or 20% reduction? You state the benchmark. How will we know when we've gotten there—or is this just a problem that we will never completely solve?

Dr. Alan Meier: I think you answered your own question. We have to define success according to several different attributes. If the country as a whole has certain kinds of targets, you have to ask how it's doing according to those targets. At the same time, you have to ask how we're doing with respect to our economic viability. Is the path that we're proceeding on economically successful? Are we better off both economically and socially? There will never be a single number or a single way of defining success, but in the long run, we're aiming for a future that's both environmentally and economically sustainable. We always have to be asking ourselves how we're doing. Are we happier now? Are we richer, not just a dollars sense but in a social sense, than we were a few years ago?

The Chair: Mr. Regan.

Hon. Geoff Regan: Let me thank the witnesses for coming here today.

Before the meeting started, Dr. Meier, we overheard you saying that you might have worn shorts today. I can tell you that there aren't a lot of days in April in Ottawa when you can wear shorts, unfortunately, so we were all very jealous of that notion. Perhaps with global warming, we're moving more in that direction.

Some hon. members: Hear, hear!

Hon. Geoff Regan: That's bad news. Some are saying “hear, hear”. You see, the Conservatives are in favour of global warming, I guess.

I understand, Dr. Meier, first of all, that you specialize in how people use energy, particularly in buildings and transportation. I'd like to know what you think the impact would be of putting a price on carbon through, for instance, a cap-and-trade program. What would the impact be on buildings and transportation?

Dr. Alan Meier: First of all, I was wearing shorts until an hour ago. It's about 32 degrees outside, and the air quality is miserable, so maybe that will make you feel better about your situation.

You talked about carbon taxes. I'm not an economist; I can tell you, though, from my experience, that the most destructive thing in moving towards some sort of future is tremendous fluctuation in the prices. We've experienced that in the last couple of years, but you can already see that the carbon tax that's being proposed is going to be small compared to some of these fluctuations we've had. To some extent, until the very end, a lot of our economy was accommodating those higher prices without that much difficulty.

My hunch is that if there was a certainty about the carbon price so that people could plan on it, watch it, and know that it was going to be rolled in and increased incrementally over time, they could build the carbon price into their decisions and investments. You would probably find that they would hardly notice the difference. That's pure speculation, but at the same time, I've seen countries live with high energy prices and low energy prices. The Danes lived with very high energy prices and lived very well, thank you. I don't see it as a big problem as long as it is introduced with certainty.

● (1645)

Hon. Geoff Regan: Mr. Foster, would you like to respond to that question about cap and trade and carbon price?

Mr. David Foster: I agree that providing some level of market certainty is the critical issue that the economy needs to see. It also is true that putting a price on carbon will create at least an initial round of investment revenues that we can use, if we choose them wisely, to jump-start the bringing of certain renewable technologies and efficiency technologies up to the scale that makes them truly viable in a market economy. The benefits of putting a price on carbon eventually will ripple through the economy and come to be understood as a source of job creation.

The one area where I think we need to be extremely careful is in how we mesh the mechanics of the cap-and-trade system with the current models of trade that we have in the world today. Our organization has advocated strongly on behalf of its labour and environmental partners that we need to take advantage of a combination of the mechanisms currently under debate, whether those are allowance allocations, border adjustments, or really effective and enforceable international sectoral agreements, to make sure that we don't set up a system in which there are perverse incentives for energy-intensive industries in industrial countries to shut down and relocate their production to parts of the world that are on a different time schedule or simply choose not to participate in putting a price on carbon.

Alternatively, we need to make sure that we don't put our own energy-intensive industries at a fatal economic disadvantage when it comes time to import or exchange goods in energy-intensive commodity products from or with countries that are operating under different carbon pricing systems. Whether it's allowance allocations, border adjustments, or sectoral agreements, we need to balance that problem out; otherwise, we could create a bad set of results.

The Chair: Thank you, Mr. Foster and Mr. Regan.

We go now to Mr. Trost for five minutes.

Mr. Bradley Trost (Saskatoon—Humboldt, CPC): Thank you, Mr. Chair, and let me extend my appreciation to our guests for joining us electronically.

My first question will be to Dr. Meier. It is sort of about the law of unintended consequences.

You've noted that you're an expert on energy efficiency. There's the technological side of it. We all want cars that will run on one gallon of gas forever. We all want fridges, TVs, computers, iPods, you name it—whatever we have in our houses—to run on almost no electricity. But it has been noted that as things get more efficient, and people can have a fridge that's more efficient, all of a sudden you don't need just one fridge. It's every guy's dream: you have one fridge upstairs and the beer fridge in the basement, and lo and behold, you get an energy efficient 42-inch-screen plasma TV. Down in California, Monday night football becomes that much better. Up here, Saturday night hockey becomes that much better.

As we get more energy efficient, people have tended to put more and more appliances in their households. There was a law passed to make more water-efficient toilets—low-flush toilets. People then began to flush twice, or there was a bit of cross-border smuggling in some areas where they had them or didn't. So let me ask this question: As we get more efficient, how do you deal with the law of unintended consequences wherein this efficiency then creates more demand for more energy, and you're back using the same amount? I'm curious as to your comments on that.

● (1650)

Dr. Alan Meier: That's an important question, and I suppose I'd look at it in two ways. The first is that when people invest in a cost-effective energy efficiency measure, they actually are wealthier, if you look at the net value or the present value of their energy savings. That's what makes it cost-effective. The savings are greater than their investment, so they're wealthier, and they're going to spend that money one way or the other. Sometimes they're going to spend it on a second refrigerator or on a trip to the Caribbean, or if it's an efficient car, maybe they'll drive farther. In a sense, I actually want to embrace that. They have made an investment in efficiency, and they should, and they should be expected to. It's a perfectly normal thing. They're wealthier now. They should spend that money on certain kinds of services. It's a sign of the success of the efficiency measure.

The problem arises if we have a government or a utility or a community that has said okay, we're going to encourage you to make this efficiency measure, and then we're going to use those energy savings for some purpose. We're counting on them in some way, either to reduce our carbon emissions or to avoid building a power plant or another oil refinery or something like that. Then we have a problem, because the person now is not saving as much energy as expected. And these are your unintended consequences.

We just have to be very careful and make sure that we have taken into account the fact that, basically, people are going to be wealthier with these new conservation measures that are cost-effective. The only possible way to balance that is to say okay, not only are you going to be allowed to invest in this conservation measure, or we're going to encourage you to invest in it, but guess what: the price of energy is going to go up. So you'll be more reluctant to take your more efficient car and drive it farther after you have it, because you want to save money.

There are two parts to that. I think we should embrace the fact that people will spend some of their savings. The problem, though, is in terms of policies and counting on savings.

Mr. Bradley Trost: I'm glad to hear you say that it's good. It's the story of the industrial revolution: the more efficient use of energy creates more wealth, which creates more use of efficiencies.

You noted in the Juneau example that price determinants were a very strong signal to make people change their behaviour. Is there anything else, other than price, we can do as government regulators, consumers, or whatever? What is it that will drive people to more energy efficiency? Is it education of technical personnel? Is it housing standards? We have a bit of a cold weather climate, and for the record, Juneau is actually pretty warm compared to where I come from in Saskatchewan.

Dr. Alan Meier: I know that.

Mr. Bradley Trost: What else can we do? I drive a truck. A lot of my voters—I have a riding that's about one-third of the population, and most of the geography is rural—drive large vehicles, and they have to, for life. We don't want to raise the gas taxes. We don't want to do that. Other people may. Other than raising taxes and making people in some ways poorer, what else can we do to help people become more energy efficient?

Dr. Alan Meier: There are a couple of points that I just want to make about two energy crises that occurred in South America in the last few years. One was in Brazil, where they had a drought, and the country relies 100% on hydro. They had a drought, they realized they were going to run out of electricity, and the President of Brazil said everybody must use 20% less electricity than last year or they would be disconnected. At the same time, they had a tremendous energy conservation campaign and they actually made it a lot of fun. And the amazing thing is that within six weeks, the whole country of Brazil reduced its electricity use by 20% and the consumers actually never saw a price increase. Nobody got disconnected and the economy continued.

That's one example. So it doesn't always have to be a price signal to persuade people to move on. California had the same sort of thing.

Meanwhile, in Chile, they had an oil crisis—and it's still under way—because they were not getting enough natural gas from their neighbours in Argentina. They said they were going to raise the price of fuel, natural gas, and electricity in their country and keep that price very high, but they would use the social support services to refund and make sure that all the poor people are kept whole. They would see a higher price for fuel, but they would see greater subsidies elsewhere, so that the poor people never suffered an absolute loss in support. In those cases you could still drive your pickup and still see the high prices, but because of other reductions in costs elsewhere, you would have no change in your net income.

● (1655)

The Chair: Thank you, Mr. Trost. Your time is up. We have other questioners and we've gone well over time.

We will now go to Madam Bonsant for up to five minutes.

[*Translation*]

Ms. France Bonsant (Compton—Stanstead, BQ): Good day, sirs. We're giving the interpreters a good workout. I have a question for Mr. Meier.

The Governor of your home state, Mr. Schwarzenegger, is known as a staunch environmentalist. Does California have a fuel tax?

[*English*]

Dr. Alan Meier: Yes, we do, Madame.

[*Translation*]

Ms. France Bonsant: Are revenues from this tax invested in programs and R & D with a view to complying with the Kyoto Protocol?

[*English*]

Dr. Alan Meier: I'm not quite sure how to answer that, because I think it's a yes and no. We are now creating a system where some of the revenues from the fuel tax are going into research for energy efficiency. We have a parallel tax on electricity that is used to support energy efficiency research. But as far as the Kyoto Protocol goes, I don't know.

[*Translation*]

Ms. France Bonsant: You can't answer the question. I recall that when gas prices in the United States rose to $4 a gallon, people traded in their SUVs for smaller, more fuel-efficient vehicles. Mr. Bush once said that Americans were addicted to oil.

I was wondering if California had a program aimed at encouraging people to buy smaller vehicles or more fuel-efficient trucks, particularly since it's hot in California and with global warming, drought problems will only get worse.

I know that the state is making a considerable effort in this area. Is there a government program in place to encourage or assist people who want to trade in their gas guzzler for a smaller vehicle?

[*English*]

Dr. Alan Meier: Unfortunately, there is not to my knowledge a program in the state. However, there is a program being proposed in the upcoming energy legislation to get rid of the guzzlers and get people to trade the old energy inefficient cars for more fuel efficient cars. But the simple answer to your question is no.

[*Translation*]

Ms. France Bonsant: You live in an amazing, very sunny state. Has solar energy and geothermal energy technology been embraced for new home and new building construction?

Mr. Foster could also answer that question because this kind of technology is found around the world. Are people embracing new solar and geothermal energy technology?

[*English*]

Dr. Alan Meier: Mr. Foster, would you like to go first?

● (1700)

Mr. David Foster: Sure, I can speak briefly to that.

Primarily, on the state level there are currently solar programs that provide financing mechanisms and rebates for individual homeowners who install photovoltaic systems on their homes. And in talking to people in the solar industry itself, they really have lived and died on the extension of these state-based solar tax credits for the last number of years.

The ones I've spoken to certainly would prefer to see a system similar to what Germany adopted, a feed-in tariff that made the sale of electricity produced in individual home-based systems back to utilities financially attractive. And that would cause the expansion of home-based solar systems in the U.S. the same way it did in Germany.

As far as geothermal installations go, I'm not aware of any particular incentive programs to push those. I am aware of efforts to push that industry, though. And one of our partners, the steelworkers union, through one of their career development centres, has even created a program to teach people how to become geothermal heat pump installers in their own homes as part of an effort to preach energy efficiency and self-sufficiency.

Dr. Alan Meier: Perhaps I can add to that.

There are both federal and state incentives and programs to encourage energy efficiency and renewables in homes. California has led most of the United States with building codes that require energy-efficient homes, so many of the homes now built require practically no heating or cooling under normal operating systems. Homeowners can also get tax credits for various efficiency measures at both state and federal levels for investing in energy efficiency and solar.

Recently my own town of Berkeley, California, has undertaken a new scheme to help pay for and capitalize solar installations on roofs of homes in such a way that they're carried on your taxes. So if you sell the home the buyer of that home actually has to continue paying for the solar installation. But the result is that the owner of the home can get a very large solar installation for practically no initial capital investment.

The Chair: We go now to Mr. Allen, for up to five minutes.

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

Mr. Meier, I was sort of reflecting on your comments and the pie charts you talked about. You had one pie chart showing the supply side and the other showing the demand side. That was focused a little bit more on electricity usage, if I'm not mistaken. Do you just want to clarify that?

Dr. Alan Meier: Actually there were two of them on electricity, when I was talking about refrigerators versus electricity sources, and then motors. And then I went to fuel oil, which was for the tires.

Mr. Mike Allen: Do you have any comprehensive diagrams of these that would indicate the total energy supply, and on the other side, the total demand for all energy use, including oil and electricity?

And has there been any work done on another slice on the demand side, which would show the energy used by community, as opposed to end-use being motors, cars, and that type of thing?

Dr. Alan Meier: On the supply side, it's very easy, and you can go onto the web as I did a few days ago while preparing to examine Canada's supply mix, and that's not a problem.

The end-use side is a problem. I have no idea what it is for Canada, because I know it's not the same as the United States, and I am not aware of anybody who has made that kind of breakdown.

And then you asked about urban versus—

Mr. Mike Allen: Excuse me for interrupting, but do you know what the end-use is for the U.S.?

● (1705)

Dr. Alan Meier: The end use for which?

Mr. Mike Allen: For the United States.

Dr. Alan Meier: I was talking about an end-use breakdown, which says this much energy is used by refrigerators, this much is used for lighting, this much for aluminum production, and so on. That's what I mean by an end-use breakdown, but I think you meant something else.

Mr. Mike Allen: I did. I meant the end use by community, whether the—

Dr. Alan Meier: Okay, by community. To answer that question, no, there is not a good survey. However, I believe you could take some of the Canadian survey data and you could slice it that way and get a good sense of urban and rural residential use, and perhaps commercial use differs. I'm not absolutely sure, but it certainly could be done in the United States.

Mr. Mike Allen: Okay, thank you.

Mr. Foster, we were talking about your technology, and you were talking about the wind power and development you've had in that area, including the farmers and that type of thing. In terms of these community energy systems, what types of systems do you believe are the ones that hold the greatest potential for future energy supplies?

Maybe the second thing, and just as important, is using the wind power example. Have you found challenges in some of these wind power developments with respect to some of the new issues on setbacks and other types of things for these wind power installations that are close to homes and neighbourhoods?

Mr. David Foster: Yes, on your last point, there certainly do continue to be siting issues for various reasons. Either local residents or conservation advocates have found reasons that particular wind turbine farm sites have been unattractive to them. I would certainly say that by and large the siting for wind farms in the U.S. has been far, far less contentious than the siting for traditional fossil fuel or nuclear power plants has been. The contentious issues have been, by far, in the minority.

In terms of the technologies that appear to be the most promising, I think there is a debate among economic development specialists about what they would prefer seeing. On the one hand are the very large, high-megawatt wind farms that produce several hundred megawatts of power within a relatively small area in the form of a traditional power plant and then have significant transmission corridors built, attached to them, to bring wind power to big urban centres. On the other hand are some economic developers who have a vision of returning to a highly decentralized power system in which one really doesn't rely on these big development projects to the extent we have historically. They point to the very clear economic development benefits that have accrued across some rural communities where it has allowed traditional family farms to maintain agricultural production, with a side income from electric production.

I don't tend to have a strong feeling about either one of those. It seems clear to me that both of them provide necessary and important economic benefits. I can't see us in the U.S. getting to the scale of wind development needed to make an appreciable contribution to global warming solutions without there being very large, significant wind farms all up and down the Midwestern corridor, from the North Dakota-Canada border down to Texas. There, the potential for producing at least 100,000 megawatts of wind power I think is very, very strong.

I do recognize there is a real value to using small wind development, even individualized, home-based wind turbines, which are now available enough to provide some meaningful support for an individual rural home, especially when excess power produced during windy periods can be sold back to the grid and help make those economically attractive.

I like both models. I think there's a place for both models in the system. As the turbines themselves become more and more efficient, they of course produce power at a much more attractive rate.

● (1710)

The Chair: Thank you, Mr. Foster, and thank you, Mr. Allen.

We go now to Mr. Bagnell and, if he leaves time, to Mr. Regan.

Hon. Larry Bagnell (Yukon, Lib.): Thank you, Mr. Chair.

Could you talk about any schemes whereby a homeowner who's very enthusiastic about solar and wind and geothermal can sell energy back to utilities where they allow that?

That question is to whoever can answer it.

Mr. David Foster: That system is exactly what was set up in my state of Minnesota through the state-mandated community-based economic development program. This program required utilities in rural parts of the state to buy back the excess generation from individual wind turbines that were installed by small farmers. It really gave them the economic wherewithal to finance putting these projects in place.

So individual farmers started doing that. They would put up one, two, three wind turbines. They would continue farming all around the wind turbines themselves. The power sales that were guaranteed through state legislation provided a financing mechanism that allowed the installations to take place. The state has estimated that in some cases, farmers may earn as much as $100,000, once their capital costs have been paid back, from the sale of electricity.

That's essentially the same kind of mechanism that Germany has used. A feed-in tariff sparked the really significant growth of the solar industry in Germany, including the manufacturing of solar panels.

The Chair: Mr. Meier, did you have an answer as well?

Dr. Alan Meier: Yes.

I agree with everything you said. All I can say is that a house a block away from mine has a photovoltaic collector on its roof, and every time I walk past I can see the little display outside that shows how much electricity the house is using and how much it's feeding into the grid. It's happening fairly frequently now in California.

I might point out that I saw a similar kind of installation in rural Austria, where a few farms worked together to create a generator based on, I guess, wood waste. All the farmers contributed some of their wood waste. They generated electricity for themselves, for the nearby farms, and then exported—that is, sold—the surplus electricity. It turned out to be a very effective arrangement there, and provided that group of farmers with a second source of income.

Hon. Larry Bagnell: How widespread is the use of methane capture from landfills in Europe and the United States?

Dr. Alan Meier: I can't answer that, because I don't know.

The Chair: Mr. Foster.

Mr. David Foster: Likewise; I am uncertain about the extent of methane capture.

I certainly have heard the District Energy St. Paul experts talk about methane as something that Europeans are much more interested in than I've heard developed here in the United States. But again, I have no specific knowledge about that.

The Chair: Thank you.

Mr. Regan, you have about a minute and a half.

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

Boy, I don't really have much time for this.

I understand that the U.S., in its stimulus package, announced that it plans to spend $76 billion on renewable energy and energy efficiency technology. This is about six times per capita more than the government here plans to spend in this area. It's also clear that the government here intends to put most of its efforts in the area of carbon capture and sequestration.

Are we going down the wrong road? Are we missing out on the opportunity to invest in and create thousands of green energy jobs? What are your thoughts on this?

I guess I'll start with Dr. Meier.

● (1715)

Dr. Alan Meier: You know what? I'll be frank. I think carbon capture and sequestration is a tailpipe solution that ignores.... Basically, it tries to avoid doing anything serious to the rest of the economy. It's also very expensive and doesn't create many jobs.

I'll leave the rest of the time to David Foster.

Mr. David Foster: I think the world needs to know about whether or not carbon capture sequestration works or doesn't work. For the global economy that question is especially important, given that China, for the last number of years, has been building and commissioning a coal-fired power plant every single week of every year. Consequently, knowing if there's a role to play in stopping global warming with CCS, even if it were for an interim period of time, is important.

In terms of the fundamental transformation of our economy to a clean energy economy that's taking place, it seems to me there's no question that the existing technologies in wind, solar, geothermal, and biomass are the four big pillars that we ought to be heavily investing in, and that the countries that got the jump on us in North America with those technologies in Europe and Japan are enjoying some of the economic benefits of that today.

I think the faster we get on board with bringing to scale those kinds of technologies, the sooner we will be able to appreciate the economic benefits in revitalizing our own economies. I think it was an important step that last year the U.S. did two things. Number one, we brought more wind electricity online than any other country in the world. We also brought more wind electricity online than any other form of power in the U.S. So there was more wind-generated electricity built, installed, and commissioned than there was natural gas for 2008. We really are starting to see those direct economic benefits. Those are the concentration areas, along with the efficiency that Dr. Meier talked about so much today already. That's where the big investments need to be made. That's where the job creation lies.

The Chair: Thank you, Mr. Foster. Thank you, Mr. Regan.

Mr. Anderson, if you would take about two minutes, then I'll go to Mr. Cullen for about two minutes. We need a little bit of time at the end of the meeting to discuss what we're going to do with the meetings for next Tuesday and Thursday, and actually Thursday morning's meeting as well, to some extent.

Mr. Anderson, go ahead for about two minutes.

Mr. David Anderson: It's my privilege, Mr. Chair, to share my time with Mr. Cullen.

I had a question on one of the last comments you made, Mr. Foster. Did the wind expansion take place last year prior to this administration coming in? You were talking about the huge wind expansion that took place last year.

Mr. David Foster: Yes, it did, and it was largely driven by the fact that over the last half dozen years or so, 28 individual states in the U.S. passed their own renewable electricity standards. That's roughly the equivalent of passing a federal 12% standard, I think it is. As a result of that, a growing set of markets was created at the state level that brought in a lot of investment in wind-generated electricity, and that was reflected in a big rise in employment in the industry, the opening up of at least a dozen new factories last year producing parts or assemblage of wind turbines here in the U.S. It really created the basis—

Mr. David Anderson: I need to cut you off there, because I have only two minutes and I have one other question that's important to me, because I come from a province where we have a monopoly utility provider.

You mentioned California and Minnesota. What are the electrical rates that people are getting paid in order to return energy to the grid? What rates do they need compared to the energy cost that they're being charged? Is there a formula that they need in order to return a certain percentage back to the grid?

I guess I'm not being clear on this. If I sell to my energy provider, what rate do I need in order to make my business viable, compared to the cost that the utility is charging me?

● (1720)

The Chair: Who would like to answer that first?

Mr. David Foster: For the CBED program that I mentioned in Minnesota, I couldn't give you the exact rate on that, but I believe it's the sale price that the utility provides plus some incentive payment. We can get you that information. I think that's something that I can find readily available and send to your committee staff.

Dr. Alan Meier: In the California case, they literally reversed the meter. They have the meter going backwards, so what you get paid is what you pay the utility for the electricity. Does that make sense?

Mr. David Anderson: One of you is getting 100%, basically, and it sounds like the other state is actually giving some sort of premium for that energy. Is that correct, as far as you know?

If we can get the information, that would be great.

Dr. Alan Meier: I think so.

The Chair: If you could get that, it would be very helpful.

Thank you very much, gentlemen.

Mr. Cullen, for just a very short question.

Mr. Nathan Cullen: Thank you, Chair, and thank you to Mr. Anderson.

I have a question to Mr. Meier about the recent Supreme Court decisions and the EPA coming down on the side to allow the EPA to regulate carbon emissions, in particular, and the effect that will have on Canada-U.S. relations with the Obama administration, driven by your state contemplating the weighting of fuels by their carbon intensity. Should there be a preoccupation, on this side of the border, of Washington being serious about weighting fossil fuels differently, based on the amount of carbon contained in their production?

Dr. Alan Meier: I'm afraid to answer that question, because I just don't know enough; I don't want to mislead you.

The Chair: Mr. Foster, did you have an answer?

Mr. David Foster: Yes. The one point I would make is that the Environmental Protection Agency announced yesterday, in response to the U.S. Supreme Court ruling of some years ago, that they were fully prepared to regulate greenhouse gases, including tailpipe emissions as one of those.

The Chair: Mr. Cullen, do you have a very short question?

Mr. Nathan Cullen: Mr. Foster, I wonder what Canada's participation has been in the discussion around Washington on these low carbon standards that are being proposed in the Waxman climate change bill. Does Canada have a presence or is it an observer? Is it part of the discussion, from your perspective?

Mr. David Foster: I'm simply not in a position to be able to answer that. I don't know.

Dr. Alan Meier: The reason I'm reluctant is the people who actually conceived the low carbon fuel standard work about five metres away from where I'm sitting. If I could scurry away and talk to them, I might be able to answer your question, but I don't think they're in today, so I'll avoid answering.

The Chair: Thank you very much to both of you, Mr. Foster and Mr. Meier, for being here by video conference with us. We do appreciate very much the information you've given us, and we're looking forward, Mr. Foster, to the information you'll be sending us.

We will continue with the meeting very briefly. We only have about five minutes left.

I just want to run this by the committee to see if it seems to make sense. On Thursday morning, we have the meeting by video conference. Can we take the last half hour or so of that meeting to deal with future business?

In the meantime, can we set up for Tuesday of next week? We should be setting something up. Can we set up where we would start by dealing with Bill S-3, which is the bill that's been sent to this committee from the Senate? Then, if we need more discussion on future business in the last part of that meeting, we could discuss future business again, possibly the draft report that we hope will be available by the fifth.

Next Thursday, if we can plan something to change it, that is strictly up to you. We could fall back on Bill S-3 for next Thursday, but we would start on Tuesday with the officials on Bill S-3, which is the traditional way of starting with reviewing legislation.

That is my thought. I'd appreciate your input so we know where to go.

Mr. Cullen.

● (1725)

Mr. Nathan Cullen: Thanks, Chair.

Just very briefly, then, if you're looking to go for Thursday for other witnesses outside of officials, then you'll be needing to hear from our offices almost right away.

The Chair: Absolutely. That would be helpful.

Mr. Nathan Cullen: I know I wasn't here for the earlier part of the meeting, but I want to just express some concern about the process of how the minister arrives on Thursday. It seems to me that the committee has to be involved in some of those decisions in terms of the timing and such, because there are all sorts of parts that are moving around. I recognize that a vote was taken and such, but it's a bit worrisome. That's a relatively important meeting, and to have it scheduled and then have to go about it backwards, as opposed to planning it out and having some sort of awareness of what we're going to be asking, and cramming the estimates, to my understanding, with the nuclear safety piece into one hour is—

The Chair: Mr. Cullen, we did have a little bit of discussion of this earlier. I think you'll find, if you review the information from previous meetings—the Hansard or the minutes in the case of an in camera meeting—that is what this committee decided: to have the minister as soon as possible. This was the earliest possible date. I believe I was actually given instructions—and if I'm wrong I will apologize, but we'll get that information—to arrange that and just make it happen as soon as the minister gave an indication that she was available. So I really hope I'm operating the way I was instructed by the committee.

Mr. Nathan Cullen: I wasn't looking to cast aspersions. In particular, I didn't remember the idea of combining those two issues into one meeting.

The Chair: That was decided too. I'll discuss it with the clerk.

The question of the amount of time I understand. That wasn't decided. That's what the minister can provide. She's been before this committee, I think, twice already. Was it just once? That I can't comment on.

We'll get that background information, and I'll have the clerk send it out so you can see what was determined. As chair, I fully understand. I work on behalf of all members of the committee, and I sincerely try to do that.

Madame Brunelle.

[*Translation*]

Ms. Paule Brunelle: Speaking of the minister's visit, I'm unhappy about two things—not about the minister coming, of course—but first, because only one hour has been set aside for this meeting. That's too little time, in my opinion, to discuss important issues.

Secondly, I'm unhappy that we're being forced...I understand why we have to change the time of the meeting, but since I was scheduled to deliver a speech in the House at that time, it's problem for me. However, to add a third hour of committee meeting on the same day, without consulting with members, I find that a bit much to take.

Obviously, our workload is such that arranging our schedules can be a problem. Some appointments had already been scheduled. It's hard for me to understand why the minister cannot stay for a least two hours. We've been waiting for weeks and surely arrangements could have been made to meet with us at a convenient time.

[*English*]

The Chair: I can't speak to that.

Mr. Anderson I think had indicated, and then Mr. Regan

Mr. David Anderson: Typically ministers come for one hour, whether there's a meeting for one hour or two hours. I don't think I've been at a meeting in the last few years that a minister has attended—whether it's been the agriculture minister or the natural resources minister, or the ministers of the previous government—for more than an hour at a time.

The Chair: That certainly has become, over the last five years or so, kind of standard, I think.

● (1730)

Hon. Geoff Regan: Mr. Chairman, it certainly wasn't my experience. I remember going for two hours as a minister before the fisheries and oceans committee, and I can only presume that it happened elsewhere as well.

The Chair: It certainly did before, but....

Hon. Geoff Regan: At any rate, we passed a motion to have the minister here to talk about AECL. It's also important to have her here on the estimates. But to have only one hour in which to do both I think is a bit of a stretch.

Mr. Chairman, I know that you are desirous of acting in a non-partisan fashion in your chairmanship role, and I would urge that you keep that in mind, but I think we can see here that the majority of the committee does not feel that Thursday is the day we want to hear from the minister. Therefore, I move that we cancel Thursday afternoon's meeting, and ask the minister to come in the month of May.

The Chair: Mr. Regan, first of all, I don't know whether the minister would be able to come in May. You have to understand that. We have dealt with this issue already through a motion. I will not come back to the same motion again, certainly not at the same meeting.

Hon. Geoff Regan: The motion wasn't quite the same. This motion is to ask the minister to come in the month of May. It's not telling her to come. It's not determining what her answer is ahead of time. It is asking her to come in May, not on Thursday, which would require cancelling a meeting. It isn't the same motion. Moreover, at the time, members were not all here, and the member from the NDP who was here was not checked into the meeting. I didn't realize that at the time.

The Chair: We have a point of order.

Hon. Geoff Regan: Clearly, this was done—

The Chair: We have a point of order.

Hon. Geoff Regan: Mr. Chairman, we're on a point of order, I think.

The Chair: Mr. Regan, I will go back to you.

Mr. Anderson.

Mr. David Anderson: The point of order was that everyone had the opportunity to be here. We are past the beginning point of the meeting, so it cannot be sustained.

The Chair: We have to end the meeting.

Mr. Regan.

Hon. Geoff Regan: The point is that this was done in an arbitrary fashion. The chairman acted without consulting any of the members on the opposition side about having the minister here on Thursday. It's clear now that the majority of the committee does not want this to proceed, and you're ignoring the will of the committee.

The Chair: Mr. Regan, if you want to bring this back to the half hour or so, or longer if you want, on Thursday morning when we deal with future business, I'll be happy to hear it. It probably wouldn't make much difference, if you're going to cancel the minister's appearance, whether you do it then or now. But I will not revisit the same motion. The meeting time is up. We can deal with it next time if you would like. It's entirely up to you.

Hon. Geoff Regan: Thank you.

The Chair: The meeting stands adjourned to the call of the chair.

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

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