



ISSN 1499-3783

Legislative Assembly
of Ontario
Second Session, 37th Parliament

Assemblée législative
de l'Ontario
Deuxième session, 37^e législature

**Official Report
of Debates
(Hansard)**

Thursday 30 August 2001

**Journal
des débats
(Hansard)**

Jeudi 30 août 2001

**Select committee on
alternative fuel sources**

**Comité spécial des sources
de carburants de remplacement**

Hansard on the Internet

Hansard and other documents of the Legislative Assembly can be on your personal computer within hours after each sitting. The address is:

<http://www.ontla.on.ca/>

Index inquiries

Reference to a cumulative index of previous issues may be obtained by calling the Hansard Reporting Service indexing staff at 416-325-7410 or 325-3708.

Copies of Hansard

Information regarding purchase of copies of Hansard may be obtained from Publications Ontario, Management Board Secretariat, 50 Grosvenor Street, Toronto, Ontario, M7A 1N8. Phone 416-326-5310, 326-5311 or toll-free 1-800-668-9938.

Le Journal des débats sur Internet

L'adresse pour faire paraître sur votre ordinateur personnel le Journal et d'autres documents de l'Assemblée législative en quelques heures seulement après la séance est :

Renseignements sur l'index

Adressez vos questions portant sur des numéros précédents du Journal des débats au personnel de l'index, qui vous fourniront des références aux pages dans l'index cumulatif, en composant le 416-325-7410 ou le 325-3708.

Exemplaires du Journal

Pour des exemplaires, veuillez prendre contact avec Publications Ontario, Secrétariat du Conseil de gestion, 50 rue Grosvenor, Toronto (Ontario) M7A 1N8. Par téléphone : 416-326-5310, 326-5311, ou sans frais : 1-800-668-9938.

Hansard Reporting and Interpretation Services
3330 Whitney Block, 99 Wellesley St W
Toronto ON M7A 1A2
Telephone 416-325-7400; fax 416-325-7430
Published by the Legislative Assembly of Ontario



Service du Journal des débats et d'interprétation
3330 Édifice Whitney ; 99, rue Wellesley ouest
Toronto ON M7A 1A2
Téléphone, 416-325-7400 ; télécopieur, 416-325-7430
Publié par l'Assemblée législative de l'Ontario

LEGISLATIVE ASSEMBLY OF ONTARIO

**SELECT COMMITTEE ON
ALTERNATIVE FUEL SOURCES**

Thursday 30 August 2001

ASSEMBLÉE LÉGISLATIVE DE L'ONTARIO

**COMITÉ SPÉCIAL DES SOURCES
DE CARBURANTS DE REMPLACEMENT**

Jeudi 30 août 2001

The committee met at 0931 in room 151.

The Chair (Mr Doug Galt): We'll call to order the select committee on alternate fuels. We're a little short on members right now.

I'm told that grandfathers have bragging rights and, as of seven and a half hours ago, I became a grandfather. Our daughter Laurel delivered a baby girl, Catherine Maeve.

Applause.

The Chair: Thank you very much. I didn't do anything; it was very easy for me.

FEEL GOOD CARS INC

The Chair: Our first delegate is from Feel Good Cars. We really appreciate your coming on Monday with a car to the Legislature. My apologies that some of our members are not here—they will be shortly—but for Hansard and for presentations we'd like to stay on time, so if you'd like to come forward at this time.

Welcome. For Hansard, please state your names as we begin. There's 20 minutes for presentation, and what's left over from your presentation within that 20 minutes we'll divide between the three caucuses for questions.

Mr Gary Rewald: Honourable Chair, members of this committee, my name is Gary Rewald. I'm the CFO and COO of Feel Good Cars Inc. With me is Marek Warunkiewicz, the VP of marketing, and Barbara Disman, our director of promotions.

As an aside, I'm sure you have seen and will continue to view many PowerPoint presentations. We have chosen not to present in PowerPoint. We have reality which was parked outside this Legislature on Monday. I hope you had a chance to look it over.

It is with great pleasure that we find ourselves presenting at this committee. We believe that it is essential that all of us, and especially those in positions of leadership in government and Legislature, acknowledge that the energy sources that we all take for granted are limited in nature and, in many cases, responsible for air and water pollution through the emission of toxic substances when using such energy resources.

As you're all aware, Toronto recorded the earliest smog alert days on record this year. This government has stated many times that it takes a stand of accountability, promoting partnerships and participation with the private sector to address the issues that affect us all. We are

pleased to see this reflected in the formation of committees such as this to address the concerns of the general public with regards to issues such as air and water pollution and to hear submissions from those actively involved in addressing these areas of concern.

It is our contention that the search for alternative fuel sources has been stepped up in recent years as a direct result of the concerns of regular citizens about the pollution of our natural resources. Alternative fuel research is thus directly related to attempts to reduce toxic emissions, clean up our environment and reduce health risks to each one of us in the general population.

We wish to address one area of alternative fuel and how this can be used today to make a start in the fight against pollution and contribute to the development of alternative fuel sources.

Without doubt, one of the world's greatest contributors to poor air quality—to toxic emissions—is the automobile. An average gas-powered car produces 657 pounds of regulated tailpipe emissions annually. Air pollution is rated as the fourth cause of death in Toronto. It is estimated that one in three air-pollution-related deaths in Toronto is linked to carbon monoxide and that 250 infants are hospitalized annually in Toronto due to air pollution. In the downtown cores of cities across the world, urban vehicular congestion has been shown to contribute significantly to a deterioration of general health. Who of us has not seen pictures of traffic police wearing masks to protect them from the toxic fumes emitted from vehicles?

Indeed, to their credit, the automobile companies have spent billions of dollars trying to make their vehicles as fuel-efficient as possible and as non-polluting as possible. But, as we all know, despite these efforts, the sheer volume of vehicles on our roads, especially in our larger cities and downtown cores, continues to contribute to the air pollution in ever-increasing amounts. Particularly in North America, where we are urged to drive bigger and more powerful cars, where ownership of an SUV is considered a status symbol, the contribution of the automobile to poor air quality is significant. Across Europe, cities are banning vehicles from parts of their downtown core to protect historical and cultural artifacts from the ravages of air pollution caused by automobiles.

To address the problem, there needs to be a concerted effort by both government and the private sector. The solution is obvious: reduce the number of polluting

vehicles on the roads, especially in the congested urban cores of our cities and towns. Produce more zero-emission vehicles.

Feel Good Cars was started as one person's attempt to in a small way make his contribution to toxic emission reduction. Ian Clifford, the president of Feel Good Cars, tried unsuccessfully to buy an electric vehicle from the major automobile manufacturers. It was not a matter of money; it was a matter of just no supply. Finally he managed to purchase an original 1959 Henney electric Renault Dauphine, one of a very small number that were sold at the time by the Renault company. From this small start, Feel Good Cars is today the first company in Canada to offer a street legal, ready-to-travel electric vehicle capable of speeds up to 110 km, with an 80-kilometre range. To recharge, you merely plug the vehicle into a normal household outlet overnight. No gas, no noise, no emissions.

But is the production of a limited number of these electric vehicles enough to really address the problems of air pollution? Of course not, but it is a start, and it was the start of a much larger project to put more electric vehicles on to our roads, thereby reducing toxic emissions. For example, in a province like Alberta, where 96% of electric power is generated by fossil fuels, the use of electric vehicles will result in a 75% to 85% reduction in tailpipe emissions per vehicle. In provinces where power is generated by hydroelectric sources, the resulting decrease in tailpipe emissions per vehicle is between 98% and 99%. Average reduction across Canada with a mix of power sources is about 75% per vehicle.

In January of this year, Feel Good Cars commissioned a report on the attitudes of Canadians toward electric vehicles. The executive summary of that report is included in our submission and in the folders presented to the committee members. The results of this survey are very interesting and indicate that all Canadians recognize the environmental impact of the current internal combustion engine, and that in all the cities surveyed, over 50% of respondents would purchase an electric vehicle. So why have we not seen electric vehicles on our roads?

There are many reasons, ranging from, "Battery technology is not advanced enough to provide sufficient power for long-distance driving," to "Gas engines are still relatively inexpensive to run," though the fuel efficiency of a gas-powered car can be as low as 12% versus an electric vehicle's efficiency in excess of 80%. In our opinion, the reality is all of these and one important other: there needs to be a mindset shift of the average consumer to an understanding of the applications for electric vehicles.

In Europe, governments understood the need to create a new vehicle classification to deal with short-range, low-speed urban core driving. As such, they introduced the concept of the low-speed vehicle or, as it is known in some countries, the quadricycle.

In the United States, the low-speed vehicle classification was enacted in 1998 in order to address a growing phenomenon: the use of golf carts on public roads. At the

time there were over half a million golf carts used on public roads. It is estimated that a further 150,000 per annum are sold for on-road use. To date, 32 states have adopted legislation to certify and license and control vehicles in this category.

In Canada, the federal government enacted regulations on August 16, 2000, creating a new on-road vehicle class for low-speed vehicles, or LSVs. An important note: in Canada an LSV has to be zero emission, ie, electric. To date, not a single province has followed through with enacting legislation to enable the use of such vehicles on our roads. I am concerned that this government is not moving quickly enough to enact legislation to enable the use of alternative fuel sources. I refer specifically to the document *Listening to Ontario: Ontario Smart Growth, A Summary of Consultations*, issued on August 20, 2001. Nowhere in this document is the issue of federally mandated zero-emission vehicles, and specifically electric low-speed vehicles, mentioned as an effective method to reduce tailpipe emissions.

0940

Electric LSVs have many applications in our society: gated communities, resorts, small towns, disabled vehicles, airports, large campuses, downtown urban core driving, parking enforcement, and local delivery. LSVs are not intended to replace every vehicle on the road today, but with each delivery of a vehicle we will be reducing toxic emissions into our atmosphere.

Feel Good industries is currently gearing up to manufacture in Canada and to distribute across North America highly efficient, high-quality electric low-speed vehicles. In order to do this, we need immediate support and action from this government, the federal government and all the private company partners of industry.

By action and support, I'm referring to the highest priority being given to enact LSV legislation in this and all the other provinces: the provision of incentives to purchasers of electric vehicles, such as free downtown parking; the setting up of infrastructure such as pay-per-use charging stations in convenient locations; tax incentives to both manufacturers and consumers; specific research and development incentives to researchers and manufacturers; specific export assistance; specific cash and resource incentives.

Above all, we need access via governmental support to the funding sources within the public and private capital markets. I was extremely shocked to hear from a number of labour-sponsored fund managers that they did not care about the creation of jobs in this or other provinces. "We need to produce high returns, not jobs" was a statement made, not once, but many times to me.

Ontario needs to be strong about its commitment to clean air and toxic emissions. Ontario should look to the initiatives undertaken in the United States, particularly in California, where the California Air Resources Board took a very strong stand against auto manufacturers, forcing them to commit to the production of quantities of zero-emission vehicles. This program was started in 1990 by CARB and is a program intended to reduce vehicle

emissions to zero by the gradual introduction of zero-emission vehicles. In September 2000, after hearing extensive testimony and public comment, and despite extensive and expensive lobbying by the auto manufacturers, CARB adopted a resolution affirming that the ZEV program was essential to the state's long-term air strategy. Other resolutions directed their staff to propose modifications to the ZEV mandate to assure a successful and sustainable long-term ZEV market. Although Ontario is a province where automobile manufacturing is a strong sector of industry, we are over 10 years behind states like California in demanding that we have the right to clean air.

We certainly are not here to berate the auto companies, but perhaps it is time that this government takes the stand that the auto companies, like the cigarette companies, must take responsibility for the effects of their products on human health. We should demand that clean technologies be made available to Ontarians and indeed to the rest of Canada as soon as possible.

Our research indicates that an automotive fuel cell engine is still six to eight years away. LSVs offer a solution in specific applications immediately. The technology is here, proven, and will only be further enhanced by developments in alternative energy sources. As and when enhanced battery and fuel cell technology becomes commercially available, LSVs will be able to take advantage of these technologies to further enhance the products that will already be on our roads.

By addressing this LSV issue, by enacting the legislation, by supporting initiatives of companies such as ours, by providing the support necessary to begin such initiatives, the Ontario government can make Ontario the centre of development of these alternative power technology developments and a world leader in the development and production of zero-emission vehicles using the cleanest of fuels available today—electricity.

It is a small step forward, but a necessary one and one that has to be taken now.

The Chair: Thank you very much for the presentation. Again, thank you for bringing your electric vehicle. A great name, your Feel Good Cars. We'll start with the official opposition. We have about two minutes per caucus for questions.

Mr Ernie Parsons (Prince Edward-Hastings): Thank you for coming. I personally believe, as an engineer, that your approach makes a lot of sense in an urban area. But the sense I have is that the limiting factor in the electric car at this moment is the battery: 80 kilometres' duration scares some people. Have you any sense of the speed at which the technology is changing that would provide an improved battery, increased storage, longer battery life?

Mr Marek Warunkiewicz: Battery technology hasn't evolved a lot because there hasn't been a need to. It is evolving now. The production of our model of cars is really a compromise between affordability and usability. Our survey has shown that 85% of Canadians drive 70 kilometres or less on their daily commute, so we chose a

set of batteries that will give them pretty much what they usually do on a day-to-day basis. Battery technology is evolving but, for example, to get a kind of battery that will enable us to go 120 kilometres, the battery pack right now might be up to \$50,000 in new costs, which is totally unaffordable economically.

At this point we are looking into alternative methods that would increase the range up to 120 kilometres, possibly 200 kilometres. But battery technology is evolving; it is just a cost issue right now.

Mr Parsons: But calculators at one time cost \$1,000; now they cost \$3 or \$4.

Mr Warunkiewicz: Exactly.

Mr Parsons: If you can get that initial shot to get the development done—

Mr Warunkiewicz: For example, the batteries that we're using right now cost us \$5,000 a pack for a whole set last year. Now it's about \$1,500 for a whole set.

Mr Rewald: I'll also address that issue. We're not developing batteries. We're relying on others to do that. The fuel cell technologies and the fuel cell industry is the area, I think, that most people are looking at to bring us those kinds of technologies as quickly as possible.

However, as I said in our presentation, the research has shown that those technologies are seven to eight years away before they have a full automotive battery that's available to us. The low-speed vehicle is not intended to replace long-range driving. It is supposed to be urban core driving.

Ms Marilyn Churley (Toronto-Danforth): Thank you very much. Is this the car that made it into the newspaper the other day?

The Chair: And guess who was driving.

Ms Churley: I think it was me.

Mr Rewald: No. The car you were driving was the Ford TH!NK product.

Ms Churley: A different one.

Mr Rewald: Yes, unfortunately.

Ms Churley: I've driven electric cars a couple of times and one of the striking things is that it is totally quiet. It takes a bit of getting used to. I just wanted to ask a question about city use of the car in terms of its pickup, its ability to gather speed and keep up with the traffic. Are there any problems with that?

Mr Rewald: No, but in the low-speed vehicle classification requirements there is a requirement that the low-speed vehicle, as an electric vehicle, must have a top speed of at least 32 kilometres per hour, and there is a requirement for a 0-to-10 kilometres pickup that we have to comply with. So yes, we will comply with all those things that have been set by standards in Europe and in the US.

In the current vehicle, the Dauphine, there is no problem in reaching pickup speeds anywhere, even getting on to the highway. The current Renault Dauphine that is prototyped and that is driving around and the original Henney Kilowatt drives on the highway with no problem at all.

Ms Churley: What about the batteries? I assume that there is innovative work going on all the time to improve the efficiency of the batteries. I assume that there are new kinds of batteries being developed for this with different kinds of chemicals. I'm thinking about the disposal and issues. These are huge batteries.

Mr Warunkiewicz: The battery is one of the most recycled products that society has produced. I think the recycle rate is close to 95% of the entire battery which is recycled into a new battery, with a minimum use of power. So they're very recycled. And yes, there is continuous research being done to improve battery life and storage and recharging capacities. The biggest problem with the traditional batteries that exist right now is that you can't charge them quickly enough. As you're driving, you're able to put 10% back in through a braking system that's been developed. The battery can take a lot more but it can't take it in one quick charge. They're developing batteries on a number of levels. One is how to recharge it as you're driving and also to increase the range of the battery.

But as we mentioned earlier, it's really a matter of cost-effectiveness. Nobody would pay \$50,000 for a battery pack that can get them 40 kilometres further, so we're looking at other methods right now to increase the range of the car.

0950

Mr John Hastings (Etobicoke North): Thank you, ladies and gentlemen. I'm most interested in your comment on what looks like page 4, mid-paragraph, that you were shocked about labour-sponsored funds, or people from the investment community. I don't know why you would be, because their philosophy is ROI. There are a few out there, I guess, that would be a little more interested beyond ROI and job creation.

I have two questions for you: (1) what is your philosophy, your expectation of the capital markets in terms of alternative fuels; and (2) since you're dealing with such fragmentation in the fuel cell industry and in electric cars, why don't some of you get together and create a mini-conglomerate to deal with the capital markets and to advance the technology?

I'll tell you why. I was at a company in Orillia about a week ago today. I drove an electric car that's based on a magnesium-type fuel cell. But they also showed me something very interesting. This company had purchased 15 Ford vehicles at auction, pickup trucks, that had been made by the Ford Motor Co. They had gotten, in turn, a \$50-million grant from the Department of Energy in Washington, but they bought these vehicles, I suspect, for about 10 cents on the dollar for what Ford had put in.

There are your problems when you deal with this stuff. On the one hand, are you expecting grants from this committee, or are you expecting a better way of prodding the capital markets?

Mr Rewald: I can address that in two ways. First of all, with regard to my comment regarding the labour-sponsored funds or the capital markets, in times that we are facing right now, where the funds and the VCs have

seen such huge losses in terms of the high-tech industry, when companies such as ours come about with real business plans, with jobs, with opportunities and with old-economy style, for somebody to tell me, "We're not interested in jobs but we're interested in returns," when we can provide the returns, is astounding.

Second, with regard to the vehicles, I think you made a point that the vehicles were subsidized by a grant from the US Department of Energy. That kind of defeats the object of having the plant or the R&D being done in Canada. The US government obviously has taken a step toward making sure this does happen by providing grants and initiatives to help these companies.

The last point, addressing what my philosophy will be from this particular committee, it is that, as I stated, in August 2000 legislation was enacted at the federal level to permit low-speed vehicles in this country and not one province has yet enacted legislation to bring that to reality. Right now we have vehicles available that cannot be driven on the roads that should be allowed on the roads, that can help us reduce toxic emissions and that can help us develop a strategy, together with fuel cell companies. I cannot at this point in time accept the fuel cell battery and put this vehicle on the road, because it is not legal. So where do I test it? How do I test it in real-life situations?

The Chair: An excellent way to wind up the presentation. Our time has run out. Thank you very much for coming forward. Certainly electricity is something that sounds like a way to the future, so we appreciate your presentation.

FUELMAKER CORP

The Chair: Our next delegation is FuelMaker. I'll allow you to introduce yourself and your last name, vice-president sales and marketing, international sales. I'm sure I'll pronounce it incorrectly.

Mr Mario Pirraglia: You can give it a try.

The Chair: Pirraglia?

Mr Pirraglia: That's perfect.

The Chair: Maybe I'm improving my pronunciation of different names. Welcome. You have 20 minutes for your presentation.

By the way, the microphone comes on automatically, but if you want to say something quietly to someone, there's a mute button there. Otherwise, they'll look after getting it on and off for you.

Mr Pirraglia: Thank you very much for allowing me to come here and talk to you today. I am the vice-president of sales and marketing for FuelMaker Corp. I have a PowerPoint presentation. We do have to prop Microsoft up a little, so unfortunately we have this PowerPoint.

The Chair: We should upgrade our committee rooms to automatically handle that very readily. There's some updating required in here.

Mr Pirraglia: Technology sometimes is slow.

What I'd like to do is take you through a little bit about our company today—who we are, what we do and where we came from. The gist of this presentation is that we can refuel anything, anywhere, with natural gas.

FuelMaker is a Canadian company. We're based out of Toronto. We have 60-plus employees. Most of them are engineers. We are a high-tech company and we are developing and we do have on the market natural gas refuelling systems. We now also have our first hydrogen refuelling system, which is located down in California, refuelling a Honda that's running on a fuel cell. We have 65 dealers throughout the world and in Ontario we have our own dealership, run out of our company, for sales and service.

FuelMaker was formed in 1989. Our original product was designed for the residential market; it was designed to have a natural gas refuelling system at home. As a matter of fact, I have one at home and all my cars run on natural gas. My son's car has never used gasoline, but dad pays for the gas. So that was our original market; unfortunately, that market was not ready for us. It just wasn't there yet, so we had a choice: we could go out of business or we could redevelop our product for the present, existing markets. What we found were three markets that we could go after: (1) the fleet market, (2) the forklift market, and (3) the ice arena market. We'll talk about those a little more as we go on.

Within the last 12 years, we have over 8,000 of our units throughout the world, the majority in North America. We are recognized worldwide as the leader in natural gas refuelling. There are probably about 12,000 refuelling stations throughout the world and we have 8,000 of those. We are convenient, and we've designed our systems today for small-to-medium-sized fleets, forklifts, ice arenas. We still do residential applications.

FuelMaker can provide economical refuelling where the public infrastructure isn't available. I looked at the map of Toronto as it pertains to natural gas refuelling stations and there are over 70 refuelling stations in Ontario. We're probably one of the best places in North America to obtain natural gas. Unfortunately, there are holes. We can come in and help fill those gaps with convenient, on-site natural gas refuelling. Many times we'll talk to a fleet manager and we'll say, "Hey, what about natural gas?" and he'll say, "There's no refuelling available." That's where we come in. We can put economical, on-site natural gas refuelling for them.

The cost of this will typically be equivalent to what they're paying at the pump, and this includes all of the equipment, all of the installation and so on. There's no additional costs that we're talking about and, as we know, natural gas is cheaper than gasoline. Some of you might say, "Natural gas has gone up in price," and it has, but what's happened to gasoline? It's also gone up. Our studies show that today we have a better cost advantage than we did two years ago in the spread between natural gas and gasoline. It's more economical today, compared to gasoline, then it was two years ago.

We do all this through some leasing packages and other things like that, so there's no capital required up-

front by the customer. They can start saving money right away.

1000

We have two types of systems. One is called a time-fill and the other one is called a fast-fill. All of the public refuelling that you have out there is fast-fill, which means you drive up, you connect and you fill your tank, just like gasoline, and away you go. In some cases we have a captive fleet, which means they are all coming back to a central location. They are parked maybe eight hours, 16 hours, and we can take advantage of that with what we call time-fill refuelling. Time-fill refuelling is more economical, you need less equipment, plus, you gain the advantage of productivity. If we think about a driver who has to stop to refuel with gasoline, that's costing somebody money at two points: one is the driver and two is the vehicle. Typically, that cost is somewhere around \$50 an hour that we have to calculate into our economics. If you remove that task, you now gain again through productivity. We can also offer the fast-fill system, which takes two to three minutes. Most of our sites will end up being a combination of time-fill and fast-fill, where the customer wants the cost advantage of time-fill but also wants the security blanket of a small fast-fill for top-ups throughout the day, and that works very well.

Our systems are ideal for government fleets, and one of our biggest customers in the United States is government fleets. I'll show you some pictures in a few minutes. We can do cars, we can do pick-ups, vans, school buses, and we've even done some street sweepers for refuelling. One of the examples is the New York state DOT. They have purchased just over 100 Honda Civic dedicated natural gas vehicles. They needed an infrastructure. They had a couple of million dollars to spend on infrastructure. They had a choice: they could build two or three large stations or build numerous small stations, and they opted for the latter, where they built 30 small natural gas refuelling stations using our product throughout the state. This made it very convenient and economical for them to have refuelling anywhere they go.

To give you an idea of some of our present market and our present customers, government applications—and this is a combination of state, also federal, and some from Canada—are one of our primary markets. This market in the United States is being driven by mandates and incentives. The cost differential of fuel in the United States isn't advantageous, as it is here in Canada. So there we have mandates and incentives, especially in California today, which is our largest market, that's being driven by those things. As you can see, in Canada right now we have four small fleets using FuelMaker products. When it comes to municipal and private fleets, again the leader is the United States: Arizona with about 115, and those are mostly residential applications. Last year there were numerous grants available which really pushed the market in the direction of natural gas. In California you can see there are 72. Most of those are municipal; there are a lot of school districts using natural gas, getting rid

of diesel, and again, they are using FuelMaker to help them with the refuelling infrastructure. And we have 112 throughout the other states in America. In Ontario we have 11 refuelling stations. Half of those are private fleets and the other half are mainly from the old city of Etobicoke, which several years ago did a big push with natural gas and did an excellent job of converting a lot of their fleets to natural gas. Those sites, which are probably close to 10 years old today, are still up and running. I went to visit some yesterday, as a matter of fact. The school board is still using them and they're working just great for them.

The other market, which doesn't really pertain to what we're talking about today, but just to give you an idea, is the forklift market. In Ontario we are doing extremely well. The main driver in the forklift market is indoor air quality. If you can imagine, in Canada, where we have our doors and buildings closed nine, 10 months of the year, you have high carbon monoxide concentrations from some of the forklifts running indoors, and they are switching to natural gas to alleviate that problem.

The other market where we did extremely well in Canada, especially in Ontario, is the ice resurfer market: Zambonis, Olympias. The reason for that again is indoor air quality. They had a problem with kids getting ill or people playing hockey getting ill and they went to natural gas to alleviate that problem. We have done extremely well. Ontario has done an excellent job in converting most of their rinks to natural gas.

FuelMaker environmental benefits: what we offer when it comes to the environment is that you can utilize natural gas, which is the cleanest fossil fuel available, anywhere. As long as there is a gas pipe there, you can use natural gas to refuel that vehicle using FuelMaker in a cost-effective manner. The other advantage: for locations where they do have on-site refuelling with gasoline or diesel, you can eliminate those risks of ground contamination from spillage and so on by going to natural gas.

I talked about the New York DOT. Here's a sample of four of their sites out of the 30. You can see that they look very similar to gasoline stations. They just plug in, refuel and away they go. A big customer of ours is USPS, the United States Postal Service, down in the United States. Again, we have about 1,000 vehicles that are using the FuelMaker system, time-fill.

Here's a street sweeper, which is using one of our larger products, again natural gas. They could not refuel with natural gas unless they had our system in place.

Public works, Fulton county: they have about 60 natural gas vehicles that are using three of our refuelling systems to fuel their vehicles. These are also on what's called a fuel net system, which can also be used by the public.

An animal shelter down in California: again, numerous pickup trucks being utilized with natural gas refuelling on our system.

I think we all know this site here: Air Canada Centre, using our equipment to refuel the Zambonis and numerous forklifts that they're using indoors.

At home: as I mentioned earlier, we can even do this at home. The problem with home refuelling today is that our product is too expensive, so we are working on a new product. We're doing a press conference next week. This product will be available by the fall of 2003. It'll have a price of about US\$1,000. You hang it in your garage, plug it into your 110, you plug it into your natural gas, just like a gas barbecue, and you fill your vehicle. So that's our goal, that's what we're shooting for. But we need to get there, and to get there we have to continue with our fleet market, with our ice arena market, with our forklift market.

Where can the Ontario government help?

The main one that I think is important to us is to convert your fleets, the Ontario government fleets, to AFVs. I'm not saying natural gas; I'm saying AFVs. You choose the best fuel available for that area to convert it to alternative fuel. I think this is feasible; I think you can do this. There are many different fuels available today. I think that natural gas will win, and that's why I say AFVs, because I'm confident enough that our product, with natural gas, is the best choice. But in some areas you might not have natural gas; you might have to take a different route to get the AFVs.

Provincial PST rebate on the AFVs: that's another option. I know the province is already doing some use of that.

Offer free use of toll roads to AFVs. This is being done in California and this is very effective to increase the AFV usage down in California.

Provide unrestricted use of car pool lanes. This is not a big issue yet in Ontario, but in other places, like California, it's a huge issue. In some places, fleet managers are hiring a second person to sit in that other passenger seat so they can use the car pool lanes. AFVs have given them a way to use those car pool lanes with no additional cost.

The last one is to give exemption from Drive Clean emissions tests.

That's my presentation. Thank you very much for listening.

The Chair: Thank you for the presentation. We have hardly two minutes per caucus, starting with the NDP.

Ms Churley: We've heard from a number of people who produce the system. I think you're the first one to come and talk about the need to have the ability to refill, that that's a problem and one of the reasons why it's difficult for people to sell their cars. It's something that I support as part of the whole puzzle, one of the pieces. Natural gas is finite. Eventually it is going to run out, and I don't see it as a permanent solution. But in the meantime it's a much cleaner gas than the others, so I'm supportive of this as one of the pieces. I'm just wondering how you see what you do fitting into all the other pieces of trying to keep our environment clean, ie, public transportation, rail. I assume that you see yourself as a piece of that.

Mr Pirraglia: Everything is driving toward the fuel cell. As it was mentioned earlier, it is six to 10 years

down the road, but we're also striving toward that goal. We see natural gas as a stepping stone to that fuel cell. Most of the natural gas equipment companies, such as ourselves and the automotive OEMs, are driving toward that fuel cell goal.

But we have to remember that even if you have a vehicle available with a fuel cell today, you still have to refuel it. You still have to put something in it, and that's where we fit in: to have the infrastructure available, whether it be natural gas or hydrogen.

1010

Ms Churley: So this would be a transition, but it could be rolled over.

Mr Pirraglia: Yes. Our new product that we're developing today for the home, and we call it the home refuelling appliance, is also being developed as a hydrogen refueller. So the option will be, not in three years but maybe in six years, that you will have the option of having this unit as natural gas or as hydrogen.

Mr Jerry J. Ouellette (Oshawa): Just a couple of quick questions. This home system that you mentioned: first of all, what's the current cost of the one you have? You said you wanted to go to US\$1,000?

Mr Pirraglia: That's right. At present we don't consider our product as a home refueller. It can be used for home refuelling but it's not really designed as that, and one of the reasons is the cost. For you to have a home refueller today, you're probably looking at around \$8,000 installed. So it's not really catering to the home refuelling marketplace today; it's more for the fleet market that that product is a good fit. Once we roll it into the fleet market, then the costs become effective. Again, by using leasing, you can have no cost at all.

Mr Ouellette: So what would happen with somebody who was to take one of these home units and start to charge other people to use it at their household location for refilling?

Mr Pirraglia: There are some cities or some small communities in the United States that are looking at that option, where they can have their own community refueller, let's call it. Clean Cities is driving some of this down in the United States, especially down in Atlanta, where the Clean Cities coordinator has natural gas vehicles, and he does have a FuelMaker at home, but he wants to have a small refuelling site right on their community. So that is an option, where you could have that type of thing. We have not contemplated the sharing of a home unit.

Mr Ouellette: Yes. You could envision some people wanting to capitalize on the market would start to retail out of their house in a residential area and it could cause a concern later on.

Mr Pirraglia: Yes.

Mr Ouellette: What is the availability for this home unit to interchange with other locations? Once you install the home unit that you are producing, will you be able to go to, say, any of the other 66 locations in Ontario to refill as well?

Mr Pirraglia: Once you have a natural gas vehicle, you can refuel at any of our locations.

Mr Ouellette: So it's all interchangeable?

Mr Pirraglia: Yes, the refuelling of a vehicle can be done wherever. Again, I must stress the point that today's product line is not a residential product line; it's a fleet product line. The residential product line will be available three years down the road. What we produce today is not meant for residential use. There are some that are being used in that application. One who comes to mind is Mr Schad, who is the owner of Husky up in Bolton—a big environmentalist. He has a fast-fill at home to fill his Crown Victoria but, again, it's more of a fleet type of system that he's using than a residential type of system.

Mr Ouellette: But it's interchangeable with all the other service stations that currently provide it.

Mr Pirraglia: Yes.

Mrs Marie Bountrogianni (Hamilton Mountain): I'm curious: one of your recommendations is to "give exemption from Drive Clean emission test fee." So these cars that are powered by natural gas still go through the Drive Clean program?

Mr Pirraglia: Yes, they do.

Mrs Bountrogianni: Do you have any data on how many of them fail, in comparison to the gasoline automobile?

Mr Pirraglia: From my personal experience and all of our own natural gas vehicles that we have at our company or my own vehicles, none of them has failed. But they've been tested both on gasoline and natural gasoline and they haven't failed in either case. Now, from what I know, there aren't too many failures that are occurring anyway, even on gasoline. So once you're running on natural gas, the failure rate I'm guessing at is very low, if any at all.

Mrs Bountrogianni: I'm surprised that it's even necessary.

The Chair: Thank you very much for your presentation. We appreciate your coming forward and bringing to our attention the advantage of natural gas.

GAIA ENERGY INTERNATIONAL INC

The Chair: Our next presenter is GAIA Energy International Inc, Greg Binions, chairman; Dr Raymond Colledge, technical adviser; Dr Carl Wintermeyer, director of automaker liaison; and Mr Ross Blaine, executive vice-president.

Mrs Bountrogianni: Before our guests start, I'd like to ask the research department if they can get data on Drive Clean tests on AF vehicles.

The Chair: I think that's in order. Thank you.

As you start, just state your name for the sake of Hansard. There's 20 minutes for your presentation, which includes questions from each of the three respective parties.

Mr Greg Binions: Good morning. My name is Greg Binions. Thank you for giving us the opportunity to introduce Gold Chance International Ltd and its premier new energy project, GAIA Energy International Inc.

As a past professional North Sea diver and avid outdoorsman, I have seen first-hand how environmental pollution affects our wildlife and their habitats.

The Chair: Could you just introduce your co-members there?

Mr Ross Blaine: Ross Blaine.

Dr Raymond Colledge: Dr Raymond Colledge.

Mr Carl Wintermeyer: Carl Wintermeyer.

Mr Binions: My family has been in the long-term health care industry for over 30 years, and as such I have personally seen the effects of pollution, and in particular the cost and misery it inflicts on our elderly.

First of all, Gold Chance International Ltd is an energy development company founded in 1999 by my family to bring new environmentally friendly energy products to Canada. Gold Chance management seeks out new energy products or applications that could be involved in the production of alternative energy sources. We then evaluate these opportunities based on their scientific validity, economic feasibility and intellectual property security. One of these products is GAIA, which is a high-performance, low-polluting alternative for gasoline. GAIA has already been commercialized in Japan, where it is sold under the brand name of GAIAX and Ixion through over 300 converted retail gasoline stations.

Arising from the Team Canada trade mission facilitated by Prime Minister Chrétien and supported by Premier Harris and the Premier of Quebec, we signed our agreement as part of the Japan-Canada trade mission of September 1999.

It is GAIA Energy International's intention to launch its new lower-polluting gasoline alternative product in Ontario first and then in the rest of Canada and the United States.

Since finalizing the rights to license GAIA, we have actively been discussing the development of two products that are associated with it. One is a diesel replacement fuel, and the second is a recycling device that converts plastic into diesel feedstock.

In our efforts to commercialize GAIA fuel as a lower-polluting gasoline alternative in our Ontario test market, we have evaluated GAIA as an effective lower-polluting gasoline alternative and ensured that GAIA does not damage North American auto parts or pumping equipment. Like the consumer in Japan, the North American consumer can be assured that GAIA would not violate automaker warranties. We are prepared to set up product testing sites to prove the business case for GAIA as a cost-effective, lower-polluting alternative for commercial gasoline fleets.

I would like to turn it over to Dr Raymond Colledge.

Dr Colledge: Thank you, Greg, and good morning, honourable members. I am going to highlight for you some important aspects of GAIA fuel, with particular reference to what it can do for the environment.

First of all, though, a few words about myself. I have an extensive background in product and market development in a number of different industries, including plastics and textile fibres as well as chemicals. My most

recent experience has been in alternative fuels, where the objective is to provide an alternative to gasoline with something that is not derived from petroleum, and in oxygenated fuels, where the objective is to make gasoline a cleaner burning fuel.

These activities have taken me from coast to coast in Canada and the United States. I have been active in California, where I worked extensively with the California Energy Commission, the Air Resources Board and the South Coast Air Quality Management Board.

1020

I was a founding member of the Canadian Oxygenated Fuels Association, of which I was chairman for a number of years, our main objective being to promote the responsible use of alcohols and other oxygenates as fuels.

I was also a founding member of the American Methanol Institute, based in Washington, DC, and I became the vice-president of market development. The AMI—now the MI—is a lobby group which represents the interests of the world methanol industry. Our most outstanding achievement was undoubtedly to provide input, and it was a substantial amount of input, to Congress during the extensive revisions that were made to the Clean Air Act a few years ago. These endeavours resulted in the introduction of reformulated gasoline, which is basically oxygenated gasoline, into all major metropolitan centres in the United States as a means of reducing vehicle emissions in order to be able to comply with the air quality standards drawn up by the Environmental Protection Agency. This program has been an unqualified success in reducing carbon monoxide and smog levels in many major US urban centres.

It is not that long ago that most Canadians believed smog and other air quality problems were confined to faraway places such as Los Angeles, Houston, Mexico City and Beijing. That, of course, is no longer the case. I think any remaining doubts must have been dispelled by the appalling situation we have had to face with smog alerts this summer.

Although not the only factor, vehicle emissions continue to be a major contributor to the problem, yet in the last 20 years the auto industry has made tremendous strides in reducing auto emissions to a fraction of what they used to be. Unfortunately, it is still not enough.

Vehicle exhaust emissions give rise to a number of different products that pollute the air, but there are three that are of particular significance. These are carbon monoxide, unburned hydrocarbons, and nitrogen oxides. Carbon monoxide is perhaps the most insidious pollutant, as it is invisible and has no smell. The other two pollutants, being unburned hydrocarbons and nitrogen oxides, combine with each other under the action of sunlight to produce smog.

Why we should be concerned is that these three components, together with other undesirable emission products, can have a serious effect on human health. The very young and the elderly are particularly vulnerable, as is anyone with either respiratory or cardiovascular prob-

lems. We also have to remember that some of the more deadly emission products are major carcinogens.

The Japanese experience has shown that substantial reductions in vehicle emissions can result when gasoline is replaced with GAIA fuel. The most significant reductions have been with carbon monoxide and unburned hydrocarbons, but some reduction in nitrogen oxide emissions has also been obtained.

We are in the process of conducting confirmatory tests in Canada, making use of Ontario Drive Clean facilities, and we are also having extensive emission tests done for us by Environment Canada at their Ottawa test centre. I am happy to report that the results we have obtained so far confirm that GAIA fuel can bring about substantial reductions in carbon monoxide, unburned hydrocarbons and nitrogen oxides. In addition, and this is in reference to global warming, a small but significant reduction has also been obtained in carbon dioxide emissions, which is one of the principal greenhouse gases.

One final point I would like to make is that the emission control systems on today's vehicles do not last forever. They deteriorate with time, and the result is that many of today's emission problems emanate from vehicles that have been on the road for more than five years. It is said that 80% of undesirable emissions are coming from 20% of the vehicles. We believe that GAIA fuel can play an important part in helping to reduce the emission problem associated with these older vehicles.

To talk more about GAIA and the automobile industry, I would now like to hand you over to Carl Wintermeyer.

Mr Wintermeyer: Thank you, Raymond, and good morning, honourable members. I am going to address the concerns of the auto industry when adopting new alternative fuels.

First some background on myself: I am a professional engineer and have just recently retired from General Motors of Canada Ltd, where I managed the research and development and new business ventures department for 16 years. I have had considerable experience with new business start-ups and strategic alliance formation.

During my time at GM, I received and supported many alternative fuel proposals and projects which helped our company move forward with a world-class centre in alternative fuel engineering in Oshawa.

Ontario is uniquely suited to introduce a fuel such as GAIA, as this is the largest industrial centre in Canada. The major car companies all have a considerable presence here, and the Big Three car companies have design centres and R&D centres in Ontario. In addition, GM has a very large vehicle cold test facility in Kapuskasing in northern Ontario, which is used by several other car makers as well.

We have world-class researchers in automotive systems available to us at our many Ontario universities, and a National Research Council lab in Ottawa that specializes in fuel research. We are therefore uniquely able to carry out a very comprehensive test and validation procedure in Ontario. New fuels are subject to a rigorous

test and validation process prior to being introduced in new vehicle car lines.

As you may be aware, warranty issues are of great concern to the car business. The car companies' approval will provide the assurance that GAIA fuel has no harmful effects on automotive systems and controls, and indeed has been proven to provide many beneficial environmental attributes as well as contributing to fuel efficiency. If GAIA wins, everybody wins, including the citizens of Ontario and Canada.

The initial data indicate that GAIA fuel has a great potential to substantially reduce pollutants such as nitrogen oxides, carbon monoxide and unburned hydrocarbons. In the months to come, we plan to test and validate these data with the car companies and then introduce this new product that will help reduce automotive emissions even further.

I would like now to introduce my colleague Ross Blaine, who will summarize this presentation.

Mr Blaine: Thank you, honourable members, for affording us the time to present this new, low-polluting alternative gasoline product. It has been a pleasure working with Carl and the automotive industry over the past 16 years. And, yes, the GAIA fuel alternative is an exciting new opportunity.

Business Development Consortium, my main company, has in over 18 years in business evaluated 70 new products to see if they could gain and maintain a strategic advantage in their new markets. Business Development Consortium has been involved with the introduction of 37 new successful business initiatives. None have the potential to make an immediate, positive impact on the environment as this product has. As you heard, testing in Japan has provided proof that GAIA reduces—not eliminates but reduces—hydrocarbons, NO_x, CO₂ and carbon monoxide.

Preliminary testing in Canada at Environment Canada's test facility in Ottawa has shown in head-to-head, apples-to-apples testing that statistically, GAIA produces significantly fewer unfriendly pollutants than high-test gasoline.

In 1996, Business Development Consortium was asked by the Canadian Vehicle Manufacturers' Association and Industry Canada to determine where automotive research and development will be most productive in Canada. One of the top five areas was alternative fuels. Since that time we have monitored the alternative fuel industry. We have watched fuel makers try to commercialize their natural gas home fuelling stations. We have watched the demise of propane.

This confirmed what we already knew, that consumers would not change their buying criteria. These are: first, a new product must still be part of the current automotive refuelling infrastructure; second, not a higher price with a great-value story but the lowest price is why consumers will travel out of their way to get cheaper gasoline; and third, cost. Lowest price is what wins the day for commercial fleet operators who are faced with the day-to-day reality of bottom-line improvements.

1030

Here are the highlights of the GAIA alternative fuel story. This low-polluting alternative fuel can be used in gasoline-powered engines for cars, recreational vehicles and watercraft. GAIA effectively meets performance and pollution concerns without having to change traditional buying patterns. GAIA can be used just like ordinary gasoline. It can be put directly into a normal gasoline engine. GAIA can be run on its own or mixed with ordinary gasoline, all without developing any performance problems. GAIA will provide the pollution reduction solution needed to forward government pollution reduction objectives.

GAIA Energy intends to manufacture GAIA fuel for sale on a regional basis through three channels: first, municipally operated fleets for pollution reduction and cost saving; second, private environmental and cost-conscious commercially operated fleets which may be serviced from a limited number of strategically placed retail outlets; and third, through selected strategic partnering with upscale private branders.

To restate once again, the keys to success for GAIA as a gasoline alternative must be that it is priced at or below current regular gasoline prices; that it requires no change in the buying infrastructure; that it is safe for use in unmodified vehicles; and that it is lower-polluting, and this will only serve to protect us all from having more of those vehicle-caused smog days that negatively affected both our health and commerce this summer.

In conclusion, this project and this product, like any new business venture, needs the support of others to make it work. It needs to be given a chance. It needs to be able, while its buying capabilities are small, to have financial support that will allow GAIA Energy International to test its credibility in the fleets marketplace.

Ontario has been aggressive in reducing automotive pollution. GAIA is an immediate solution to pollution reduction, particularly in older vehicles. We are asking for the support of this committee to enable GAIA to be made commercially available to Ontario motorists by recommending that any fuel that reduces pollution be given the same kind of help that other alternative fuels are currently being given.

The Chair: Thanks very much for a most interesting presentation. We're almost out of time, but we'll give about 30 seconds to each caucus. Mr Gilchrist.

Mr Steve Gilchrist (Scarborough East): I appreciate your presentation and I look forward to hearing further results of the testing you're having done.

I'm a little curious about your final comment, though, and I wonder if you could share a few more details on precisely what you're looking for and the problems you've been facing so far.

Mr Binions: Currently in Ontario, gasoline tax is 14.7 cents. Propane is taxed 4 cents a litre. When propane first came out it had about a 12-year break where there was zero tax. Natural gas currently has zero tax. What we would like to see: our fuel is a totally different fuel than gasoline and it needs the same tax breaks natural gas and

propane gas received in the beginning, until we can develop the market. That's what we're asking the Ontario government for.

Mr Parsons: I'm a little confused, and I guess I'm trying to be sensitive in how I phrase the question. I'm not sure what your product is.

Mr Blaine: Our product is a gasoline alternative. It is made up of a blend of naphtha and different alcohols, and in turn burns cleaner and reduces pollution significantly in vehicles. It will be sold out of normal gas pumps.

The Chair: Our time is up. I really appreciate your presentation, and thank you for offering to come forward.

WIND POWER TASK FORCE

The Chair: I now call on our next delegation, the Wind Power Task Force. As you begin your presentation, please put your name on the record for Hansard.

Mr David Boileau: My name is David Boileau. Thank you to the chairman and to this committee for the opportunity to appear today. I'm the president of a company called Seine River Power and another company, Harmony Wind Energy. Seine River Power is a partner with Great Lakes Power, a great Ontario water power producer, in the 10-megawatt Valerie Falls water power station in Atikokan, Ontario. My other company, Harmony Wind Energy, has partnered with Great Lakes Power on a wind energy project. We hope to develop a business case for investment in a \$140-million, 100-megawatt wind park north of Sault Ste Marie and explore other wind energy development opportunities in Ontario.

In 1998-2000 I co-chaired with the MNR—a fellow by the name of David de Launay, who I think made a presentation to this committee earlier—the Water Power Task Force. This effort produced results that have helped renew water power in Ontario. Paul Norris, president of the Ontario Waterpower Association, is presenting to you after this presentation and he will update the committee on how water power can help meet the government's emission reduction objectives. However, today I'm here to talk a little bit more about wind power.

I know that the committee is interested in what's happening in wind power. I'm sure we've all seen an increasing amount of publicity about wind power penetration in the world, and more recently in North America. I guess I'll have to start off by saying that I was a skeptic converted on the way to Damascus. I've always believed that wind power was not likely to be competitive against other forms of generation, including water power, fossil generation and nuclear, and the reason was that it wasn't competitive. It was 20, 25 cents a kilowatt, selling into a market where four and five cents was the average wholesale price. But every year when I went to these trade conferences, these wind guys would have their little windmills up and I'd ask them, "What's your price for power this year?" It kept going down: four cents one year, five cents the next year, and pretty soon it was

down to 15 cents. When it got down to 10 cents, I said, "I'm a capitalist. I'd better start looking at this business."

Together with a partner, I went down to Minnesota to look at a US\$500-million installation in Buffalo Ridge, Minnesota, that's providing, by the end of 2002, 425 megawatts that was mandated by the state regulatory utility. I came back from there absolutely convinced that there was a place in the market for wind power in North America. Whether there was in Ontario I didn't know, because I didn't know what our resources were as far as wind energy speeds.

I know we have a very tight schedule and it's not possible to cover all the items and issues and progress we've made in the last year in Ontario, but I've prepared a package that outlines, first of all, wind power 101, because most of us don't really understand what the issues are around wind power, the huge technological advances and the reductions in cost. We don't understand what the resource is in Ontario in terms of wind speeds and whether in fact there is a resource. We don't understand what some of the constraints are for putting wind parks up, because there are some. There are environmental constraints; there's a tolerance from the public in terms of the number of towers that can be erected; there are certain places where it's not suitable. But there are also a lot of misconceptions. It's an eight-pager. I encourage you to read it at your leisure so that the next time I come back to make a presentation to this committee, you may have additional questions.

The second part of that package provides some background on the Wind Power Task Force and its terms of reference. I'll briefly bounce through that as it may raise some questions and issues as we move forward in this presentation.

The Wind Power Task Force effort was initiated by industry and led by industry. We approached the government back in January 2001 and suggested that because of emissions targets for the government and because of the success of the water power task force, it might be worthwhile to examine some of the issues surrounding opportunities and constraints for investment in wind power in Ontario.

There was a strong interest from the government. Building on the success of the task force, we approached six government ministries—the Ministry of Energy, the Ministry of Natural Resources, the Ministry of the Environment, the Ministry of Finance, the Ministry of Economic Development and Trade and the Ministry of Northern Development and Mines—and said, "Would you guys be prepared to supply some resources to our committee so we could better understand opportunities and constraints?" It wasn't a surprise to me that the government reacted very positively to that request and participated in a sincere and dedicated fashion over the last four or five months, starting in April, in a main committee as well as three subcommittees.

The industry representation wasn't a bunch of airy-fairy guys who came out from the woods and said, "We want to convert the world to wind power." These are serious investors, which included Ontario Power

Generation; Great Lakes Power; Seine River Power, my company; Regional Power; British Energy Canada; Vision Quest, a western Canada investor in significant wind resources out in Alberta; Suncor Energy, which operates one of Ontario's larger refineries; and Sky Generation.

1040

Manufacturers that were on the committees included Vestas Wind, the world's largest turbine manufacturer; Steelcraft, a company that fabricates steel and is interested in supplying steel components, particularly towers—it's an Ontario company; Enron, one of the world's largest marketers and manufacturers of wind power products and participants in the electricity and fuel industry; POWCO Steel, again interested in towers; Rockwell Automation.

On the service and skills side of it we had companies like Zephyr North, who are involved in wind resourcing; Blenkhorn and Sawle; Brock University; and Acres International.

Our approach here wasn't to develop a task force that said, "Let's build some stuff in the bush somewhere." We really wanted to look at the possibility of creating a critical mass of manufacturing, development, servicing and HRDC issues so that perhaps Ontario might position itself to supply all of North America and the world with wind power products, wind power resources and wind power skills.

I chaired the task force and we had a number of meetings, starting in April, for the main committee. We set some very specific terms of reference. You can read through what those terms of reference were. Primarily, the government ministries were providing resources and feedback on various policy suggestions and what the impacts might be on those policy suggestions. The task force was designed not to say that wind power was good and everything else was bad, but to look at how wind power would fit into the Ontario market and what contribution we could make to the government's objectives without putting down the other fuels. We needed to recognize very carefully the impact of any policy recommendations on rates, the stranded debt and stranded assets.

I'd like to come before you today and come up with a whole bunch of recommendations about what this committee and this government can do to set the climate for investment in wind power in Ontario. But our terms of reference called for us to complete all of our meetings and develop a draft report for final review by the main committee, and then at that time issue a final report from the industry task force, with a view to bringing it forward to the deputy ministers and the ministers of the six ministries that have been participating in the wind power task force. We would also, obviously, like to bring that report forward to this committee with a larger allotment of time, with the approval of the Chair, because we think this is going to be one of the centrepieces of the government's renewable energy strategy for Ontario, and we do need a renewable energy strategy in Ontario.

I will give you a brief snapshot of what I think the recommendations are going to address. On the regulation and incentive side of it, we're going to look at environmental assessment rules and make some recommendations around that, as well as emission trading and set-asides for renewables. We're going to ask the provincial government, we think, to support our efforts at the federal level, for the federal government to adopt a production tax credit. There has been one in the US there for seven years. It has just been renewed for another five years. It has provided a huge boost to the US wind industry, resulting in \$2 billion worth of investment in wind generation in the US this year. So we need your help, Ontario, and that of the Minister of Energy and the Minister of Finance, to encourage the federal government to do their part so that we don't lose investment to the US that should come to Ontario.

We'll be looking for Ontario to adopt some form of a renewable portfolio standard. This is a very successful measure that has been implemented in Texas, believe it or not, the home of the current President of the US. The policy on renewable portfolio standards was implemented when he was governor of that state. The target is 2,000 megawatts of wind power or renewable power in Texas by 2010, a very ambitious one, but it's already exceeding its schedule in terms of bringing on new generation.

The renewable portfolio standard is probably going to look at a graduated standard that brings a target starting at 1% to as much as 8% at the end of, say, 2010. We'll look at the impact of that on rates and on other generators to make sure it fits with the government's needs and with the needs of society in terms of preserving jobs and investment in this province and in terms of the competitiveness of our industry.

We'll also be making some recommendations on property assessment for wind towers and energy, and royalty tax on wind parks.

Another area is land-use wind resourcing and government-industry co-operation. When we started the task force, it was clear that the government did not have a strategy or a policy in place for releasing lands for wind park development. The reason for that is we haven't had any wind park development in this province so it didn't make any sense to have a policy for something that didn't exist. To their credit, MNR has embraced this challenge and has been working with the task force very closely in analyzing various policies that we think will help kick-start an industry. Our recommendations will speak specifically to that issue of releasing crown lands, which is 85% of our province, for the development of wind power.

Although private enterprise should be doing most of the resourcing in this province in terms of identifying the wind resource, there's probably a need for government to take a small role in establishing a number of benchmark towers to analyze wind speeds at high elevations. We've got lots of wind energy information in terms of winds at airports, but the elevations of those readings are 10, 15

and 20 metres high. Wind towers today are 85 metres high. We have to know what the wind regime is at the higher levels and there is a role for the government in co-operating on that.

Finally, in terms of land use, wind resourcing and industry/government co-operation, we think that there's real need for the release of GIS information, which the taxpayers have paid for, to the wind industry so that we can do our modeling and understand better where the best sites are in Ontario. I'd ask you for a second to consider wind somewhat like water. Many years ago we spent, in today's dollars, hundreds of millions of dollars analyzing what our hydrological resources were in terms of power and energy from water power. Today we're dealing with a new medium. Think of wind power like water power, just not quite as dense as water. There are wind rivers up in the sky—Niagara wind rivers, in fact—that deserve a priority in terms of development and investment.

So how do we find these wind rivers? There's a lot of investment from private enterprise that's going to be required to do that. Our company has committed \$1.4 million to Ontario this year, up to December, for wind resourcing, using some very sophisticated modeling systems as well as actual towers that we've been erecting. Other companies are doing the same thing.

On the manufacturing services and HRD side of things, again, we have to have a group of people who can build these things, erect them, service them, maintain them into their 25- and 30-year lifespan. We have to have a manufacturing industry, and we're not going to have a manufacturing industry in this province if we don't have a climate for investment in wind power. Why would somebody from Denmark come to Ontario and say, "I think we're going to build all our North American turbines in Ontario so we can ship them across the border to the US, where they have a climate for investment"? It's not going to happen. We're a little bit behind, but we're catching up, with the help of the people from the government on this task force, to identify the constraints and opportunities.

Finally, there is a need for the wind power task force to work with other associations and groups, including the Ontario Waterpower Association, our sister Ontario renewable, remembering again that a lot of the sources of fuel we have in Ontario—uranium, coal and gas—send royalty dollars and tax dollars out of the province. Water power and wind power keep those dollars in the province. They are Ontario's indigenous resources. We want to work with them, IPPSO and other groups in developing a renewable energy strategy for Ontario that we think might form the framework for the government moving forward to meet its emission reduction targets.

In the last section of this booklet that you have in front of you, there's a contact list of participants. I think you can see from it that we are a very serious group, very focused on bringing forward and identifying the opportunities and constraints to investment.

In summary, I'm going to make a few comments and then open it to questions. One question that I think will

come up: is wind reliable? I'll provide answers in more detail later, but the answer is yes. There are some interesting things that have happened with wind in the last 10 or 15 years. We realize now that wind blows most in the winter time when our loads are high. On cold, windy, winter days wind production is high, and the wind production in Ontario would match the daily peak, from roughly 2 o'clock in the afternoon till 8 o'clock at night. The other interesting thing about wind is that it's pretty consistent year over year; it doesn't vary by much more than about 10%. So, from a predictability standpoint, we know it comes in the winter, we know it comes at a time of day that we need it and we know, year over year, roughly what the energy outputs going to be.

1050

Equally important, we can predict 40 hours out, plus or minus 10%, what the wind energy production from plants in Ontario, or anywhere in the world for that matter, is going to be every day. If we can predict 40 hours out, we can schedule other standby generation, like fossil generation or gas-fired generation, to come in between.

As well, there's a real opportunity to marry wind with water power—storage water power with reservoirs—so that you have a combination of generation that must run. Wind must run when the wind is blowing, and when the wind isn't blowing, there are opportunities for filling the void with storage water power. And there are some incentives there that we'll be making some comments on, again trying to keep our dollars in Ontario and our jobs and investment in Ontario.

Can wind make a significant contribution to Ontario's energy and environmental objectives? The answer is yes. I could go on for 20 minutes on that, but you'll get that in our report.

Is it a magic bullet? No, it's not a magic bullet. There are some who would suggest to you that there's enough wind power in Ontario to run all of Ontario. That's great, but the wind doesn't blow all the time. There's still a real need to sustain the investment we have in our existing generation, nuclear and fossil. If it's due to be retired and it's at the end of its useful life, fine; wind has a role to play there. If there's load growth, which we expect there will be, great; wind has a role to play there. But it's not a magic bullet. Together with water power, I think it could provide up to 40% of Ontario's electricity. Water power already provides 25% or 26%. Add some good, quality, high-value wind power and you've got a mix where Ontario can stand in front of the rest of Canada and say, "We've really done a good job in meeting our emission reduction targets and our renewable energy targets."

In summary, the challenge for this committee, industry, environmental groups and citizens is to work together to develop a renewable energy strategy for Ontario that meets the following objectives:

One, and very important, we have to encourage new investment in renewables that are competitive without direct subsidy. It just doesn't wash to go around and say, "We're going to hand these guys an extra three cents or

four cents a kilowatt to build these things." That's not going to happen. I don't think the taxpayer or the ratepayer and industry can afford that. We would lose huge jobs and investment. We have to be conscious of our competitive position in this province and in North America. But we can achieve investment in wind through the intelligent use of tax incentives like the production tax credit in the US and other incentives like the renewable portfolio standard, and we will address that issue in our report. I remind you that the US has just passed its extension of the production tax credit for an additional five years. The investment that flows from that is estimated to be over \$10 billion. We should get a piece of that.

We have to ensure that the programs to reduce emissions and promote renewables do not significantly increase the cost of electricity, thereby hurting Ontario consumers and the competitiveness of our industry. I've said it before, I'll say it again: we cannot have a situation where Ontario is non-competitive. I think wind can come in there and achieve that.

We have to make sure that any initiatives on emission reductions and renewables don't strand existing viable generation, whether it's nuclear or fossil, whether it's coal or gas. Those things have a useful life. The ratepayer has invested a considerable amount of money in them. When they're at the end of their useful life, sure, it's a good time to retire them and we have to have a renewable industry there to replace them.

Finally, any renewables and emission reduction targets should work to encourage jobs and investment in Ontario's indigenous resources, which are wind and water power. As I mentioned before, we need to develop a domestic market for wind generation or we won't be able to encourage manufacturers, service providers and educators to provide a critical mass that could make Ontario a leader in wind energy in North America.

The Chair: Your more than 20 minutes are up, if you would just wind up.

Mr Boileau: Actually I didn't start till 10:37, because those other guys took all the time.

We will, with the approval of the committee, return and present our report. It will be a good-news report, and the recommendations will be positive and constructive and will carefully consider implementation issues, impacts on ratepayers, other generators and will quantify environmental benefits associated with what we hope will become a renewable energy strategy for Ontario. One of the biggest parts of that is the serious commitment this government has made to this task force. I have to commend the government for this. This is the second round for us on renewable energy—the first one was water power—and I continue to be impressed with the serious commitment and dedication they've given to this effort.

The Chair: Thank you very much for the presentation. I'm very enthused with the contents of the pamphlet you've given us. We look forward to your final report. Certainly we would like your final report. It's my

understanding that you're tabling it at the end of next month. Stand by, the committee may want to invite you back for a more in-depth discussion, but that's up to the committee.

Thank you very much for your presentation.

Mr Boileau: Thank you, Mr Chairman. Were there any questions?

The Chair: Sorry; we're out of time. My apologies.

ONTARIO WATERPOWER ASSOCIATION

The Chair: We'll move on to the next presenter, and that is Paul Norris, president, the Ontario Waterpower Association. You've probably heard 20 minutes, and what's left over is divided up among the caucuses.

Mr Paul Norris: Yes, and David spoke on water power for at least five of those 20 minutes, so I'll keep mine down to 10 or 15 minutes, because I know there should be some discussion here.

Thanks very much for the opportunity to attend this session. I think it's an important and a timely initiative on behalf of the government, specifically to its environmental health and safety objectives in the action plan.

I'm Paul Norris. I am the president of the Ontario Waterpower Association, as Dr Galt has said. I'm familiar with the work that Dr Galt and committees like this have done, for example, on low water, and I'm quite confident that the outcome will be another positive policy step for government.

As you can appreciate, water power resources in the province are our primary renewable energy source, and have been for some time. I'm confident that in your deliberations and your recommendations to government, water power can make an important contribution. I too share David's enthusiasm with the concept of a renewable energy strategy for the province, something we simply don't have in this province.

Our association was founded in May of this year by a consortium of water power producers. We have Ontario Power Generation, Great Lakes Power, Abitibi, Inco, Regional Power, Seine River Power, Orillia Light and Power, Bracebridge Power; about 96% of the water power generation in the province is represented by our association. We've been very active in providing input and advice on public policy generally, environmental assessment, emissions reductions, a number of initiatives that I think have implications for this industry.

Water power has been in the province for about 150 years. Only about 50 years ago all of our energy came from falling water. I think we have taken for granted this indigenous resource. I think we've taken it for granted at our peril. We are working very hard to renew the public understanding of and interest in the water power resources of the province.

Today about 26% of our energy, as David has suggested, comes from water power resources, a little bit less than from fossil fuels. We have 8,150 megawatts installed in the province of Ontario. That represents an annual average energy production of about \$1.7 billion.

We have about 60 different water power producers in Ontario. Notwithstanding that OPG has about 88% of the market right now, we've already seen initiatives, for example, on the Mississagi to decontrol some of those assets, and we have everyone from a 500-kilowatt small power producer to Great Lakes Power and Abitibi and Inco and others.

The industry directly employs about 1,600 people, and there are another 2,000 jobs that are dependent on the industry. The last time we had a water power policy for Ontario, a renewable policy for the province, it was as a result of Ontario Hydro's demand-supply projections in the late 1980s, where they proactively encouraged water power development in the province. We had a Ministry of Energy with a very strong small-hydro program, and in fact investing taxpayer resources in assessing water power potential. We had the Ministry of Natural Resources with a proactive allocation policy with respect to water power resources. And as I say, we had Ontario Hydro, which was offering power purchase agreements supporting renewable energy. None of that exists today; it hasn't existed since 1993. I think this committee has a unique opportunity to build on some of the relationships that have already been fostered with government in the last two to three years.

As I say, we have about 200 water power facilities in the province. Some people may be surprised that more than half of those are south of the French/Mattawa. In northern Ontario, water power represents about 85% of the electricity provided. Within 10 kilometres of every major town in the north there is a water power facility.

As I said, we have Abitibi and Inco. Clearly forestry, manufacturing and other industries have benefited from indigenous resources of water power.

There are only about 50 river systems in the entire province that support water power resources, so notwithstanding the fact that there are 200 facilities out there, if you look at the systems that water power is located on, estimates—David alluded to government investment in water power potential assessment. They've assessed about 2,200 sites, only 200 of which have ever been developed. If you count the river systems, there are probably fewer than a dozen that support 90% of the water power production in the province.

1100

Another interesting thing that we've continually raised with the Ontario government and the Ministry of Natural Resources is that the royalties the crown receives from water power resources in the province are the single largest resource royalty received by the province—larger than the forest industry, larger than the mining industry, larger than the aggregates industry or any other resource industry. It's about \$140 million, \$150 million a year in crown royalties that accrues to the province and to the consolidated revenue fund.

We've undertaken an assessment in the industry of the known potential that is developable in the province of Ontario. There's about 1,300 to 1,500 megawatts available in just redevelopment or upgrading of existing

facilities. Previously assessed sites by Ontario Power Generation and some other companies suggest that there's probably 200 to 300 megawatts of new, undeveloped potential in the province, and that's without doing any kind of detailed assessment of the facilities or the sites that exist in the province. We're working very hard with the Ministry of Natural Resources on their allocation policy, we're working with the Ministry of the Environment on a proposed class environmental assessment for this industry and we're very active in promoting new development opportunities in the province.

In 1999, when I was part of the industry task force, Environics did a public opinion poll and asked Ontarians about green energy. If you don't have a copy of the opinion poll, I'd be glad to get it for you. In essence, the public of Ontario feel that the majority of the energy comes from falling water, and that's a myth that's associated with term "hydro." At that time the public also supported new investment in renewable energy. They identified water power and wind power as the top two forms that they recognized as green energy and, the often asked but never tested question about willingness to pay, indicated a strong interest in supporting renewable energy technologies. We saw in the delayed market openings a number of companies indicating interest in offering what they termed to be green energy.

I want to talk a little bit about the process that the wind power group has gone through, and I'll be tabling their report. The water power industry did the same thing in 1998-99. We prepared this report and tabled it with the Ministry of Natural Resources. An industry task force was formed—co-chaired by the Ministry of Natural Resources and involving energy, northern development and mines, environment, the Ministry of Natural Resources and the water power industry—in essence to assess the implications of the deregulation of the market on this industry and provide recommendations to the government with respect to how the relationship between this industry and government would work in the absence of an Ontario Hydro.

The outcome of those deliberations has been a very positive relationship with the various ministries. The most notable outcome is the creation of the Ontario Waterpower Association as a collective voice for the industry to government. I think it does serve as a useful model in considering governance relationships between the renewable energy industry in Ontario and the Ontario government.

Most notably, I think, from government's perspective, they invested \$16 million over four years in the Ministry of Natural Resources to improve their ability to assess the degree of water power potential in the province and also to work with the industry on some pretty core business of theirs: tenure, allocation and resource management planning. That commitment really was the impetus for the Ontario Waterpower Association to work collectively.

I talked a little bit earlier about, and David mentioned, the concept of a provincial renewable energy strategy. In my view, this is one plank in your deliberations that could come out as really good news, a positive step

forward. In fact, most of the building blocks are already there. It's just never been formalized.

One outcome of the deliberations in the water power task force was the agreement of the Ministry of Finance to re-evaluate the methodology of assessment. In December of last year they passed Bill 140, which has resulted in an estimated \$100 million of new investment in water power in the province. It put the water power industry on a level playing field with the gas fire generation. They weren't asking for any special exemptions or exceptions; they just wanted a level playing field. You've seen announcements from Great Lakes Power on High Falls, we know that Abitibi is interested in re-evaluating its potential at Iroquois Falls, and we know the Great Lakes Power is looking at their facility on Ear Falls. I would suggest that type of initiative will be one of the key factors in consideration when OPG sits down and develops their business case for Beck 3.

In the July 2001 amended regulation for emissions cap credit and trade, we saw the introduction of the renewable setaside. There's another building block that the government has introduced from that ministry, and that was as a result of input provided by IPPSO and members of the renewable community. Also, environmentalists were very interested in seeing a government commitment to renewables.

As I said, MNR is actively developing its resource allocation policy. We will see the Ministry of Natural Resources proactively RFPing water power development potential in the province: again, another strong message that government is committing to water power development. And, as David suggested, this association is working with the wind power task force and IPPSO to provide the government with some insight with respect to the advantages of the renewable portfolio standard.

So, you see, there are a number of initiatives that have happened as a result of the restructuring of the electricity market that have influenced the renewable energy policies of the government. But there is no overall vision right now that exists. I firmly believe that one of the outcomes of this committee's deliberations could be that vision: to put these things together and build on the existing relationship with government that the water power industry enjoys and the wind power industry is currently working on.

In conclusion, I'd like to say that we only have until May, from our perspective. We have been working very hard with the various government ministries, with the federal government on Eco-Logo and green energy strategies. We have been working since 1999 and we have, from the water power perspective, a lot of the building blocks in place that the wind energy group is working on right now. I am very confident that we can deliver to you, collectively or individually, a very strong message with respect to renewable energy in this province. I'll close with that. Thank you for your time.

The Vice-Chair (Mrs Marie Bountrogianni): We have about two minutes per caucus. It's the official opposition's turn.

Mr James J. Bradley (St Catharines): My first question relates to the environmental assessment process as it relates to the smaller projects. Even some of relatively little consequence, in the view of some people in a local community, deserve an assessment. It may have an effect on a marina, for instance, if it's near a marina. There is the problem of potential leaching of mercury that occurs naturally in soil if there is flooding that takes place anywhere. What is your view on the environmental assessment process that is in place now? Do you think there are any changes that you would recommend to it?

Mr Norris: That's a very good question. The environmental assessment process that has been put in place is very similar conceptually to a class environmental assessment process for energy production. I think it noteworthy and I agree with your assessment with respect to size. We've argued always that it's the local impacts that have to be considered. That's why you'll see, for example, in the screening mechanism that there is no minimum barrier for water power. It's five megawatts, I think, for gas, two megawatts for wind, and for water power it's zero.

What we've been doing is to work with the Canadian Environmental Assessment Agency, the Department of Fisheries and Oceans, the Ministry of Natural Resources and the Ministry of the Environment to assess the degree to which a class environmental assessment process focused on water power may better serve both the local interests and the interests of the water power proponents.

In my view, the introduction of the new Environmental Assessment Act regulations was a good step forward. There still are a number of other regulatory requirements that have environmental implications, not the least of which would be the Lakes and Rivers Improvement Act or the federal Fisheries Act, that we need to work very hard to bring together in the concept of an environmental review process. We're working very hard to try to develop that.

Mr Bradley: A quick comment: it was music to my ears to hear you mention Beck 3. I was talking to Vince Kerrio, a former Minister of Natural Resources and Energy, last night. We were talking about Beck 3, which I think a lot of people on this committee hope that OPG will proceed with. I realize that's only one project, and it's OPG—it's a big project. But the more we can see these water projects working without the same kind of environmental implications that other methods have, it's much more positive for your organization and your initiatives.

Mr Norris: Absolutely.

Ms Churley: Thank you for your presentation. I wanted to follow up, actually, on Adam Beck. OPG is a member of your association. It is, isn't it?

Mr Norris: Yes, it is.

Ms Churley: They were here giving a deputation yesterday, and I think all members of the committee asked about Adam Beck 3. We know that there has been a full EA done, and they said that they had done an analysis, and hopefully we'll get a copy of that. I'm just

wondering what you know about why it's being held up. It just seems to make big enough common sense.

1110

Mr Norris: Yes. Well, the individual members of our organization keep their business—

Ms Churley: Sure, I understand that, but I was just wondering what your opinion is.

Mr Norris: The only thing I would offer is that we've seen, for example, as I suggested, since the one measure that has been put in place so far, and it's not to discount the other regulatory mechanisms that could be put in place, but the measure on taxation, when we had an industry-government summit earlier this month has directly influenced the development of business cases for a variety of facilities. I would suggest that will be a critical component of their discussions internally with respect to the viability of Adam Beck, but we know for example that OPG is very interested in pursuing re-development opportunities in the northwest, and we've seen Abitibi and Great Lakes come up with similar types of initiatives. I can only say that those types of initiatives and renewable portfolio standards and that type of renewable energy support from government and vision from government could only result in helping that situation.

Mr Ouellette: I'll be quick because Mr Gilchrist has indicated that he has a question as well.

Earlier on this year, in May, I saw the results of water power generation on pickerel spawning in Pancake Bay as well as in Madawaska, the nesting habitat of ducks, for example. What was taking place was that the water levels were high, the pickerel came in to spawn—they needed the energy and let the water down and all of a sudden all the eggs were exposed. What is your industry doing to ensure that these sorts of things don't happen, so that the environment isn't damaged?

Mr Norris: Our industry is working very closely with the Ministry of Natural Resources right now. I guess the analogy would be forest management planning for water power. In the absence of Ontario Hydro, which had a public interest mandate, the Ministry of Natural Resources and the water power industry—it's reflected in this document and I'll be glad to get you copies of this—have introduced a formal requirement under the Lakes and Rivers Improvement Act to undertake each facility to develop a formal water management plan that looks at the existing operating regime and goes through a process of identifying environmental, social and economic objectives of the manipulation of water levels and flows. It goes through a public involvement process that ensures that the various resource users and resource uses are brought to that dialogue. That's a relatively new concept for the water power industry and it's one the industry has embraced and is working with. Madawaska was actually the first successful water management plan that was developed.

Mr Ouellette: Yes. Last year, for example, the Madawaska developed huge industries and, to put it bluntly, there were not a lot of happy campers there. The

water levels were so low at the Bark Lake facility site that it completely destroyed the industry for that season, according to them, as they expressed to me. So we're seeing a number of examples here: at Pancake Bay, where pickerel spawning was destroyed that year, and in Bark Lake the association is dependent on the new reservoirs that had been established and they lost that industry for the year. So I hope it goes a lot further, because I haven't seen a lot of commitment in the small examples that I have seen out there to ensure that we're protecting those environments.

Mr Norris: I assure you that that is the primary resource management strategy in the concept of a new business relationship with the industry. We're working very hard with our industry members to actively get involved in water management planning. It is a step ahead, and I understand your concerns.

The Vice-Chair: Thank you very much. Mr Norris, for the record, could you repeat the name of the document you'll be forwarding to us?

Mr Norris: I can forward you Toward a New Business Relationship. This is a report that was tabled with the Ministry of Natural Resources in November 1999. It deals with water management planning, allocation and taxation. I'd be more than pleased to come back to talk to the committee further with respect to our new energy strategies.

The Vice-Chair: Thank you very much for that and for your presentation.

POLLUTION PROBE

The Vice-Chair: Next I believe we have Mr Ogilvie, executive director of Pollution Probe. Welcome.

Mr Ken Ogilvie: Thank you. I'm very happy to be here. I want to indicate our support for this particular committee and its work. In fact, we think this may be one of the most important committees, perhaps the most important committee, in terms of inserting into particularly the electricity market, but perhaps other areas, some environmentally friendly provisions that don't currently exist.

I think most people know Pollution Probe. We're an organization that's been around for about 30 years and really works on research, education and advocacy for practical results.

I wanted to note in starting that the government of Ontario is already publicly committed to "favour more environmentally preferred forms of (electricity) generation and penalize those forms of generation with a more negative environmental impact." This commitment was stated in the 1997 document Directions for Change.

Before I begin, I would also like to say that I'm not going to talk about alternative fuels such as natural gas vehicles and so on, but we do support some of the proposals that I think are going to be put forward or have been put forward by Enbridge Consumers Gas in that regard.

Again, returning a bit to history, on August 14, 1998, Pollution Probe presented views on electricity restructuring—in fact, to Dr Galt in front of the standing committee on resources development during the hearings on Bill 35. I've resubmitted copies of our presentation, since some of those points that we made at that time are relevant. I will touch on some of those today.

In our standing committee presentation we've of course noted the very high levels of five major pollutants from coal-fired utilities throughout the US Great Lakes states, northeastern states and Ontario. I'm referring to sulphur dioxide, nitrogen oxide, particulate matter, carbon dioxide and mercury. The emissions of these pollutants were, and still are, at levels that threaten human health and the environment. In fact, the levels of most of those pollutants, if not all of them, have increased since that time.

On the other hand, substantial reductions can be achieved from coal plants for all of these pollutants except carbon dioxide, but again at considerable cost. Much larger emission reductions can be achieved for all of the pollutants, and in particular carbon dioxide, by promoting energy conservation, energy efficiency, and increased use of renewable energy, and on a shift basis by moving from coal to natural gas as an energy source.

I'm going to resubmit a document that I put out a little over two years ago, a summary report on Environmental Protection in a Competitive Electricity Market. This report is our most recent publication on this subject and contains an analysis of policy measures to promote energy conservation and renewable energy which we would like the select committee to consider for recommending in Ontario.

I'm going to focus my deputation today in relation to electricity generation and also focus on energy efficiency and renewable energy sources.

Starting with energy efficiency, I want to note that's the head of the chain as far as we're concerned in terms of priorities because energy conservation and efficiency measures are the best alternative fuel source that we have, and there's considerable potential there. They lead to lower energy bills for consumers, stimulate creative industry responses, and develop new market opportunities for entrepreneurs.

I'm going to talk about a couple of ways in which utilities can be given incentives to invest in energy conservation and in fact are doing it and showing that it works, and then come back to something I spoke about three years ago, which was the system benefits fund.

Utility-sponsored energy conservation programs: during the past 10 years, Pollution Probe has participated in Ontario Energy Board hearings to promote utility-sponsored energy conservation programs. Energy conservation programs not only stimulate pollution reduction, but also save money on consumer bills.

Ontario's electric and natural gas distribution utilities are ideal organizations to help residential, commercial and industrial consumers conserve energy for the reasons that they serve all the electric or gas consumers in their

franchise areas, they are trusted sources of energy information and services, and they're all regulated by the Ontario Energy Board.

In 1998, the OEB linked the profits of Enbridge Consumers Gas to its success at reducing its customers' bills by increasing energy efficiency. As a result of this profit incentive, Enbridge developed the best utility-sponsored energy conservation programs in Canada. Specifically, in 1999 Enbridge's energy conservation programs reduced its residential, commercial and industrial customers' bills by \$57 million. As well, under the OEB's shared savings mechanism, Enbridge's shareholders earned a bonus that equaled 8% of the total bill savings, or \$4.8 million in savings.

1120

The year 2001 projections for Enbridge are that it will reduce customers' bills by more than \$100 million. This of course will help with the province's anti-smog action plan goals as well as its Kyoto target that has to be discussed and dealt with in this province.

Unfortunately, the Ontario Energy Board has adopted regulatory rules that financially penalize electricity distribution companies if they reduce their customers' bills by increasing energy efficiency. Under their rules, if an electric utility reduces its energy conservation expenditures, the savings go to its shareholders, but if it increases spending on energy conservation, it can't recover its increased costs from its customers and it also loses sales, hence revenues and profits. Unlike Consumers Gas, the electric utilities are not eligible for a shareholder conservation bonus if they reduce their customers' bills by increasing energy efficiency. One of our recommendations is that the select committee look into this and recommend that the OEB adopt regulatory mechanisms for electric distribution utilities that reduce customers' bills by increasing energy efficiency.

The system benefits fund, often referred to in the US as a public benefits fund or various words, refers to benefits that are attributable to investments in energy efficiency and renewable energy. The most common way to assemble the fund is through a non-bypassable user-based charge, or what's called a wires charge in some areas. This charge ensures continued funding of public benefits that may be ignored in a restructured, competitive electricity system. According to the American Council for an Energy-Efficient Economy and the Union of Concerned Scientists, US state public benefit funding commitments exist for approximately 20 states and range from 0.1 to as high as 4.0 mills per kilowatt hour. In New York state, based on two years of analysis of operation, \$72 million was spent, generating \$54 million per year in savings and leveraging \$3 for every dollar of investment put in by the fund. The projected savings in energy use by the year 2005 are as much as 1,400 megawatts.

System benefit funds have a variety of potential applications from competitive bidding and auctions for new generation, incentives for emerging technology, research and development, green market development, economic development, education and so on. Pollution

Probe recommends that the committee study and report on these funds and consider recommending implementing an appropriate mechanism for Ontario.

Finally, renewable energy: any credible strategy to address smog and climate change will have to include policies that facilitate a very dramatic increase in the production of energy from what I'll call low-impact renewable energy sources, including wind power, solar, suitable biomass power, and low-impact hydroelectricity. Pollution Probe supports a renewable portfolio standard, and I'll speak to that briefly, as well as the recommendations of the Clean Air Renewable Energy Coalition, of which we are a member and which I believe is making a deputation to this committee, so I won't speak to that today.

The renewable portfolio standard, and I think you know this, requires electricity suppliers to include a specified fraction of renewable energy generation in their supply portfolio as a condition of doing business. The environmental benefits of course depend both on the level that's set for the generation sources and the sources that are being replaced by renewable energy. There's an economic impact that depends again on the level set and the premium that's paid for the renewable energy. I would note, though, that this premium in other jurisdictions changes over time as renewable energy technologies are developed, penetrate the market, and their cost comes down. So some programs sunset over a period of time.

According to the ACEEE and the Union of Concerned Scientists, renewable energy standards in the US range from 1% to as much as 30%. That reflects differing circumstances and political commitments of various states. Renewable portfolio standards in the range of 5% to 10% by the year 2010 are not uncommon. Again, it requires analysis and thought, but it's quite doable and there are a lot of states doing it. So we recommend that this be an issue that the select committee study and report on, and we would hope to see implemented an appropriate standard for Ontario.

To summarize, in the short time available in the last week and a bit, with the government keeping us hopping on emissions trading proposals, we really couldn't assemble the kind of expertise—we would have liked to flesh this out a bit, but we would like to participate with your committee through its deliberations and come back with more detail and updated information on issues of interest. Thank you very much.

Oh, one last mention. I can't table this today, but for about four months we've been working on a renewable energy primer. We send these primers out to everybody from the industry, governments, environmental groups for validation before we actually make them public, but I will submit this to the committee sometime in the next month or so as a finished product. It's meant to explain renewable energy in fairly simple terms, but there's a fair bit of content and useful information in this. I'm just not prepared at this point to table it, since it has some corrections to be made. Thank you.

The Chair: Thank you very much, Mr Ogilvie. It's good to see you once again.

We have about two or two and a half minutes max for questions, starting with Ms Churley.

Ms Churley: Thank you for your presentation. It's true this all happened very quickly, and we will have an opportunity later on, in the second phase, to come back to some people.

I wanted to mention that we had the OEB in on Tuesday, I guess, and certainly a clarification was made by Mr Laughren that they have to operate within government policy. So I think this committee, from what I understand, is quite interested in directing the government to direct the OEB to change its policy around this. We think it's critical.

I wanted to comment that energy efficiency and the externalities around the dirty fossil fuels that we burn are never taken into account when we talk about special financial incentives and efficiencies and tax incentives and those kinds of things. People throw their hands up: "We can't do that." But the reality is, the nuclear and fossil fuel industries have been subsidized for years. I think that's one of the issues we've got to get out there if we're going to be able to move forward on this.

Mr Ogilvie: In fact, I was looking around for information on the scale of the subsidies. I got some good US information, but I couldn't get the Canadian information I wanted in the time available, and my normal expertises were on holidays, so I couldn't put that in. But I would have made the same point, that there are massive subsidies behind nuclear in particular, and behind other forms of electricity, as well as wind and other forms, in the US and Canada and in other countries. Those subsidies have to be looked at because they not only create a market but they create a barrier to entry of new technologies. That would be a very valid line of inquiry too, I think, for the commission.

Ms Churley: Just in closing, we don't have time to discuss it now, but energy efficiency and conservation is on our list, you'll be pleased to know. I suggested it on the first day and the committee agreed to put it on as well. It's something I have a great deal of interest in, and it will be part of this committee's mandate to follow up on that. I'm glad you put it first, because I support your assertion that it has to be the number one priority.

Mr John O'Toole (Durham): Thank you very much for your presentation and your ongoing commitment to sustainable electricity and energy sources. We've really had some very informative input and documentation, and certainly your report, which I haven't had quite the time to go through.

I just want to comment and maybe ask a question on energy efficiency. As I think Ms Churley has pointed out, it is certainly the first step that's required to make sure we don't build more capacity on the generation side and keep abusing the consumption part of the equation.

We heard a very important presentation from one of the current municipal electrical utilities in the Owen Sound area, I think it was.

Interjection: Collingwood.

Mr O'Toole: Collingwood; pardon me. The off-peak loading I think is important perhaps in respect to the energy efficiency point you made here of lowering bills, and yet you said they can't, because of the OEB regulations, enjoy the benefits of trying to be more efficient. Perhaps you could just explain briefly what we could do. I know you've made a recommendation here on that.

1130

Mr Ogilvie: The mechanism simply says that if the utility—the gas companies do this; Enbridge does this—invests in something that saves energy for its customer, then there is no incentive to do that in a competitive market if you're losing sales and increasing your own costs. But if in the process you are going to be given back by the OEB some of that money as profit, you're going to in fact capture your costs back as well as a return on your investment, then the company has a business case basically to look for those savings and argues these things in front of the OEB in terms of targets and what's appropriate in terms of when they get savings and get money back. This is a mechanism that's worked extremely well for Enbridge.

What they didn't show is that before Enbridge had that shared savings mechanism, it never met its efficiency targets and there's a reason for that: it wasn't a good business case. So I think from a Pollution Probe point of view we're very pragmatic. We understand that business needs a business case, we understand that people need energy and so on, but there are huge opportunities out there to kind of realign the system and achieve multiple objectives that I think the government has said it really wants to get. I can get you more detail if you want; a lot of detail on specifically how Enbridge achieved its reductions, but you may want to ask them directly too.

Mrs Bountrogianni: Thank you very much for your presentation. We're looking forward to the primer in laymen's terms. We're looking forward to it very much, some of us who aren't engineers.

If we're sort of looking at short-term and long-term changes to effect better change in sustainable energies, in the short-term what would you propose to this committee to propose to the government?

Mr Ogilvie: Energy efficiency, of course, is the immediate opportunity. Again, the shared savings mechanism, that kind of approach where you have a win-win situation, runs itself once you put the framework in place. That's a very important short-term one.

Things like renewable energy require tax incentives, they require things that take a bit of time to get through the normal government channels. There's a lot of pressure on Paul Martin to come up with some consumer credits for renewable energy and so on. These things take several years usually to get through the policy process.

There are short-term opportunities in niche markets where consumers are willing to pay extra, but the history of this is that it's very difficult to get consumers to pay very much extra, or very much of the market to pay extra,

without some kind of massive public education and support. I think efficiency is there both in industry and in utilities. There are huge technologies on the market already.

The other piece I'd mentioned, because it's not divorced from this, is the emissions trading proposal which we unfortunately are having to oppose publicly today, whereas in principle we support a good trading system. It's been botched up badly. It's a mechanism that can actually put a price on efficiency, the carbon trading system, for example, that the greenhouse gas trading system will be a substitute for, say, tax credits down the road. People can save money by investing in renewable energy simply by getting a carbon credit. That's not in place. Ontario should put a pilot program in place. It might take a couple of years, or a year or so, to think out a pilot, but you could instantly give an incentive to many industries that have technologies on the shelf and could come and tell you right now that they can do it. But, again, the business case isn't there without some kind of a boost.

I think efficiency, as well as a properly designed emissions trading system, would drive the market. We, unfortunately, at this point, don't have one of those.

Mrs Bountrogianni: Right. Thank you very much.

The Chair: Thank you very much for the presentation. I would appreciate if you could table for us the difference between carbon trading versus emissions trading; you made a difference there. I'd appreciate that. Not now; we're out of time.

Mr Ogilvie: The trading system that's proposed now is for nitrogen oxides and sulphur dioxide. The one that's under debate, of course, is part of the Kyoto Protocol and internationally is greenhouse gas trading. The two are completely linked.

I could table for you a report that Pollution Probe did for Environment Canada on the co-benefits of dealing with greenhouse gases, because if you focus on greenhouse gases you're going to pull down a lot of air pollutants with it, and if you make greenhouse gases in the business case of the companies that are out there, then they will pursue that automatically too.

There are ways of lining these things up to work together, and I would encourage this committee to think in broader terms.

The Chair: Thank you very much for coming forward, and stand by for possible recall from the questions and some of your input.

ONTARIO TRUCKING ASSOCIATION

The Chair: Our next delegation is the Ontario Trucking Association: Steve Laskowski and Barrie Montague. Please state your names for the sake of Hansard as you start.

Mr Steve Laskowski: Good morning, everybody. I'm Steve Laskowski from the Ontario Trucking Association. I'm the manager of policy development. I'm joined by Barrie Montague, OTA's vice-president.

Very briefly, the Ontario Trucking Association has been an association since 1926. We have approximately 1,700 members, with revenues last year exceeding \$2 billion. What we'll do today is walk through some generalities regarding alternative fuels in the trucking industry. We'll walk you through our recommendations, what we believe the Ontario government should be looking at and should be doing, and then very briefly go through in more detail the development of the diesel engine and why the trucking industry and other modes of transportation use the diesel engine.

OTA supports the exploration of alternative fuels that provide the transportation industry with the fuel requirements necessary to support the provincial transportation freight sector and that improve air quality.

Regarding alternative fuels in the trucking industry, presently there are many such fuels under investigation. They include propane, alcohol fuels, biodiesel and liquefied natural gas. However, each alternative fuel brings operational issues, environmental issues, and issues of safety, availability and price.

For example, the Harvard Center for Risk Analysis did a study in 2000 and found that a frequent complaint from drivers who use liquefied natural gas, the gas that many proponents and analysts feel is the best alternative to diesel fuel in the trucking industry, was that there was a notable loss of power in the engine. Furthermore, the introduction of alternative fuels has been shown to have unforeseen problems in seals, gaskets, o-rings etc. Basically, diesel works for a time but the trucks have been breaking down. However, recent developments in a liquefied natural gas product show much promise in overcoming many of these difficulties. The product is in the test stages and may offer the long-haul trucking industry the same power, fuel and size requirements currently offered by diesel engines.

Nonetheless, even if these system requirements are overcome, an LNG distribution and refuelling infrastructure would have to be created throughout North America. In light of this issue and of the other issues I mentioned previously, there is no readily available alternative fuel source that offers the trucking industry the power and size requirements for existing payloads. For example, a recent study conducted by Charles River and Associates determined that if all the trucks on the market today had to switch from diesel to liquefied natural gas, we'd have to increase the fleet size by 50%. That would mean that in the United States you'd see an additional 1.1 million trucks, and in Canada 350,000 trucks.

Ultra-clean diesel fuel and engines are the viable alternative. Truck diesel fuel and engines are a much cleaner source of energy and transportation than they were just 10 years ago. Today it would take about eight trucks to equal the emissions from one truck just 10 years ago, and the news only gets better for the trucking industry. In 2006, we'll see ultra-clean diesel become mandatory on the roads. That will mean our sulphur content in diesel fuel will drop from the current level of

500 parts per million to 15 parts per million. This has a direct correlation benefit to particulate matter but, more important, it's a technology enabler for our mandatory engines that will be introduced in 2007, which will contain technology that will virtually eliminate such emissions as particulate matter and NO_x from truck engines.

1140

Our conclusions: Ontario should continue to explore and encourage the development of alternative fuels in the freight transportation sector. The trucking industry is doing it today. Our members and members in the United States are looking at alternatives to diesel. However, these are long-term benefits. In the short to medium term, the Ontario government, along with the federal government, should be looking at ways to encourage the introduction of cleaner fuels and cleaner engines in the trucking industry.

That said, here are our recommendations of how the Ontario government could go about helping the transportation industry become a greener factor in the environment:

First, recognize ultra-low-sulphur diesel as an alternative fuel and provide a tax incentive for its introduction. This diesel, as I previously mentioned, will become mandatory in 2006. In the UK, they gave a one-pence to three-pence tax credit on that fuel at the pump. With that, they saw that ultra-low-sulphur fuel achieve 100% market penetration six years ahead of planned schedule. Basically, if you make it cheaper the industry will flock to it, and the environmental benefits are considerable.

The second issue: encourage investment in newer regulated diesel engines. In California for the last three years they've provided tax incentives and tax grants to all freight transportation modes to get cleaner engines into their fleets. The California government has spent up to \$98 million in the last three years on these programs.

The Ontario Trucking Association is asking the government of Ontario and the federal government to work with us in terms of creating accelerated capital cost allowances, tax credits and a tax benefits system that will see cleaner and newer trucks introduced into the fleets at a quicker pace.

Third, review the Drive Clean program. OTA is a member of a seven-association coalition calling for review of the program. Ontario trucks are passing the program with ease, between 90% and 98% based on the model year of the vehicle. It's OTA's opinion that this government is currently using its resources inefficiently in that area and that it's best to redirect those resources toward a program that will immediately have more impact on air quality in Ontario. Recently, the National Academy of Sciences, which advises Congress in the United States on development, finished a report on I&M programs and it came to the conclusion that many proponents of programs like Drive Clean are inaccurate, that they are not as effective as their proponents claim.

Our fourth recommendation is to stop the tax break to dirty locomotive fuel. Currently, Ontario taxes road

diesel at 14.3 cents. They tax railway diesel at 4.5 cents. Since the province and other governments have said to the trucking industry that our diesel fuel taxes are not dedicated to roads, we don't see the correlation in the defence that our tax needs to be higher because we use the roads and the railways don't.

Trucking fuel contains 500 parts per million sulphur diesel, regulated. The railways have no regulations on their railway fuel. It can contain as much as 5,000 parts per million. The consequences of particulate are staggering on that fact. In the year 2000, the California Air Resources Board did a study of locomotive fuel at these kinds of levels and found that if the locomotive and railway industry was forced to use the diesel that trucks use, we'd reduce particulates by 38% for each locomotive.

Our last point, and again to emphasize this point, the trucking industry in Ontario is the only industry whose engines and fuel are regulated. The Ontario government has been silent on the issue of railway emissions and railway engines being unregulated. In the year 2000, the government of the United States began regulating railway engines for the first time. The EPA in the US has stated on record that this is the equivalent of removing 30 million trucks from the roads. OTA wants to make this point clear to the committee: our engine and our industry are clean; the railways are not. It's time the government started bringing some equity to policy forums on these matters.

Very briefly, I'll just walk you through the rest of our presentation in front of you of why diesel fuel and diesel engines are being used by the trucking industry. Four points: energy efficiency, packing efficiency, durability and reliability, and fuel safety. Basically, you get a lot more out of diesel fuel than you get out of other fuels in terms of being able to haul for the manufacturers.

Current emissions from truck and diesel engines and fuel: as you can see from the graphs, in the last 10 years it's been staggering on the truck diesel side. I guess this is one point I could leave with everyone: a diesel engine is not a diesel engine. A truck diesel engine is regulated; a diesel engine in a plane, in a boat, in a train is not. A diesel is not a diesel. Our fuel is cleaner; our engines are cleaner. So all the graphs you see here are diesel truck engines, not other engines.

I won't walk you through all the rest of them. I think the graphs speak loudly for themselves, that we are virtually eliminating our emissions.

On greenhouse gas emissions, again, our detractors in the railway industry like to claim that they are the saviours of Kyoto on this factor. Greenhouse gases are directly correlated to fuel efficiency. The more fuel efficiency we get, the lower our greenhouse gases will be. On that front, in the last 20 years we've doubled our fuel efficiency. In the next 10 years, the US government is going to be spending \$1 billion on a project called the 21st century truck project, again trying to double the fuel efficiency of trucks. In fact, last month NRCan issued a report on energy efficiency in the freight sector; it

covered the years 1990 to 1999. It stated that the for-hire trucking industry in Canada is the most energy-efficient mode of all the freight transportation modes. We saved 45.9 petajoules versus the railway industry, which came in at around 22 petajoules. What does that mean? It's the equivalent of the trucking industry taking 50,000 trucks off the road.

One of the other issues that you'll hear OTA say many times is that you're going to see more trucks on the road and we're going to get more of the market because of the way the market goes. Some would say, "Well, that's not a good thing for the environment. You may be cleaning up your engines, but how clean are they if there are more trucks out there?"

If you turn to page 7 of our report, what you see there is a red line signifying fuel consumption and fuel demand for the trucking industry. Basically, that red line is diesel consumed in Canada since 1990 and projections up to 2010. What the blue bars signify is that if the trucking industry alone consumed all that fuel, our emissions—and I'll bring your attention to the fourth chart; the fourth chart should have been hydrocarbons as opposed to COs. What it shows is that we will be consuming more fuel and there will be more trucks on the road. However, as you can see by the blue bars, our emissions virtually disappear. Trucks are good for the environment.

One of the other issues brought forward recently, and I'll close with this, is a study done for the three environment ministers—Anderson, Whitman in the US, and the Mexican environment minister—recently completed in 2000. It examined the proponents' claim in the railway sector that we should shift all the freight from trucks on to our rail cars and we're going to save the environment. Well, they did an analysis of this—again, this was for three governments; it had nothing to do with the trucking industry—and what it showed was that if you shifted all the freight from trucks on to rail in the Toronto-to-Detroit corridor between 2000 and 2020, you would have a 100% increase in emissions. It's directly related to the railway's use of dirty engines and dirty fuel and the trucking industry's corporate responsibility of taking on the additional cost of cleaner fuels and cleaner engines.

The Chair: Thank you very much, with that emphatic windup. We appreciate that. We have, starting with the government, about a minute and a half per caucus.

Mr Ouellette: Thank you for your presentation. Oh, Mr Hastings, did you have a question? Go ahead.

Mr Hastings: Mr Laskowski, specifically, what kind of pilot projects could we get started in terms of tax treatment and real comparators between low-sulphur diesel and biodiesel, if they could be linked in terms of engine efficiency?

Mr Laskowski: Those projects are currently going on. The problems with biodiesels so far are that, one, they have the increased NO_x emissions. The second issue is that because biodiesel is basically a compound of animal fat, there are issues with regard to the warranty. Biodiesel may have a place in this market; however, it's creating all

kinds of problems in the US market. They're being labelled as boutique fuels and are creating problems.

The issue of low-sulphur diesel fuel I think is a matter of simplicity. The petrol refineries, in particular Irving, are ready to go to market with it and are telling the trucking industry we're looking at a one-cent to six-cent increase in distribution costs. Well, the current cost of diesel fuel—right now we're at about 34 cents at the rack price—that's before taxes—on diesel. Provincial tax is 14.3 cents, which represents about 40% of the cost.

I think the pilot is simple: reduce your share of the diesel tax and you'll see this fuel being introduced into the market at a comparable or reduced rate, and the trucking industry will flock to it. Our number two cost is fuel, next to operating costs. It's a smart business decision and it's a smart environmental decision on the part of the government.

1150

Mr Bradley: I was interested in your comment about Drive Clean, what you found unacceptable about Drive Clean. You had some figures from the United States that it's not as effective as the claims that are made. What specifically are your concerns about Drive Clean?

Mr Laskowski: The Ontario Trucking Association supports the on-road program of Drive Clean. Make it a matter of record: if you are smoking down the road, you should be pulled over and fined and forced to clean up your engine. It doesn't make good business sense and it doesn't make good environmental sense.

What doesn't make sense about the Drive Clean program is its annual component. Two things: one, it forces trucks through the program annually, as opposed to cars bi-annually. Our pass rate is between, as I've said, 90% and 98% depending on the model year. Why force 90% to 98% of the clean industry to catch 2% of the population when your on-road program could? There is no other program in the United States, other than Massachusetts, that tie to registration. California, which is always hailed as the leader, does not have an annual program because they are cost-ineffective. Sure, you're going to clean up that 2%, but from a policy perspective and a taxation perspective, does it make sense to force a for-hire industry with its fleet distribution around North America to come in for a test that it knows it's going to pass?

Ms Churley: Thank you very much for your presentation. What I'm going to say I say with all due respect. Your comment, "Trucks are good for the environment"—I understand, I think, where you're coming from, but taken out of context I would submit that you might want to say that differently. Because I think this committee, overall, agree that, no matter how clean they are, fossil fuels going up into our atmosphere are not good for the environment. I think what you are trying to say is in comparison to some of the other fuels and the other examples you gave. Can you clarify that?

Mr Laskowski: I guess unless you've decided that we're moving to the days of Star Trek and we're going to

transport our goods and foods from one place to another—we need transportation.

Ms Churley: Nobody's disputing that.

Mr Laskowski: So if we are going to need transportation, we need to choose the most efficient and the most environmentally friendly mode. I will stand on that record. Our engines are the cleanest, versus rail, versus marine and versus air. So until there is a mode of transportation other than those four that I've just mentioned, trucking is good for the environment as it relates to the transportation of goods. We will stand on that commitment.

Until someone can come up—and it's not the trucking industry that's putting this forward; all this is from the United States Environmental Protection Agency, it is from the California Air Resources Board, it's from the NAFTA Commission, all the federal government. I don't see your point, unless you have an alternative to those four other modes. If there is another mode of transport that is cleaner than the trucking industry to move goods, then so be it. But today it's trucks. That may be hard for people to swallow, but the facts are the facts, and we stand by the facts.

The Chair: Thank you very much for coming forward in your presentation. The time has run out. We appreciate your input.

Mr Ouellette: I need a question to research. Can we receive the current or approximate costs of diesel fuel in the European countries, as well as the taxation rates for those fuels as well, please?

The Chair: No problem.

COMMITTEE BUSINESS

The Chair: Committee, we have a motion on the floor from a few days ago by Mr Gilchrist. Maybe we should address it and a couple others at this point in time.

Mr Gilchrist: I'm prepared to stand that down for the purpose of discussing the subcommittee report.

The Chair: Would somebody like to move the subcommittee report?

Mr Gilchrist: I'd be happy to do that.

The Chair: Discussion on the subcommittee report?

Mr Gilchrist: I have to read it into the record.

Your subcommittee on committee business met on Wednesday, August 29, 2001, and recommends the following:

(1) That legislative research prepares a summary of submissions/testimony for the committee by September 21, 2001.

(2) That legislative research in consultation with the Chair, clerk and members of the committee create by September 21, 2001: (a) an A list (within Ontario) of sites, experts, conferences, technologies, research facilities, and universities worth a visit by the committee; (b) a B list (North America, Europe)" etc—I'm adding the etc.

(3) That the committee members express to the Chair and clerk of the committee by September 30, 2001, their preferences for topics of interest and site visits.

(4) That the Chair has the authority in consultation with the clerk to approve site visits.

(5) That once the House resumes in the fall, the committee meet on Wednesday mornings from 9:30 am to 12 pm if necessary, or at the call of the Chair.

(6) That legislative research provides the committee with a draft interim report by November 15, 2001, and the final interim report by November 30, 2001.

(7) That February 15, 2002, be the deadline for the completion of research and site visits by the committee.

I move its adoption.

The Chair: Thank you very much. Discussion?

Ms Churley: Sitting on the subcommittee, I was part of the recommendations here, but I just wanted to make a friendly amendment, I believe, which is something I suggested at the subcommittee meeting. That is that all approved site travel be tabled with the committee. That's after you approve it—I assume that's a friendly amendment—so that we know where people are going, when and where, so we can keep track of that.

Mr Gilchrist: If you're suggesting, after the fact, a summary, then I would consider it a friendly amendment. The Chair has been given the authority under this to make the decision. It's not everybody get together and decide whether going to a specific site is appropriate.

Ms Churley: I thought I was clear that—

Mr Gilchrist: No, you weren't. That's why I'm asking the question. You're saying that after the fact, in the normal course of business, the committee would from time to time continue to update members as to the budgetary expenditures in all categories?

Ms Churley: Yes.

Mr Gilchrist: Excellent. I have no problem with that being added to my motion.

The Chair: Clear? Thank you. Further discussion?

Mr Ouellette: Two quick things to point to.

Interjection.

Mr Ouellette: No, actually, there are two amendments.

On point (1) the summary of submissions done by September 21: can we have that summary done by sectors as well so that the wind power is summarized all together—

The Chair: That's how it will be grouped, yes.

Mr Ouellette: And then to point (5). I move from 9:30 to 10.

Mr Gilchrist: Starting time?

Mr Ouellette: Yes.

The Chair: Are you trying for a friendly amendment on that, or do you want to put—

Mr Gilchrist: I'll accept that as a friendly amendment.

The Chair: Other people like that?

Interjection.

The Chair: No, starting at 10, not ending, but I like your idea. So from 10 to 12 rather than 9:30 to 12.

Any further discussion? So two friendly amendments. You're clear? Those in favour?

Clerk of the Committee (Ms Tonia Grannum): Of the amendments?

The Chair: No, they're friendly amendments, so—

Clerk of the Committee: There's really no such thing as a friendly amendment. An amendment is an amendment.

Mr Gilchrist: Would you like me to reread the whole motion?

Clerk of the Committee: Or you could just amend—there was one amendment to number (4), maybe, and number (5).

Interjections.

Mr O'Toole: I'd like to hear Ms Churley's amendment read into the record.

Mr Gilchrist: I restated it.

Mr O'Toole: I want to hear what she said.

Ms Churley: I simply said, and Steve restated it so that it was more thorough, that I would like the amendment to read that the approved site travel be tabled with the committee. You had clarified that a little further, Steve. What was your wording?

Mr Gilchrist: Might I suggest that you want to be more encompassing than that, because I think we want to see the expenditures in every category, that from time to time the Chair and the clerk shall table a summary of all expenditures by category.

Ms Churley: That's perfect. That's my amendment.

Mr Gilchrist: So moved.

The Chair: Ms Churley's amendment, as stated by Mr Gilchrist—

Mr Gilchrist: Mr Gilchrist's amendment, thank you.

The Chair: All clear? Discussion?

Those in favour of the amendment? Those opposed? The amendment is carried.

I believe there is a second amendment.

Clerk of the Committee: Well, we could just do it; that's fine. I could just change it to 10 o'clock.

The Chair: That's allowed?

Clerk of the Committee: OK.

The Chair: So we've changed item (5) from 9:30 to 10, and I'm told we're not required to vote on that as an amendment.

Clerk of the Committee: So now we're just to vote on the subcommittee report, as amended.

The Chair: On the subcommittee report, as amended: those in favour? Those opposed?

The subcommittee report, as amended, is carried.

Mr Gilchrist: I'll be pleased to withdraw the motion I tabled on Monday.

1200

The Chair: I thought you had.

Mr Gilchrist: No, I said pending the acceptance of this.

The Chair: We have a motion circulated from Ms Churley.

Mr Bradley: Mr Chairman, if I could tail on just a little bit on the last one, and it's because you can't have one member dictate what happens with the committee. I am the Chair of the government agencies committee,

which meets Wednesdays at 10 am. Because of the numbers we have here I don't want to say—but that may be the most practical for everybody else. If it is, it is, and I can find a substitute from one to the other, depending on the circumstances. It's just a dilemma we face as members.

The Chair: It was one picked by the subcommittee that they thought was in order.

Mr Bradley: I understand, and that's why I'm saying I just want to note that if you don't see me sitting here at that time, it's not that I'm going to be evading the committee; it's going to be that I may be chairing another committee and coming in late or coming in early or whatever.

The Chair: It's possible that we could look to House leaders who are scheduling committees. Maybe there's a possibility of finding another time slot that this committee could sit that wouldn't conflict.

Mr Bradley: Sure. The only point I want to make in defence of the motion is that no matter what you are going to pick, you are likely going to find members of this committee who are members of other committees, and I simply wanted to note that, rather than say, "I don't want the committee sitting Wednesday mornings."

Mr Hastings: How frequently do you sit on Wednesday?

Mr Bradley: Almost weekly.

The Chair: We have a motion that was circulated by Ms Churley yesterday, I believe. Do you want to bring that forward now?

Ms Churley: Yes. I'll read it into the record and then I'll explain why I'm moving it.

Whereas there are many new proven green alternatives to old polluting energy production, and

Whereas waste incineration and nuclear power are old technologies with significant negative environmental impacts and risks and high costs,

"Therefore I move that both waste incineration and nuclear waste, which have been suggested as alternatives for this committee to examine, be excluded from this list for the purposes of research by the select committee on alternative fuel sources.

I make this motion because there was a semi-motion, although it was put forward as a recommendation by Mr Gilchrist. In his recommendation, if I may explain why I'm doing this, Mr Chair—I don't believe he has ever moved it as a motion.

Mr Gilchrist: Yes, I did.

Ms Churley: Did you? But that's the one you just withdrew? OK.

Mr Gilchrist: There's already something that's not relevant.

Ms Churley: No, this is still relevant. If you will just hold your tongue for a second and listen; this is important.

In the list of recommendations you were making, the motion you withdrew, you mentioned that we would divide up the categories of alternatives as interest dictates. You took it upon yourself—and I appreciate the

fact that you did this work—to describe what some of those might be. You mentioned “wind, solar, biofuels (biomass, biodiesel, ethanol), landfill gas, waste incineration, waste oil, geothermal (deep mine, deep water, heat pumps), hydroelectric, nuclear, hydrocarbons (shifts within range of petroleum products, use of additives), hydrogen/fuel cells, plus conservation strategies and financial impacts,” and space for more.

I realize that motion has been withdrawn, but it does leave us in a particular, I would say peculiar, situation where we haven't defined, as this committee, what alternatives we will be looking at. We've been asked, and I think we all agreed as a result of the motion by the subcommittee we just passed, that each of us would determine which alternatives we want to look at. I've already suggested I'm very interested in energy conservation efficiency and financial incentives and instruments. Others have mentioned some other interests.

My concern is that we have no boundaries here. I would personally agree with all of those on here except for the two that I mentioned. Let me explain. First of all, I believe we need to define, and the fact that this motion has been withdrawn means that we don't have a list or any common agreement on what it is we'll be looking at. But I particularly want to make sure that these two are not included on any list that we should compile as people express their interest.

Let me tell you why. Nuclear power, as we know, has been around for quite a long time now and produces massive amounts of radioactive material. It's material that nobody, no government, to this day knows how to store safely. It's continuing to build up and it's been suggested it would cost billions to store it. It's old technology with substantial problems associated with it. It's also massively subsidized by the taxpayer to this day even though it's been privatized now.

Waste incineration—in the interests of time I'll try to speed this up. As people know, I have a long history in it and it's been around for a long time, particularly in Europe, where they have a problem with land mass for landfill. But it's falling out of favour in Europe now. It's seen more and more as an old technology. Even though we hear, “With the latest technology, the latest pollution abatement equipment,” it still produces some pollution that goes up the stack. The other reality is that the better the pollution abatement equipment is all that stuff, the more hazardous is the fly ash that's produced which has to be dealt with, which has massive environmental implications.

The other problem with it is that—and I'll sum up here, Mr Chair, so we can go and have lunch—we need to be looking at more green ways to deal with our garbage as well. We need incentives to do that. Having trouble landfilling garbage gives us that incentive to move on to composting and other green ways of dealing with it, and that takes away from that incentive.

Having said those things, I think it is really foolish for a committee that's supposed to be looking into the latest green technology, so we can start the process of getting

us out of this mess we're in in terms of saving the planet and people's lives, to be looking at those old technologies when we know they're outdated. We should be looking forward and not wasting our time on those particular outdated methods that we have the information about.

I hope I can get the support of the committee so that we can spend our time in a useful way looking at the new technologies, the green technologies, which in my view is the purpose of this committee.

Mr Gilchrist: Marilyn, without disagreeing for one second with anything you've talked about, the known old technology on which you're basing your decisions, it would be hypocritical of us in the least, when you look back to the words we all used on the first day this committee met, to suggest that we not have our eyes and ears open to anybody who wants to come into this committee and talk to us.

If you're presuming now to know the answers, I would invite you to write the interim report today. But, Marilyn, I'm going to tell you that you've left out, for example, the ITER project, nuclear fusion, not nuclear fission. You've left out the fact that for remote lumber mills the opportunity to combust their own sawdust in some form is their preferred choice, looking forward into the future.

I have no idea what technology is out there around the world or what might be under development that someone could come and talk to us about. We've had lots of presentations already from people, including some this morning, who want to talk about making diesel fuel better or gasoline better. You have not dismissed them, even though the root cause for this committee's existence is the pollution being put out primarily by gasoline and diesel. So if we're prepared to listen to people talk about how you make gasoline better, I truly don't understand, at this stage of the committee's work, why you would presume to ban somebody who wants to come in and talk about how nuclear might be made better or incineration might be made better.

I don't want to leave you with the slightest impression right now that I would be championing either of those things as the way to evolve from our status quo energy creation. But to suggest that we not listen to people sends out exactly the wrong message and a totally contrary message to what you and the Liberals and we said on the opening day, that we were prepared to listen everybody on every technology and then we will make a decision as to which technologies we recommend. I have every expectation that after we've heard everything, you will be a very strong opponent to the status quo in those two areas. But to suggest that we not listen to people at this stage is just totally contrary to what I thought this committee was all about.

The Chair: Mr Bradley or Mr Parsons. I think your hands went up simultaneously.

1210

Mr Bradley: I would make this comment. I understand both arguments that are made. I look at this, the alternative fuels committee, as looking at something that

is new and different as opposed to those which exist today, although I think Mr Gilchrist does make a point that there are modifications of certain fuels that can make a difference.

I personally did not contemplate nuclear waste—and I'm talking about the waste itself—as being one of the fuels we would be looking at as an alternative fuel, nor did I contemplate we would be into garbage incineration. It may well be that someone else somewhere else in this government or in this Legislature may look at those issues in a different context. It's my opinion—and I realize each of us probably has a slightly different opinion on these—that we should be excluding the two Ms Churley has made mention of, because I really do not look at those as fitting the alternative fuels committee mandate.

I'm not denouncing what anybody else is saying. I understand some of the other arguments that are being made on the other side of this issue, and there are many initiatives being brought forward to us that I'm a bit sceptical about to start with. But I do believe that both nuclear waste and garbage incineration should not be within the mandate of this particular committee.

Mr Parsons: Just to show we didn't get together on this, I also appreciate that there are downsides to nuclear and the burning of garbage, but I would question the use of the phrase "old technology." Computers are old technology, but they're going to continue to grow and expand. As an engineer, I believe I have to study the issue before I take it off the table. I know there are problems with burning garbage, but I also know there are problems with burying garbage in the ground. In burning garbage, at least I have some sense of what's happening. When I bury it below the ground, it shows up for my children or grandchildren. Yes, we have to address that issue, and we're not working in isolation. I personally would favour studying the issue. Maybe ultimately I will vote against it as an alternative, but I'd like the opportunity to study it.

Mr O'Toole: I think we are all reasonably informed in those areas. Certainly I don't disagree with the statement Ms Churley made with respect to the management of nuclear waste. Some of the new technologies are in fact planning on incinerating that waste. I have two nuclear plants in my area. The ITER project is proposed—the Canadian site is in my riding—and it uses nuclear waste or by-products of the nuclear reaction process.

So I certainly won't agree to having it removed as I become educated about the alternatives; I certainly am open at this point in time. The other part is, I agree completely with Mr Parsons. I sat on the interim waste authority as a regional councillor and listened to all that stuff for years. Old technology is dumps. That's old technology. No one knows the leachate and the compounds that change over time. The only difference between fly ash and residual waste in dump sites is that one is in liquid form and the other is in ash form. All the decomposition that occurs over time is contaminated waste generally. I had their applications in my riding and

probably most of the ridings across this—Mr Parsons and I are both on the cement caucus to incinerate some forms of waste. Those applications would replace what we would call fuels today. I understand the statements part of it—

Interruption.

Mr O'Toole: —that you are trying to make, but I think it would be immature and irresponsible not to listen to the whole debate and the full input. Part of the other voice you hear is my more angry side. But I appreciate the point.

The Chair: I draw to your attention that it's 12:15. We will start at 1 o'clock, because we have three video conferences. I would remind you that you're eating into your lunch hour—no pun intended.

Ms Churley: Yes, and I haven't had breakfast. It's fairly clear that I'm not going to win this motion. I appreciate the comments that people made. Just very quickly: old technology, Mr O'Toole, is dumps and incineration.

First of all, to Mr Gilchrist, the motion reads very clearly that this committee should not be spending time researching these two particular alternatives. If you look through, we've had many presentations, we've got many, many more today and this evening, and, interestingly enough, I don't see one for either nuclear or energy from waste.

Mr Gilchrist: What's your problem?

Ms Churley: Just hold your horses, Mr Gilchrist. Don't panic; it's OK. None of them has come forward to give a deputation. If they wanted to, I don't see a particular problem with that. I am very specifically trying to remove those two, though, for the purposes of our research. So far nobody's even come to talk to us about those, which I think is telling in itself. We've been presented with so many newer, exciting technologies, and I think it would be a shame and a blight on this committee and to many out there who are looking forward to having this committee look at the new green technologies.

I really think it would be a shame for us to have people running around looking at nuclear plants and garbage incinerators when we have all these other exciting technologies to look into and recommend. It would be a giant step backward. There are people out there who are nervous that there is a hidden agenda with this government—I'm just expressing what people are saying to me—and that more nuclear is part of that. I think it would send out a very positive message if we made it clear that we're looking at newer, greener technologies to recommend that this government move forward on.

Mr Ouellette: Mr Chair, in regard to the comments on the motion put forward, yesterday I asked a question of Ethxx, and the response that came back to me was, "Is there carbon in it?" When I was asking the question, it was about yard waste, leaf waste and other areas. To me, that process was completely enclosed incineration of some form or transformation of the carbon molecules found within that to create ethanol. I looked at that as a

possibility for utilizing garbage or waste that would go to the sites. I think those individuals who want to look into those various areas, whether it's incineration or nuclear, should have the opportunity and we shouldn't limit those people who want to review that.

Mr Hastings: My point on this is that I at least come to this committee with an open mind, and I think we should be looking at all the possibilities. That doesn't necessarily mean right away—somebody might want to conclude I'm an advocate of incineration, but I think you've got to look at what's happening in these fields. If you look at the garbage dump situation, there are companies now working on using the application of enzymes. Is that a way of reducing our garbage dumps? We've got to look at everything. It doesn't mean we advocate those. As far as I'm concerned, if somebody wants to infer there's a hidden agenda, I guess it's a free world and they can do so. It doesn't necessarily mean that there is.

In my estimation, you look at all the possibilities and then, as Ernie says, you come up with your best conclusions after the research, your own thinking, and we come to a consensus, hopefully on everything, but it will not necessarily be on everything. But we look at it, and then we move on.

The Chair: Dr Bountrogianni, you're the only one who hasn't spoken. Further discussion?

Ms Churley: Could we have a recorded vote?

Ayes

Bradley, Churley.

Nays

Bountrogianni, Gilchrist, Hastings, O'Toole, Ouellette, Parsons.

The Chair: I declare the motion defeated.

Just for your benefit, after lunch you'll find in front of you a list of suggested additional invited guests that our researcher has put together—some of his thoughts, some of the people who have presented, something we might be thinking about for our Wednesday mornings when the House resumes and possibly look at suggestions you people may have as well, as we work into the fall term. We're looking forward to your suggestions. If you like this list, let us know. Maybe we'll address that at the supper hour or later this evening.

We're now recessed until 1 o'clock. Please be here at five to 1 so we can start at 1 o'clock, because it's a videoconference.

The committee recessed from 1220 to 1303.

VISION QUEST WIND ELECTRIC INC

The Chair: Our first presenter this afternoon, by videoconference, is Jason Edworthy, Vision Quest Wind Electric Inc. I'm having just a little trouble, Mr

Edworthy, with getting some of my committee members here on time. My apologies to you for starting a bit late. We've set aside a 20-minute block, so we'll give you the full 20 minutes, no question. The way the committee operates is that after your presentation, whatever is left over of that 20-minute period we'll split between the three caucuses for possible questions. Please state your name and begin, as you feel comfortable.

Mr Jason Edworthy: My name is Jason Edworthy. I'm executive director in charge of communications for Vision Quest Wind Electric. Vision Quest is one of Canada's largest private wind energy firms. We've been operating in a competitive, deregulated market since 1996, and we own and operate a little over one third of Canada's installed wind energy capacity. We're finishing installation of 60 large wind turbines approaching 41 megawatts of installed capacity.

I've been in the wind energy business for a little over 20 years. I've been a past president of the Canadian Wind Energy Association. I was involved with one of the first wind farms. The track record we've got includes the kind of activity our principals have had since 1980, also being involved in very early good connected wind turbines; the first wind farm up in Cambridge Bay in the Northwest Territories, now Nunavut; and also the large Cowley Ridge wind plant in Alberta that was put up in the early 1990s.

Since 1996 we have had a deregulated market, which gives us a lot of experience in being involved in selling wind energy and owning and operating the equipment.

I wanted to tell you briefly what we're doing in Ontario. We are a licensed retailer in Ontario and we have an application in for generation. We have a number of wind energy sites that we're planning to develop and that we are currently working on, including a planning application in Prince Edward county, which I understand is probably dear to the heart of Mr Parsons. We plan to supply wind energy in the market at or near to market opening next year.

What I want to tell you about are the benefits of a thriving wind energy industry in Ontario and some recommendations we've got to get there, and then I'd like to be available for as much question time as possible.

One of the things I like to say when I come to Ontario and talk about the benefits—in fact, anywhere I go—is that what we'd like to do is come there, hire a lot of people, invest millions of dollars and pay taxes. We find that's a pretty good message.

One of the things that is another very important benefit to Ontario is the health benefits of wind energy, particularly with the smog considerations along the Windsor-Toronto corridor. Replacing fossil fuels with wind energy production in the province has got to be a very important consideration.

The first recommendation I've got to pass on to the committee today is that the provincial government should make a strong statement supporting the development of wind energy in the province and outlining its benefits: no emissions, low on-site impacts for power plants and the high degree of rural investment.

What we're doing this year in southwest Alberta is resulting in about 14 to 20 jobs locally, about \$3 million locally and a number of permanent jobs resulting from that. We're talking about the benefits of wind energy, which are very quick construction times and a unique relationship with rural farmland. We're putting wind turbines on farms, providing a second cash crop for farmers and in essence preserving farmland.

It would go a long way toward removing a number of incorrect public perceptions about wind energy to do this. I would suggest that if the government is quiet or neutral on the issue of wind energy, it might imply to the public that the government is not in support of wind energy or that it's a low priority.

Our second recommendation is that it would be helpful to prepare an objective information package for consumers as well as the general public about wind energy. This would also be of use to municipal governments that may be considering developments in their area. This could cover everything from, what are the considerations around wind energy, what are the impacts of it, to what are the kinds of issues that are required for planning purposes such as sound, public safety and environmental considerations?

I know that the Canadian Wind Energy Association would be pleased to participate in that, and I would suggest that having a nationally recognized environmental organization would also provide some assistance and support. Again, without that kind of support, it would undermine, and is currently undermining, the ability for developers such as ourselves to attain municipal permits, and that's really due to a lack of awareness and experience with the technology.

A very important, very easy and very sound recommendation I'd like to provide to the committee is that the province should provide access to transmission and subtransmission grid information to help developers in identifying potential wind energy sites. What I mean by this is that the information about transmission lines and lower voltage lines is currently in the hands of Hydro One and is not publicly available. As we understand it, Hydro One does not have competition because they're the sole owner of the high voltage transmission lines, and this lack of access to the information is creating a significant barrier to the industry by not making transmission information easily accessible. Again I would suggest this is a very easy recommendation to implement and it's very important for our industry.

1310

We'd like to suggest that the provincial government consider implementing a renewable portfolio standard, where retailers of electricity are required to source a portion of their wholesale power from clean energy sources such as wind. While we're not in favour of direct subsidies or special support for the wind energy industry, we do favour these where they put us on a level playing field or in harmonization with our trading partners.

The United States has a production tax credit for wind energy that is federally implemented and many states

have renewable portfolio standards that provide this kind of leg up. It's certainly drawing Canadians to the wind energy industry in the United States and it could, if we ever have the same opportunities here, result in our buying the required wind energy that we'll need in the future from US sources. We believe that a renewable portfolio standard could be ramped up to provide 10% green power by 2010, and this would put us in line with many of the US states directly across the border and with such states as Texas, for example, and would mitigate the opportunities we don't have because we don't have a similar production tax credit that the US has.

Another very important one that is provincial is that the threshold requirements for environmental assessment for wind in Ontario are currently exactly the same as coal. It's much easier to do environmental assessments for burning toxic waste, for example, in municipal generation facilities, up to 25 megawatts, whereas the threshold for wind is only two megawatts. Wind is the most benign energy source that we have in Canada, and we do not understand why we would have such a high threshold of requirement for environmental assessment. In Alberta there is no requirement until we get over 100 megawatts for wind.

We'd like to applaud the provincial government for moving forward on deregulation and we want to encourage that that continue, but it is important to ensure that the rules of deregulation as they come into place do not inadvertently penalize or discriminate against environmentally friendly energy sources such as wind. What that means is that it's important to consider and keep in touch with the industry as these rules come into fruition and as we gain experience in them.

The government should also ensure that all provincial permitting processes for wind energy are efficient and not overly cumbersome. One of the big advantages of wind is that we can put small increments on very cost-effectively at very quick speed. So it's very important that red tape that might increase transaction costs for an environmentally beneficial industry with already slim margins is not increased. In fact, it should be looked for and removed. I would suggest that the province could work with municipalities to do the same thing.

The wind industry in Ontario needs the support of the provincial government in order to bring significant environmental and economic benefits to the province. This will not be in the form of handouts or subsidies but rather removing the red tape and barriers, creating a level playing field with the existing incumbent industries.

Most important, we know that Canadians and the citizens of Ontario want clean energy, and in particular they want wind. An Ontario Hydro study in 1995 found that nearly 70% of Ontarians want to be able to purchase green power, and subsequent federal studies have confirmed this.

We in Vision Quest look forward to working with you to create a thriving wind energy industry in Ontario and expanding in Canada. That's the conclusion of my remarks.

The Chair: Thank you very much, Mr Edworthy, for a most interesting presentation. We have heard from some others on wind energy and it's certainly tweaking the interest of this committee. We have about two minutes per caucus for questions and we'll start with the official opposition.

Mr Parsons: I appreciated that presentation. I have a sense from people I've talked to in Alberta, where you have windmills, that it's not a problem. The community doesn't seem to perceive them to be unsightly or noisy or anything like that. But I get some sense in Ontario that because they're new, there is still some misunderstanding. I'm wondering what you think can be done to better educate people in Ontario, not just to your firm but to the windmills.

Mr Edworthy: Absolutely. I fully understand that. I think the main concern is the unknown and a bit of a fear of the unknown, or at least concern about it. Certainly we have had, through a small program that did support wind energy, or at least encouraged it and allowed it to come on from the mid-1980s forward, experience, and we're most active in the municipality of Pincher Creek. They have actually gone out proactively looking for our industry and that's been a big help to us. We don't have that decade of background in Ontario and certainly not in Prince Edward County, for example. So I think that what we need to do is encourage a start, go in slowly and get some experience with it.

One of the things that we're doing is looking at opportunities for key members of communities to visit wind farms and wind facilities to see what they're really like. It's fairly easy to travel to Buffalo, New York, and see some existing ones, and certainly we have extended an invitation to this committee to visit our facilities in Alberta. We'd be very glad to do that. Once you see them, you can believe in them. Everyone I've ever taken up to the wind farm and to our wind turbines has always said, "I thought they were noisy. They're not." They talk to the community members and they find out that the young people have jobs, they get to stay in the rural area. You talk to the farm owners and they say, "This is fantastic. We've got a drought this year but we're still in business because we have these wind turbines on the land."

Ms Churley: Thank you very much for your presentation. We've had a number of people come in, talking about wind power and I can tell you that we're getting educated here, which is a good thing, because we know that we're behind some of the European countries here in Ontario and, indeed, Canada.

I'm the NDP environment critic here. One of the concerns that I received from some citizens where a turbine was to be built was a concern about birds. I know that lots of birds are killed in the city around the tall buildings, running into the windows in tall buildings, but I wonder if you could comment on that and if that's been a problem.

Mr Edworthy: This all stems from some very early—in the 1980s—facilities that were situated in unfortunate

locations. The industry has learned and it's been at least 15 years since those incidents. One of the things we always do as a company, and I believe all of our industry does now, is have environmental screening early on, whether it's required or not, because as an environmental industry, we don't want to be in the wrong spot. We want to be in the right place.

We've now grown large enough that we can afford to have biologists who come on and study our sites. We're just concluding a spring migration study at our site and we have a full set of weekly examinations of our site. It's not a great title: It's "Looking for Carcasses." Do we have any problems? In fact, because there is the chance for predators to scavenge and take them off, they even put chicken carcasses out and monitor whether they disappear or not. So it's a full scientific study. The results to date are, across Canada where wind farms have been monitored, we know of three bird fatalities which have turned into 300 and 400 operating turbine years, which is very insignificant. None of them has been hit by blades. Two birds we are aware of have hit towers and one took shelter in a mechanism where the machine turns to face the wind and got caught in the oil.

In a recent migration study we have found no interaction with any raptors. We have found that a few mourning doves apparently have hit towers and that's now where we have a lot of machines. But we're still talking about less than five birds with a lot of machines, so they're not significant population impacts. We're still very concerned about it and we're very careful to site to avoid these. The most important thing that we've been told by our biologists is that this is not a significant problem when you site them carefully.

Ms Churley: I'd be interested in that study. Thank you very much.

1320

Mr Hastings: A very intriguing presentation. Two issues: how did the Alberta government and the Alberta Ministry of Learning handle any new job training that you guys proposed, or what adjustments have to be made to the labour market for this industry in terms of specific skills? And secondly, access to capital: I understand Martin's budget of 2000 had a Canadian renewables and exploration expense, which is a flow-through share arrangement, as does Ontario for mineral development. Why are these things not being taken advantage of, especially the Martin thing, nationally, similarly as if you have a carbon-based flow-through share arrangement?

Mr Edworthy: Thank you for the question. First of all, in learning, I'd like to think that we had enough impact on the labour market to date that that was a concern and we've been on the radar screen. Unfortunately, we aren't that big. But there's a lot of interest. We've had the old college, which does training on oil land men. They have altered their course to look at wind energy land people now. In fact, we've done all our own in-house training. We've sent people to Denmark, we've sent people to California to do the training. We've received no subsidies or support for that at this date. It may just

simply be my Alberta background, but it didn't even occur to us to ask. We've just considered that a cost of doing business. We now have had such incredible support from our manufacturer out of Denmark that they have established a service facility right near us and that's providing some training as well.

I would suggest that the same kind of high-level technicians that we need in the modern automobile industry, in the modern aircraft industry, are the same kind of people we need right now for installation and maintenance. As we grow bigger and increase the market, we will, however, have manufacturing opportunities. We have started manufacturing of towers here in Alberta and there's certainly been a lot of learning going on there. It's taken two years. I'm not aware of their accessing any support for that either. But I think if we're going to really take advantage of this opportunity and plug into the worldwide boom, that's an approach we need to look at, and certainly we'd be glad to provide some advice, along with our manufacturers, to do that.

Regarding the SURCE, as we call it, the support and flow-through, I have to admit that we were intimately involved in working with the federal Department of Finance on that. We install what we call exploratory turbines on new pieces of wind land. We find this extremely important for us to determine, from very small anemometer cups to very large rotor sizes, if we indeed have the resource we think we've got. That kind of real-life production and revenue is extremely important in raising capital, so we have taken advantage of that. It's been very useful. For example, with the Castle River Wind Farm, the picture of which is behind me, we will have 60 wind turbines there this year. It covers about four square miles of land and we had two different exploratory turbines quite a way apart from each other to help us decide that this is where we wanted to do the investment.

The most important factor in raising capital is having a good market which is treating us fairly and allows us to have good, solid contracts that we can bring to the bank and that we can bring to investors. With a good power purchase or energy purchase agreement in a market that treats us fairly, we can bring in all the capital we need, whether it's from Bay Street or Calgary or from overseas.

The Chair: We've run out of time. We really appreciate your presentation and response to the questions. We may be back asking you for more input in the future, but time is up now. Thank you ever so kindly for joining with us.

Mr Edworthy: I appreciate the opportunity very much. Thank you.

The Chair: It's my understanding, committee, it takes a couple of minutes to switch to the next video conference, if you wanted to get a drink of water or something.

While we're waiting, does anybody have any comments on this list that research has circulated as people we'd like to invite to have chats with?

Mr Hastings: I have a few more.

The Chair: Feed it to research.

Mr Gilchrist: Just while we're waiting, Chair, the list that Jerry has sent out—forgive me if I missed the discussion on that—

The Chair: No, I just started it. Really, what we're looking for, if you're in favour—

Mr Gilchrist: I was just going to suggest that perhaps as the first step a letter be sent to everyone soliciting information, as Jerry has outlined it there, and then, depending on their responses, we'll plug them into meetings at some point in the future.

The Chair: To the technical people, we're ready to go any time. We're just casually chatting here in the meantime.

ECONOWOOD HEATING LTD

Our next presenter is Econowood Heating Ltd, and it's by videoconference. It's Henry Rasmussen, owner, if I'm pronouncing that correctly. You have a total of 20 minutes, sir. What's left over from your presentation will be divided for questions among the three caucuses. You may begin now. Please state your name as you start, and the time's all yours.

Mr Henry Rasmussen: My name is Henry Rasmussen. I'm going to talk about wood as a viable alternative heat. Do you hear me now?

The Chair: Loud and clear.

Mr Rasmussen: Great. As already stated, my name is Henry Rasmussen. I live and work in Kenora, Ontario. I'll just launch into my tirade here. It won't take a full 20 minutes, and it's speaking about what I learned as a manufacturer and distributor of wood-burning appliances.

Here in northwestern Ontario we frequently experience heating seasons that extend from mid-September until the end of April. During the months of November, December, January and February temperatures of minus 30 degrees Celsius are not uncommon. These long winter months put a severe strain on most heating systems as well as on our pocketbooks.

From 1978 until the late 1980s I manufactured and sold my own line of wood-burning space heaters for which I hold the North American patent rights. From the outset, my motivation was to develop and provide a safe and environmentally friendly wood-burning appliance, one that, while simple to use, would be clean-burning. I was fully aware that a clean-burning unit had to burn off all or most of the gases during the burning process and consequently not allow creosote, the bane of space heaters, to form. This I achieved to some degree.

During this period, I paid particular attention to installation and heat distribution methods. I learned that the most efficient installation was one where the unit was positioned near the centre of the home to be heated, where the chimney ran through the inside of the house and never on the outside of the building. In basement installations a simple plenum worked with no fans required.

During follow-up visits to people who used wood-burners, I was able to observe how different individuals handled wood-burning, including the drying and storage of their fuel source. I encountered some surprising situations and I came to realize that this deceptively simple procedure was not that simple a science. Generally speaking, people from rural or small-town backgrounds such as myself who had not totally succumbed to the age of the thermostat were able to master wood-heating on a day-to-day basis. Others, never having experienced wood-burning during their lifetime, found wood-burning difficult to adapt to, onerous and, in some cases, frightening. For these folks, wood-burning tended to be a short-lived experience.

Throughout much of mankind's history it would have been the main source of heat and warmth. The move back to this type of heating may be viewed by some as a regressive. Instead, I see it as a step in the right direction.

1330

The earth has evolved with wood fire occurring in nature. A forest's normal progression includes growth, decay and fire on a continuing basis, constantly renewing itself in an endless cycle. Fire in itself has always been, and continues to be, an important component of a healthy forest ecosystem.

There are serious doubts whether man would have evolved or even survived as a species without the benefit of fire and the use of wood as fuel. Utilizing wood has provided mankind with much scope for inventiveness and imagination throughout his history. A wise society does not discount the hard-won lessons of those who came before us. We can learn a lot from the trials, mistakes and successes of our forbears.

The last few years have seen a resurgence of the large tile and masonry wood-burning stoves initially developed in northern Europe centuries ago. The original concept of these heaters was simply to create a mass of rock that held and stored heat, which then radiated into the dwelling. Modern construction methods have steadily refined and improved upon this marvellous idea by utilizing proper chimneys, for instance, something that was lacking until less than a few hundred years ago.

To say that I am impressed by the modern version of these units is an understatement. They are amazingly efficient and, from all reports, remarkably clean-burning. The smoke from early, crude models of the tile stove found its way out of the dwelling in a variety of ways, usually through a hole in the centre or the gable ends of the home. Today, the chimney forms part of the mass of the tile stove and helps to make it the efficient unit it has become.

Ideally, I must emphasize that chimneys should be built inside the dwelling, not in an outside location or even on an outside wall. The closer the installation to the middle of the house, the better the heat distribution. In northern Europe today, these tile stoves are a focused point of the home, providing a centre of warmth, comfort and beauty.

Many incorporate seating in their design, as well as cooking services and baking ovens. They are not meant

to be fired continually; usually once or twice a day is sufficient, depending, of course, on the severity of the weather. Nor do they utilize a lot of wood, storing heat with a minimum use of wood.

Unfortunately, North American society has been slow to grasp the benefits of this type of wood-burning appliance. There are several reasons for this, and space requirements are one of them. These units are quite large and heavy. The initial costs can be high, in the neighbourhood of \$15,000 in Canada. However, in my opinion, this type of heating should be thoroughly investigated because of its clean burning properties and efficient use of wood as fuel.

About 15 years ago, the outdoor wood-heated water heater became very popular in our area. This model pumped warm water into the dwelling, and in some cases the warm water went directly into the existing plenum, into which a radiator had been installed with the air blown through it by a fan already in place in a typical hot air system.

These units were not without their problems. Initially, the insurance companies balked at the antifreeze solution which was added to the water in case of a prolonged shutdown, fearing possible damage in case of a rupture to the interior of the home. Then problems of heavy smoke and much liquid creosote became apparent. This took its toll on the units themselves, many of which became inoperable. Neighbours complained of the acrid smell of smoke that drifted downwind, and from the owner's standpoint, they did consume an awful lot of wood. They were very inefficient, in other words. The jury is still out on this method of wood burning, but I wouldn't be surprised that with some re-engineering, they could be a viable option, however.

When discussing wood burning with many different people, the smoke pollution problem frequently comes up. We have all heard of numerous cases of palls of smoke hanging over certain valley communities. Stop-burning orders are being issued by cities and municipalities in an effort to combat this problem. These are legitimate concerns, which need to be addressed.

In the early 1980s, when wood burning had a resurgence, many small manufacturers got into the wood-burning appliances. At the time, little effort had been put into the study of efficient wood burning, that is, proper air induction. Most of these early efforts fell by the wayside. Fortunately now, I've noticed in the last few years, there are a few companies which have since developed the right methods of doing this air introduction.

There are several wood-burning appliances on the market today which are very clean-burning. These wood-burning units are designed to direct airflow into the appliance for a primary and secondary burn in order to achieve full combustion. This in turn results in a clean burn. The only evidence of smoke in such a unit is usually water vapour being admitted into the air. Some people might look at that as smoke, but if it's without colour, it's mainly water vapour. Rigorous testing of

these units would serve to answer some lingering questions, such as the exact amount of particulate emissions being produced.

My personal observations lead me to conclude that when chimneys attached to these units are installed inside the home, there is little or no evidence of creosote buildup at all. During the 1980s, I entered into a discussion with a professor at a Toronto university regarding the viability of catalytic combustors. These units were designed to be attached to the smoke outlets of wood-burners to facilitate the complete combustion of unburned gases. The university went on to test this type of add-on; however, my meetings with the professor proved to be less than productive, as my opinions differed fundamentally from his.

1340

Then as now, I realize that a proper burn by injecting both primary and secondary air into the appliance would eliminate the need for such an add-on feature. The combustors proved to work well in some cases, but seemed to wear out quickly. In some circumstances, small particulate matter plugged them up, rendering them useless.

Because of the availability of wood supplies and the escalating cost of electricity and natural gas, wood burning continues to be both a practical and an economically viable means of heating in northwestern Ontario. Wood burning does involve effort, some of it enjoyable, some less so. It is not for the faint of heart, the indolent or the couch potato. As a late emperor called Francis once observed, "I believe it requires as much talent to warm a room as to rule a kingdom." If he were alive today, I would be pleased to introduce him to some innovations in wood heating which might change his mind.

In my youth I was taught that wood heated us many times over: when we cut it, stacked it, hauled it inside and again when we burned it in the stove. This truism still applies. On the other hand, there's nothing quite like stepping into your home on a cold winter day and being greeted by the comforting warmth of a wood-burning fire.

While recognizing the problems that remain to be addressed in the years to come in regard to wood burning as a viable alternative, I still have a strong belief in and commitment to wood burning.

With that, I have drafted up four recommendations that I would like you to consider as a group.

The Chair: We have approximately three minutes left, so go ahead with the recommendations.

Mr Rasmussen: I will be finished in three minutes.

(1) That the committee set up a group to investigate the true costs of insurance as they pertain to the wood-burning industry.

(2) That a serious approach be taken to promoting the adoption of building methods incorporating solar heat, for instance. Adobe housing using straw bales as a building material should also be looked at.

(3) It has recently come to my attention that our government of Ontario has issued new guidelines grant-

ing exclusive rights to all fuel wood resources in this province to the forest industry. This could have a major impact on individuals looking to harvest their own fuel wood on crown land. These guidelines should be looked at again in view of their possible future impact on the wood-burning industry.

(4) The study, exploration and further development of wood-heating devices and appliances, emphasizing efficiency, safety and pollution controls, should have a high priority.

I would like to thank you for allowing me to share my thoughts on wood burning. It is not often that one gets an opportunity to talk at length on something one feels passionately about. If I have in the process convinced you, I'll have done my job.

The Chair: Thank you very much for a most interesting presentation. Unfortunately you're coming out right at the 20 minutes, so we don't have time to pose questions to you on your presentation. But thanks for joining us from Kenora. We appreciate your taking the time. Certainly this is a different approach with wood burning and one that we shouldn't forget.

Mr Rasmussen: Right. What I'll do is mail you a copy of this so that it can be distributed or whatever.

The Chair: We would appreciate that. The clerk will look after distributing it. Thank you very much and have a good day.

UPSALA FOREST PRODUCTS LTD

Mr Steven Lukinuk: Hello from Thunder Bay.

The Chair: Hello. Are you hearing us OK?

Mr Lukinuk: Yes. Actually, I might even turn down the volume a little here.

The Chair: Welcome. We're moving east: we were in Calgary, Kenora, and now we're into Thunder Bay. We appreciate your joining with us.

Our next presenter is Upsala Forest Products Ltd, division moss land peat, and Steven Lukinuk, consultant. If you don't mind, maybe you can just state your name and introduce the other two. You have 20 minutes for your presentation and questions from the various caucuses here.

Mr Lukinuk: My name is Steven Lukinuk. We're at Thunder Bay, Ontario, Canada. Next to me is James Vibert. He's the principle and president of Inwood Forest Products Ltd. With us is Brenda Veilleux. She is with the company.

Just to explain a wee bit, I am an ex-lawyer, a retired lawyer, and have done much work with Mr Vibert and his company, which is Inwood Forest Products, and Upsala Forest Products Ltd, located about 100 miles west of Thunder Bay. Mr Vibert is quite a successful contractor with the local pulp and paper company, Bowaters, and he has become interested in producing peat.

By a letter dated February 21 this year to the local natural resources office, an application was made for the right to search for peat in the Upsala area where Mr Vibert's company is and where his home is. By reply on

March 12, the provincial policy statement of the ministry was given to us. They gave us certain information that we would have to have a work permit. Subsequently they changed that and Upsala Forest Products, its division, has the right to search for peat in the Upsala area.

There was no work permit required, so we proceeded to explore the possibility of peat being produced in the Upsala area. Mr Vibert has retained a series of consultants. The prime consultant is a Dr Rouse Farnham of the University of Minneapolis, a retired professor who has spent his lifetime in the peat business. The second individual is Wayne Tedder of Calgary, Alberta, who has done a large number of commercial peat operations in Alberta and was previously a government employee dealing with peat in that province.

A lot of effort and a lot of resources and funds have been expended in the Upsala area serving the peat potential this year. The basis of the work was a series of publications by Ontario, the Ontario geological surveys from 1982 to 1985, which was the last crunch in the energy crisis. It peaked in that period. The OGS, the province of Ontario, carried on the Ontario peat land studies, six large studies using large consultant organizations throughout the province. It was an inventory project, part of the hydrocarbon energy resources program of the province. We used their reports as the basis of our surveys and the work done by the two consultants. The work was done with those consultants over this summer. The company has hired Lakehead University to do testing on this material and for quality control.

1350

What we found, just by way of background to give you some statistics, the OGS surveyed 1,400 peatlands in the area, each of which was over 100 hectares. That worked out to 72,600 hectares of peatlands being surveyed. They contained an estimated 1.530 billion cubic metres of actual peat in situ, in location. That was the survey. The overall area was about 700,000 hectares of peat, being poor material in conifer swamps. There were 260,000 hectares of higher potential, being the type of peat that might be usable both in horticulture and as fuel.

Peat in this area breaks down into two types: there's the horticultural, which we call the unhumified—it was 32% of this vast volume that I gave you above; and the humified, the fuel grades—39% or 40% of that tremendous volume that I gave you earlier is fuel grade, according to the OGS.

Ontario uses large quantities of peat today. It produces virtually none in the agricultural. There's no fuel peat of any consequence that we can find that's being retailed or used in the province. We want to change that if we can. That's why, when your advertisement was issued, we decided to appear before you.

Mr Vibert—Jim—and I know virtually nothing about peat. It's something—there's a lot of money that has been spent and a lot of studies made, and this summer we're learning. The survey done with these consultants from Minneapolis and Alberta over the summer tended to

show that horticultural peat is potentially able to be extracted provided that a sufficient area and depth are found, with the extraction to be in compliance with the anticipated environmental impacts of such an operation.

Our present studies indicate a great lack of area with sufficient agricultural peat to proceed with producing only the agricultural material. The agricultural material and the fuel material occur in the same bogs, one on top of the other—the agricultural on top and the fuel beneath it. If the fuel peat were able to be recovered and sold in the same process as the horticultural peat from the same bogs and fens, then the situation would change. This is why we're here; you can see why we're here before the committee.

We want to recommend that the committee consider the following:

First, fuel peat production uses electrical plants as part of the operation. Fuel would be burned to produce electricity. We recommend that this be fully investigated and reported on by this committee, your committee. There is a whole series of regulations and a large number of ministries involved.

We also recommend that you look into this, and if the peat process, the fuel peat, is to proceed, the whole process has to be greatly streamlined. I think there are about six ministries directly involved. The applications are from one ministry in the name of another. The streamlining should be paramount if the industry is to proceed.

We point out to you that our information is that Finland and Ireland experience using peat to produce 10% of their electrical requirements. It may be necessary to do this in Ontario in the future. If so, we want to be part of it. The technology to lessen the concerns about the CO₂ and other gas that might be impacting on the environment in the burning of the material is very highly developed in California and other areas and is presently in place. It may be costly, but it's there. The effect on the wildlife habitat of the bush operation, the extraction process, we believe is manageable and can be beneficial.

The final recommendation is that if in your wisdom there are to be incentives available to the development of the alternative energy forms, they should be applied to peat production as well as any other form.

That's basically what it is. If there are any questions of myself or Mr Vibert, who has done the in-field work and is funding the whole operation, we'd be pleased to try and answer them. Thank you very much for being kind enough to have this videoconference with us.

The Chair: We appreciate your comments, and your presentation is unique. We've not heard one along this line so far. The questions: we have about two minutes for each caucus, beginning with Ms Churley.

Ms Churley: First of all, Chair, do we have a document in front of us?

The Chair: Not at this point.

Ms Churley: Will you be providing us with your speaking notes or some documentation?

The Chair: You'll be sending your presentation to us, will you?

Mr Lukinuk: We can. The secretary or whoever I dealt with indicated that there'd be no handouts, so we proceeded on that basis.

The Chair: We'll copy it for you.

Ms Churley: That would be useful, because we're rushing madly ahead on this committee, and I know that the time frame was very short. I appreciate very much the opportunity to hear your proposal today, and I look forward to delving into it a little more. Thank you.

The Chair: To the government side.

Mr Hastings: Sir, thank you for your interesting presentation. I'd forgotten about the vast peat deposits in northwestern Ontario. Way back, about 10 years ago, I visited the Upsala wood operation.

In addition to supplying us with your submission, could you also provide us with the names of the two consultants you have been working with, especially the one from the University of Minnesota. Also, could you supply us with where in California—or what company is the manufacturer of the heating process for peat production and any technical studies they have as to how it impacts the air quality where they're using it. That would be especially helpful for the vast experience they've had with this product in Ireland.

Thank you very much for your comments. It's an eye-opener.

The Chair: Would you like to make any response to that or just send in the information?

Mr Lukinuk: We believe that between Wayne Tedder and Rouse Farnham in Minneapolis, both of these requests can be fulfilled.

Mr Ouellette: My question is: with the abundance of forestry waste products in northwestern and northern Ontario, why would you go to peat as opposed to wood waste products, as in the case of Hearst, for example?

Mr Lukinuk: Mr Vibert will handle that. He's dealt with both over his lifetime as a sawmill operator and as a present chip manufacturer.

Mr Jim Vibert: We did use utilize wood waste, bark and sawdust in our waste burner that heated a dry kiln. That technology is quite traditional. We're in a small, distant community where there's a little bit of a problem about transporting any current back to the main hydro grid. Peat and biomass are comparable supplies, but the program that we're on now was to look at the horticultural peat. We have studied other major public companies that are manufacturing that, and in our exploration work we realize the majority of the volume is oxidized and deteriorated to a fuel grade. Some of the reading has indicated that this can be made into pellets and then taken to a generating station. So we're working on peat and we're familiar with wood waste.

1400

Mr Parsons: This is also a topic I literally knew nothing about until today. When you talk about utilizing peat to generate electricity, are you talking a major electricity plant or are you talking small plants that would

serve an industry or a community? Are you talking about hooking into the grid or being on its own?

Mr Lukinuk: We believe it should be both. The technology in Ontario has been completely ignored; it hasn't been done. The surveys by the OGS in the 1980s or approaching that, as we take it, as we understand, the price of oil becomes reasonable and the second stage has not been undertaken. This is what we suggest the committee should be directing some of its efforts towards. We're saying we're ready to help.

The Chair: Thank you for your presentation and for joining us this afternoon. It was very interesting, and it's certainly obvious from your presentation there are very different concerns in northern and northwestern Ontario than in southern Ontario. Have a good day.

On behalf of the committee, to those who have been handling the technology for these three videoconference calls, excellent job, very well done. I think that worked extremely well.

Applause.

The Chair: A little applause would be in order, certainly.

Interjection.

The Chair: They're just saying they want money.

HYDROGENICS CORP

The Chair: Our next presenter is, Jane Dalziel, director of marketing and government liaison for Hydrogenics. Please come forward to the microphone.

Ms Jane Dalziel: Thank you for this opportunity to present to you today and to contribute to the fuel cell technology perspective, together with other fuel cell proponents, who either have presented or will be presenting.

I represent the company Hydrogenics Corp. We're a six-year-old fuel cell company based out of Mississauga. In addition, we have a facility in upstate New York, and an Asia-Pacific regional office in Tokyo, Japan. We presently employ 108 people and are rapidly growing. I might add. Primarily these people are at our 95,000-square-foot facility in Mississauga. We expect to be about 126 by year-end. The company is publicly funded as of October of last year.

Hydrogenics is solely dedicated to the commercialization of PEM—that is, proton exchange membrane—fuel cell technology. Right away I'll say I don't expect you to know Hydrogenics as the household name Ballard has become. We are working a somewhat different business plan from other fuel cell companies, and our commercialization approach has been a quieter one, at least on the public front. Our strengths lie in fuel cell system integration as well as in core fuel cell technology; for example, the development of the PEM fuel cell stack.

Our first commercial product is a line of automated fuel cell test systems known as FCATS. We supply and support many of the world's leading fuel cell developers with these highly engineered systems that provide critical fuel cell operating systems for their fuel cell stacks under development. Currently, we have about 100 of these

systems in use around the world, with the majority of our customers being located in the US, the UK and Asia. These FCATS systems, ranging in price from \$100,000 to almost \$1 million, represent a very substantial investment by progressive fuel cell developers. Several of our customers even have multiple systems within their fuel cell labs.

What many people do not realize is that fuel cell technology involves much more than the fuel cell itself. There is an entire system that needs to be built around the stack to make it produce electricity efficiently. There is a distinct possibility, in fact, that the fuel cell stack itself will become a commodity that's primarily manufactured out of Asia. This larger, value-added system requires a great deal of new technology, as well as modifications to existing technology. Together it all makes up the greater body of fuel cell technology.

As a pioneer in the system integration aspect of fuel cells, Hydrogenics has learned first-hand how difficult it is to source suitable components for fuel cell systems. They just don't really make them yet. Through our hands-on approach of making it work, Hydrogenics has developed as a leader in the design and manufacturing of the entire fuel cell system and component subsystems. Our broad technology base targets us for all three major markets in stationary, transportation and portable power.

I suspect the reason we are here today is because Ontario is preparing to face some important decisions on two critical fronts in particular: the environment and the preservation of our industrial economy. Perhaps we wish to consider that the improvement of one doesn't always have to be to the detriment of the other.

On the environmental front, we are starting to see the quantifying of Ontario deaths that are directly attributable to environmental pollution, in particular smog. Before long they will be adding to that the number of additional deaths that are deemed to be indirectly attributable to this pollution. These statistics are becoming public knowledge, and the demands to find effective solutions are getting louder and more persistent.

Fuel cells present a tremendous environmental benefit, as the only emissions they give off are heat and pure water. This is a well-broadcast fact, so I will not belabour it here now. However, I certainly do not want to mislead anyone. There may still be emissions that are associated with the means by which the hydrogen fuel is generated.

There is no question that one must look at the entire cradle-to-grave process of delivering power. Even if we look at electrolysis of water—which is taking water and splitting it into hydrogen and oxygen—to produce the hydrogen, we need to consider where the electricity is coming from. Is it from a dirty coal-fired generating station or is it from a clean hydroelectric generator?

The other common source of hydrogen is from the reforming of hydrocarbon fuels that are rich in hydrogen, such as natural gas. In this reforming process, a carbon emission is in fact released to the atmosphere. Nevertheless, mainly because fuel cells are so efficient, the emissions are far less than those that would be released to

get the same delivery of power from an internal combustion process. Also, because of the lower temperatures in the electrochemical process of the fuel cell, there are zero NO_x emissions. As a result, the reduction in smog would still be dramatic even if a hydrocarbon fuel is used as the source of hydrogen for the fuel cell. This fact makes for an excellent interim solution that can help advance fuel cells into commercialization for certain applications by relying on an existing fuelling infrastructure, even if it is not yet the totally clean solution.

I hasten to add that there have been some very promising developments for mass hydrogen production from renewable sources that are totally without undesirable emissions. Of course, this is the ultimate goal of fuel cell commercialization. All being said, in the short and long term, fuel cells offer an excellent environmental solution for widespread production of power.

Next, I wish to address the interests of Ontario's economy in the light of broad fuel cell adoption. The fact there is a full system that needs to be integrated around the fuel cell is part of the challenge of the technology but it is also part of the opportunity, especially for someplace like Ontario that has an existing multi-tier parts supplier industry, primarily for the automotive industry. The fuel cell industry is not a dot-com; rather, it will be a manufacturing industry. That is what Ontario is good at, and it is why Ontario should be sizing up the opportunity.

As you have already heard, the potential of fuel cell technology is tremendous, largely because of its universality and its scalability. In other words, it is capable of providing an attractive power solution across a wide spectrum of applications. Certainly the prospect of a fuel cell car has captured the imagination of the public. However, other significant markets are likely to emerge a couple of years sooner than the transportation market. For instance, in the area of distributed power generation, fuel cell power has the ability to be installed in micro-grids that can serve electricity needs in a local fashion without a large capital investment in infrastructure. In the climate of a deregulated energy market, this has great potential.

1410

In particular, fuel cells are looking very attractive in areas that have been without electricity to this point. Thinking globally, which we must, some of these areas, parts of Asia in particular, have very large populations. This means that if the technology gets a toehold there, volumes could skyrocket quickly, thus lowering costs and establishing fuel cells as a power technology of choice for widespread applications. The message to take from this is that the fuel cell technology sector is very global. Momentum can come from anywhere in the world and take the rest of the world with it. This is why Hydrogenics has put a great deal of effort into establishing global relationships and presence.

There is a great deal of groundwork to be laid if fuel cell technology is to be adopted as an alternative to existing power delivery systems. There are several jurisdictions that have already made substantial financial and

policy-driven commitments to the adoption of fuel cells as a power alternative. It would appear that Ontario is already in a catch-up position, especially considering a recent release from Michigan's Economic Development Corp announcing a major initiative to make the state a leading fuel cell manufacturer.

Michigan has much the same interests and infrastructure as Ontario. All the things that Michigan does not want to lose by remaining dependent on old technologies are the same things that Ontario does not want to lose, and the measures they are looking at to re-tool the state of Michigan are many of the same things that Ontario will need to do. And the proximity of Michigan to Ontario is always a factor to be considered when there's a desire to keep our jobs in Ontario. We believe this particular initiative in Michigan may create the greatest concern for Ontario, should fuel cells show indications of emerging into power markets.

Please don't take from this that fuel cell power is the be-all and end-all. Of course it's what I came here to talk about today, but at Hydrogenics we have always maintained that it will be a mosaic of power technologies that arises to transform the power industry as we know it today. What fuel cells provide is outstanding reliability and versatility compared with other alternative technologies. They don't need the sun to shine or the wind to blow. Nevertheless we believe that some of the best solutions will in fact integrate different power technologies. Again, fuel cells are very adaptable to such solutions.

I am going to close by raising a question that we in the fuel cell industry often hear. It goes something like this: "We've been hearing about fuel cells for a long time. So why does everyone think that now they are a happening thing? Is it maybe just all hype?"

We have to remember that fuel cell technology is what is known as a disruptive technology, or you could call it a displacement technology. In other words, it has to push other existing technologies out of the way to take its place.

First there is a cost issue. As we all know, any new technology is at first very expensive, so dislodging an existing cheaper technology is all the more difficult. Those of us in the fuel cell industry don't worry that costs won't come down as volume goes up. There is no reason they won't.

Second, there is the whole matter of creating change. Because of the nature of fuel cell technology, there will be profound change in many things as we know them now, and a lot of people and organizations don't exactly embrace change. Governments are often compelled to listen to these people and organizations. In addition, Canada's wealth of oil and gas has allowed us to say for the last 10 to 20 years that we have something that works and we're profiting very well by it, so why change.

Well, in view of the environmental and economic issues I have highlighted here, we are now seeing very real reasons to change, even if there are still substantial supplies of oil and gas available to us. These reasons to

change have introduced strong drivers behind alternative energy development, resulting in the investment of unprecedented amounts of private and public money all over the world, in particular toward fuel cell development. Maybe fuel cells have been in the lab for a long time, but it really wasn't until the last five years or so that the means to commercialize the technology came forward, along with the interest to do so. It's really been a whole new ball game. The advances in the last few years have been very impressive, and all indications are that there is more on the horizon.

I just want to add that we are an active member of Fuel Cells Canada. We have given them input in terms of recommendations that we know have come forward here, so I haven't made a point of going over them again, but make the point that we support their recommendations fully.

The Chair: We have approximately two minutes left for each of the caucuses to question.

Mr Gilchrist: Thank you very much for your presentation. I think you've covered the subject very well. Like you, I see this as a technology worthy of a lot of further research. I have no doubt that Michigan won't be the last state to light a fire under our backsides to make sure we retain our competitive advantage.

If you would, I would like you to expand on your suggestion for distributed power and where you see, in a realistically short time frame, the opportunities, geographically and by population. For example, would it be realistic to suggest that within the next five years fuel cells, perhaps in combination with solar or wind turbines, would form the replacement energy option for all northern developments, all the native reserves and our remote communities north of the 52nd parallel?

Ms Dalziel: As far as Canada is concerned, that is the geographic region that would probably be the first to look at this technology as a solution. If you look at the United States, they've got all sorts of pockets there, and then you could look at Asia. As I say, there are all parts of the world that don't have electricity. But yes, northern Canada is where we could look at that. One of the beautiful things about fuel cells is that they operate very well in cold temperatures.

Mr Gilchrist: Recognizing that the federal government spends an awful lot of money in some cases on those reserves, have you any sign of progress in terms of federal supports for R&D in this area, anything we haven't seen yet that you know is in the works?

Ms Dalziel: No, nothing I know of. We had an NRCan grant a couple of years ago that would actually develop fuel cells for a cold climate. Actually, we have a patent that is in particular for fuel cells in a cold climate. So that was developed. We now are assured of the capabilities of the technology in that climate.

There is nothing new in the pipeline that we have seen except that there is getting to be more federal interest on the whole. On the transportation front, which is different, next week I'm at a two-day kick-off meeting of an alliance called the Canadian Transportation Fuel Cell

Alliance. It's the Canadian equivalent of CARB in California. So that's on the transportation front. That's getting I can't remember how many millions of dollars but it's certainly very substantial.

Specifically on the stationary power front or distributed power, we haven't seen any initiative in particular coming from the federal government.

Mrs Bountrogianni: Thank you very much for your clear and forthright presentation on the pros and cons and the obstacles, but also the advantages, of fuel cell energy. You did mention, and I agree, that change is difficult for humans in general. Do you have any suggestions for the government, for the industry, for both, on how we can work together to educate people on alternative sources such as fuel cells?

Ms Dalziel: As far as the public is concerned, there is nothing that makes the same kind of hay as demonstration projects. I'm sure this is something that Gordon Potts may have brought to your attention last night. It's demonstration projects which put fuel cell technology either in a bus or the Zamboni at the Air Canada Centre or in a stationary application or whatever. It lets people see fuel cells at work. It helps to dispel the Hindenburg thing that people will continue to bring up. It also shows that the province is supporting clean power technology. I can't say enough really about the value of demonstrations on that front, if it's broad public awareness that you want to reach out to.

Certainly, on schools, there should be so much more being introduced into the curriculum in the schools. Fuel cells fall under the category of electrochemistry, which is never something that people get too excited about, but at the same time the fuel cell industry is very multi-disciplinary. We have within our staff chemical engineers, mechanical engineers, physicists, electrical and electronics experts—they cross a very wide range of engineering and technical disciplines. I think if we can get something more into the schools, that would be very valuable as well.

1420

Ms Churley: Thank you very much for your presentation. Some of us believe that we don't have a lot of time to waste, so to speak, in getting these cleaner forms of energy up and running. One of, I think, the misconceptions is that the existing dirtier energy production is not subsidized. If you look into it, one of the reasons costs are being kept down—let's look at the nuclear industry, for instance, and how heavily it's been subsidized and continues to be, even though it's now private. They remain shielded by I believe the liability from all but \$75 million of that. So that subsidy is ongoing. That's just one example. When we keep that in mind, the reason our energy costs are so low is because of these subsidies. The problem we have to do—and I know it's very complex. You talk about this being a disruptive technology, so there's that complexity as well. But we are not paying full costs for the existing energy. I just wanted your comment on that, because you did say that because of higher costs, it's hard to bring on. But we're paying

more for cleaner energy than we are for dirtier energy, and there's something wrong with that picture.

Ms Dalziel: I'd have to say there's something wrong with that picture. It's really kind of stacking the deck against new technology when it's already kind of stacked against them just because of its—

Ms Churley: Yes. What do we do?

Ms Dalziel: Good question. I must admit I wasn't that much aware of the level of subsidy on existing—

Ms Churley: It's big.

Ms Dalziel: That's the sort of thing that government has to step into and say that they're going to even the playing field. What we have to do is be prepared to add or acknowledge a value for clean energy, instead of just saying, "Here's your dollars per kilowatt and here's your dollars per kilowatt." You have to say, "It's worth this much," sort of quantify it, to have it clean and to have the benefits of a new technology that can bring real benefits to the table. If we can't be allowed to quantify that to some extent, then it makes our task that much more difficult.

The Chair: I appreciate your coming forward and presenting to us—

Ms Dalziel: I appreciate the opportunity.

The Chair: —and sort of orienting around that social cost at the end that we're referring to, so thank you.

Ms Dalziel: It is something that would be nice to get a handle on.

ONTARIO NATURAL GAS ASSOCIATION

Mr Chair: Our next presenter is the Ontario Natural Gas Association, Bernard Jones, president. Please introduce yourself and your associate.

Mr Bernard Jones: Thank you very much, Mr Chairman, select committee. I'm Bernard Jones, president of the Ontario Natural Gas Association.

Mr Brian Soutiere: I'm Brian Soutiere. I'm director of ONGA and senior vice-president of direct energy and marketing.

Mr Jones: I'll read a short submission and then we'll be happy to take questions if that's, as you say, the way to proceed.

The Ontario Natural Gas Association—or ONGA as it's known—is a broadly based energy association with membership from across the energy industry, including transmission and distribution utilities, power generators, natural gas and electricity marketers, manufacturers, contractors and service providers, and legal, environmental, engineering and other consultants. So we have a pretty broad view of the energy industry.

ONGA is pleased that the all-party special committee on alternative fuel sources has been appointed to study and make recommendations on "environmentally friendly forms of energy generation that could offer alternatives to the province's existing fossil fuel sources." We believe the study will serve as a complementary step toward government plans for protecting the environment and for the opening of the electricity market.

In examining alternatives to fossil fuels, it is important for the committee to appreciate the relative economic and environmental significance of fossil fuels, both for comparison with each other and also with the alternatives. This summary submission addresses the significance of natural gas options.

Natural gas is a fossil fuel. It is the fuel of choice and is the largest single source of end-use energy in the province. The reliance on natural gas by Ontario industry, offices, homes and institutions reflects the availability, reliability, safety and competitive cost of gas, as well as the fact that natural gas is also an environmentally preferred fuel. Natural gas technologies are energy-efficient. The full-cycle environmental impacts of natural gas production, delivery and use are much less than for other fossil fuels.

Across North America, demand is rising for natural gas because of its advantages over fossil fuel alternatives. The fastest-growing area of demand is for gas use in electricity generation using higher-efficiency gas technologies. Stationary fuel cells, microturbines and natural gas vehicles are forms of energy generation at various stages of market development that will principally use natural gas. Natural gas is positioned to serve increasing demand for the foreseeable future. It is also providing a vital bridge while solar and wind and clean coal technologies are developed and commercialized in sufficient volumes to significantly help meet growing demand.

No fuel source is completely benign in its environmental consequences. Solar, wind and small hydro are renewable energy sources with low full-cycle environmental impacts. ONGA supports market-based solutions to encourage these renewables with the objective of having them competitive in the longer term. Gas-fired cogeneration is another lower-impact option that can deliver net reductions in emissions. Older noncompliant boilers, for example, tend to be replaced with new gas turbine technology. The electricity self-generated displaces purchased electricity, which on the margin is principally derived from coal- and oil-fired generation.

Other alternatives to fossil fuels, such as energy from waste, large hydro and nuclear power, even where some may be classed as renewable, can have significant environmental implications in terms of air emissions, land use and waste disposal. Natural gas and natural gas technologies are environmentally competitive in this shades-of-green area. It is here where undue interference with market mechanisms could cause the most problems. New large hydro potential is limited in Ontario, and new nuclear plants require huge amounts of capital and have long lead times, exposing projects to significant economic and financial risk. Cleaner coal-burning technologies are not yet commercially proven.

In contrast to the generation at large-scale plants, distributed generation, which is principally using natural gas technologies, including proven combustion turbines, combined cycle and cogeneration, locates power production closer to the customer, thus limiting the need for expansion of transmission systems and minimizing energy losses in transmission. It also requires less reserve

capacity and is less vulnerable to power supply disruption. Cogeneration projects are a particularly efficient method of generating electricity and steam, and when distributed around the province, close to loads, tend to make the entire transmission network more efficient by providing grid stability, voltage regulation and alleviating grid constraints.

Fortunately, distributed generation is providing relatively short lead time, lower risk, competitively priced and environmentally acceptable energy options. Moreover, new technologies are emerging that offer great potential for environmental benefits in the generation of energy, including fuel cells and microturbines. I know that you're hearing about those applications. Many of these technologies will also use natural gas. That's an important point to note.

ONGA makes the following recommendations:

First, recognition that for economic and environmental reasons, distributed generation is the appropriate future strategy and direction for Ontario.

Second, market-based initiatives for wind and solar to encourage the growth of these emerging industries over the longer term.

Third, market-based incentives, where applicable, for emerging technologies, including fuel cells, microturbines and clean coal-burning technologies.

Fourth, market-based incentives for high-efficiency, low environmental impact natural gas technologies.

In our view, market-based incentives would include such measures as: accelerated depreciation allowances on research, development and demonstration, or RD&D, expenditures and projects; favourable independent market operator market rules, including the tracking of electrons from renewable sources and preferred dispatch; emissions trading, emissions monitoring and reporting systems, and other government regulatory policies that can help create a positive business environment in which green energy options may flourish; industry-government-academic partnerships in funding energy RD&D; and customer education programs.

1430

Let me emphasize that ONGA does not recommend mandatory marketing regimes that would attempt to artificially stimulate the supply of alternatives to fossil fuels, distort market prices or obscure cost and price transparency.

ONGA is working in partnership with energy industry stakeholders and the government to help shape and implement appropriate environmental policies and programs, including emissions standards, emissions monitoring and reporting and emissions trading. In our opinion, it is important that strategies for alternative fuels be developed within a broader energy strategy focused on sustainable development and with a positive Ontario-federal dynamic.

In concluding, I'd like to say that ONGA plans on providing the committee with additional information on gas options in a more detailed written submission in the fall, if that is OK. In the interim, if the committee has

questions, we'd be pleased to address them now or in our subsequent submission. Thank you very much.

The Chair: Thank you for a very concise presentation. We have a good three minutes for each caucus.

Mr Bradley: My first question would relate to the Lakeview generating station, which supposedly is going to be converted to a gas-fired station. The option that appears to be the option today is that they're using virtually the existing equipment and put in natural gas. What would be the advantage to putting in high-efficiency natural gas-burning equipment, as opposed to using the present boilers and the present equipment at Lakeview generating station?

Mr Jones: It's a question which requires a complex answer, I believe. We're aware of the proposals that have been tabled for converting some of these stations from coal to natural gas. Energy efficiency, of course, is a major question. It could be that firing gas in the boilers is not the correct way to do it, under the boilers, and that combined cycle or some other technology—coal firing, select-use; there are other alternatives—could be considered. But it's difficult for the industry, I believe, to respond. We have to do it on a case-by-case basis, but I'm sure that the industry would respond professionally, if given the opportunity.

Mr Bradley: My second question relates to the long-term availability of natural gas. It's a question I've asked others who are in the business. I have a personal concern that the federal government and the Alberta government and whatever other are producing governments are itching to sell as much of their natural gas into the American market as possible. I know in the short term that will encourage development of new gas resources and everyone will cheer and there will be some good economic benefit. I'm looking at the long term. As I understand it, natural gas is a finite fuel and someday the natural gas may all be gone on earth. It may be in the distant future, but there it is. What is your view of encouraging natural gas exports to the United States, when Ontario—I'll be parochial and specific—may well need that natural gas well into the future?

Mr Soutiere: As Bernie suggested, that's a complex question to answer as well, but I'll take a stab at it, at the risk of getting cross-threaded with some of the politics. Yes, we will run out of natural gas someday, but at current rates of consumption and the projected undiscovered reserves that are in Canada, that could be as long as 50 to 100 years from now. So it's something that our children and our grandchildren may have to face in real terms, but we do have sufficient projected gas reserves in North America—Canada and the US—to meet our consumption rate and forecast growth for a good, long time ahead. I would say that's 50 years I think we can see that potential in the reserves today.

As to whether the Canadian reserves ought to be preserved for Canadians first and then whatever is left over exported, I think the free trade agreement probably takes care of the answer to that question. Natural gas is marketed as a commodity on a North-America-wide basis

and it goes to the highest bidder; it goes to who is willing to pay the market price.

Mr Bradley: That's what I'm afraid of.

Ms Churley: Thank you for your presentation. Mr Bradley touched on that they see it as an interim bridge. I think you agree that it's not infinite, none of our fossil fuels are, and that's an issue many years down the road from our lifetime. I guess one of the reasons as well why—first of all, let me say I support it as an interim measure, the conversation of coal-burning plants and some of the other technologies that are coming on stream.

I wanted to specifically—and there are a lot of questions in this short time—ask you your opinion. You mentioned that you don't think that alternative fuels should be given any special deals to come on stream. We're hearing over and over again from the renewables that in this particular climate, with the present regulations and the present lack of incentives, they can't get into the market, that it costs too much and it's causing a real problem. I have a concern about that.

Mr Jones: It's a matter of balance. As I say in the submission, we're not against market-based incentives. In fact, we think we need those, the kind I listed. The incentives, if you like, that we would perhaps frown on would be if, on the renewables, generators or marketers would be required by regulation, by legislation, for example, to have a percentage of their power supply or sales served by renewables. In other words, if you're a marketer or a generator, you would actually have to be able to prove that you have 5% or 10% of your power supply coming from renewable sources before you could sell to the customer. It's that kind of thing that we're trying to avoid. We're trying to say adopt a more flexible approach, provide the incentives where they're more transparent and up front, where you know the true costs and can trace these costs, whether it's capital consumption allowances—that's accelerated consumption allowances. You might have a lower corporate tax rate in some areas, that kind of thing.

Certainly we've seen enough price distortion in the marketplace and we know the damage that price distortions cause, whether it's the National Energy Program, whether it's freezing electricity prices while Hydro is going bankrupt. These are the kind of things that create real problems later on. We're saying, if we're going to play the game, let's play the game openly so we can all see and value what's happening.

Mr Ouellette: Hopefully you'll be able to answer some of the questions I've been asking the other natural gas companies during our hearings. Have you seen the August 20 issue of Canadian Business on the next energy crisis, with some of the claims in there?

Mr Soutiere: Yes.

Mr Ouellette: I'm glad your partner has. In there, specifically it goes into minor detail about an Alberta energy board claim. It states that by that year 2003 gas production will peak and for the next five-year period there will be a 2% decrease in production. Also, it states that the US energy board claims that by the year 2015

there will be a 45% increase in the usage of natural gas, yet only a 2% increase in supply.

The potential new lines coming down from the Arctic are expected to be on line by 2008 or 2010, yet only replace current usages that are in the market right now. Should the coal-fired locations go ahead in conversion for producing electricity in Ontario, where are we going to get the supply to handle the demands that are upcoming, and at what cost? We saw a substantial increase last year alone in price.

Mr Jones: I haven't seen the article but Brian has. Maybe Brian can start the answer and, if there's time, I might finish it.

1440

Mr Soutiere: Again, because gas is a commodity, I would say the supply will be there if you're willing to pay the price. So really the question is, what's the price likely to be in that era and will it make sense to fire stations like Lakeview with natural gas if they're operating in simple cycle as they do today?

I think the quick answer might be it won't make sense because the alternative to simple cycle power generation or the combined cycle technologies that the new independent power producers are using, people like Sithe and Trans-Alta and Anron, where you extract overall cycle efficiencies in the neighbourhood of 60% to 80%, the simple cycle efficiency of a Lakeview on natural gas is probably in the neighbourhood of 30%. In simple terms, you extract twice as much energy from the fuel in combined cycle as you would in simple cycle. Another way of looking at that is your fuel costs half as much as it would if you were going to—

Mr Ouellette: In that case, would it be better to utilize gas in high-efficiency home units for furnaces?

Mr Soutiere: Home or distributed generation such as proposed by Sithe or inside-the-fence-type applications for industrial consumers of power and displace baseload generation from the system supply.

This is a personal view, but I don't think it will make a lot of sense to repower an old station like Lakeview in simple cycle with natural gas.

The Chair: Thank you very much for your presentation. The time is up. We appreciate your coming forward and offering to present to the committee.

Mr Hastings: Mr Chair, a short question.

The Chair: We're out of time. You can ask them to send something in.

Mr Hastings: I wanted to find out if you folks could provide the committee with any indications as to whether Ontario has a geological context for discovering natural gas in Hudson Bay.

The Chair: Maybe they can send that to us.

RESOURCE EFFICIENT
AGRICULTURAL PRODUCTION
ENERGY PROBE

The Chair: Our next presenter is from Energy Probe and Resource Efficient Agricultural Production; Tom

Adams, executive director. There's a total of 20 minutes for presentation and questions and answers. Please state your name as you begin for the sake of Hansard.

Mr Tom Adams: My name is Tom Adams. I'm a director of REAP Canada, which stands for Resource Efficient Agricultural Production. I'm also the executive director of a small consumer and environmental advocacy group based in Toronto called Energy Probe. For the benefit of the overhead, I'm just switching positions.

The subject matter that I want to address with you today is an alternative fuel option that our organization is developing for home heating and water heating applications and that is also well adapted for meeting heating requirements for agricultural producers.

In the last few years there have been some changes in the markets for conventional wood-burning technologies where people have been converting to pelletized fuels. Some difficulties have developed in the supply of wood-based fuel, so our organization has been involved actually for many years now in the development of an alternative fuel source that can be used in pelletized form similar to wood pellets but can be produced in an agricultural context with a more sustainable supply and, we believe, at lower prices.

I'd like to introduce this fuel to you, in part by giving you some examples. This is an example of a home heating fuel that's a lot more friendly than a litre of oil or—

Mr Bradley: Are these worth over \$200? If so, we have to declare it.

Mr Adams: I brought some slides to illustrate what it's like producing this fuel. It's actually a very low-tech product once the fuel cycle has been developed, and the images of its production look a lot like any kind of conventional agricultural field activity. This is an example of the pelletization process. I'll show you an image of what the crop looks like when it's under cultivation. This is a perspective of the crop. It may be hard to see. This is what one of our field trials looks like in the fall.

Mr Bradley: What is the crop, again?

Mr Adams: The crop that we've developed for fuel application is called switchgrass. It's a native species to this part of the world. It was part of the North American tall grass prairie that existed here in southern Ontario before Europeans arrived. It was the food of the buffalo basically and it turns out that this grass is extremely attractive as a fuel source. You can see here one of the reasons it's attractive. With biomass fuels, one of the big challenges that producers have is managing the water content of the fuel. It makes it very difficult to handle and there can be high costs associated with drying. This is a crop that will dry itself. It stands in the field and it's harvested in the wintertime when the relative moisture content is low enough that it can be safely stored.

The bottom line on this whole package is that we can make cheap fuel. Here's an illustration. We've had field trials running for a number of years now, so we're getting actually pretty reliable information about crop yields and

production costs. One of the things you can see from any review of agricultural commodity prices over long periods of time is that what has happened for hundreds of years, and really thousands of years, is the inflation-adjusted value for agricultural products keeps dropping. Farmers get more and more efficient over time, so feedstocks from agricultural production are, we think, likely to become cheaper and cheaper as per the historic pattern.

That's not the case with wood. There is a bit of wood supply crisis for pelletization. In some ways it's a good-news story. It's difficult for those who have invested in wood-burning appliances, but what's happened in recent years is that Canada's wood utilization efficiency has improved tremendously. The industries that utilize wood for various sod products and whatnot have just found ways of producing less waste and using the waste more valuably. So although wood as a feedstock appears cheaper now, the trend is for wood residues to become more and more costly over time, whereas we think the trend for agriculturally produced fuels like switchgrass is likely to go down.

The bottom line is that the prices quoted here are on a dollars-per-tonne basis. Those figures converted to heating costs turn out to be pretty favourable.

1450

The heating cost line on this graph—all of this data is either summarized in our fact sheet or available on our Web site. You don't need to spend time taking notes. But the fuel price here is very attractive relative to the cost of all the conventional heating fuels, with the exception of natural gas, at current prices. We've calculated out, on the basis of prevailing prices for rural areas, prices for propane heating oil and electricity, and there are very substantial savings to the consumer from switching to pelletized biomass fuels, in particular switchgrass.

Maybe I'll conclude my remarks by summarizing what we think government's role is here. The first observation I would suggest to you is that this fuel technology has already benefited from a number of government research programs: the Agricultural Adaptation Council of Ontario, NRCan and the Department of Agriculture and Agri-Food of the federal government have supported research in the area.

The switchgrass fuel industry has got to a stage of maturity where I think it's very likely that this industry is going to develop even if there is no government support, but there are very significant environmental benefits from switching away from fossil fuels to fuel options of this type, and Ontario has more than enough agricultural capacity to produce enough switchgrass to displace more than twice the entire provincial heating oil requirement, so we have tremendous agricultural potential for this. In quite a depressed sector, a lot of these resources are underutilized anyway. We believe there is a lot of potential for this new crop to help diversify the agricultural economy in rural areas, and rural Ontario in particular.

If the government is moved to assist the industry in some way, I think the effect of the assistance is likely to

only accelerate the development of something that's going to happen on its own, and we've suggested a number of proposals in terms of increasing public awareness, public information, encouraging the consumers who are thinking of using pelletized fuels to opt for fuel combustion devices, an example of which is provided on the brochure, that are capable of burning high-ash fuels. The fuel composition of the switchgrass pellets is about 3% ash, versus wood pellets, which is 1% ash, so it makes a significant difference. You can't just burn the switchgrass pellets in a conventional woodstove or a pellet stove adapted for wood. So if consumers are thinking about pelletized fuel options for home heating, they might be encouraged to opt for more flexible appliances.

There is some work that needs to be done in terms of agronomy research, plant genetics, improving varieties of various kinds, and the University of Guelph is looking at some of this stuff now. The Ontario government has heating requirements of its own for offices and whatnot in various parts of the province and, where suitable, pellet fuel should be considered an option at the appropriate time. If a furnace is being replaced or something, you might consider a demonstration project.

Finally, one area of practical research that's required is some agricultural engineering research in the whole area of making the little pellets. The pellets that you'll see in the bag are not as strong as they should be. The fuel would be more practical and more handleable if the pellets had a stronger integrity. So there are some research needs that the industry has, but basically this looks like a good idea.

I'm open for questions.

The Vice-Chair: Thank you very much, Mr Adams. It's Ms Churley's turn to start the round of questions. Would you like someone else to start?

Ms Churley: No, no, that's OK. I just opened the bag of pellets.

Mr Bradley: You can't eat them.

Mr Adams: You can eat them; they won't hurt you.

Ms Churley: That's what I was going to ask, actually. There are, I presume, some emissions. You say it's very minor, but I'm just wondering what the emissions would be.

Mr Adams: From a greenhouse gas perspective, the emissions associated with the fuel system, the entire fuel cycle, relate primarily to the handling and trucking of the commodities. It's a relatively bulky commodity and there's a certain amount of trucking that's required, and also in the pelletization process the machines are burning some fuels.

Ms Churley: So you'd have to take that into account in the total load?

Mr Adams: That's right. Taking that into account and comparing with heating oil, there's a 93% reduction in greenhouse gas emissions, and again, the greenhouse gas emissions that are associated with it are on the handling side, the agricultural production side.

Because this is a perennial crop, you don't have to cultivate the fields every year. We've got stands that have been up with sustained production and they're 10 years old. We don't know how long a stand will go, but from the field trials it seems it will go for a long time.

But there are significant emissions associated with combustion—

Ms Churley: I think our time is up. Maybe somebody else will follow up on that.

Mr Hastings: Mr Adams, you mentioned the University of Guelph's involvement in new products and plant genetics and that sort of thing. I've been to Guelph two or three times since 1995, and they have an enviable record in terms of developing and then working with groups in terms of plant biology and all that stuff. Have you approached the university or been involved with them in terms of working out a feasible pilot project for switchgrass?

As one of the other presenters has noted today, any kind of radical change is a very difficult thing for a lot of communities, and the farm community, while it has adapted in many regards—I'm not so sure that the change here is that radical, but do we have a specific practical demonstration or pilot project involving Guelph and yourself or other companies to see what the potential of switchgrass is, not only from a genetics viewpoint but from the British thermal units coming out of these pellets? As my colleague mentions, there is a company in British Columbia right now selling wood pellets with a higher BTU measurement than I presume you'd find in this aggregate.

Mr Adams: You've got several questions rolled together. The agricultural research station at Alfred, in eastern Ontario, had a plan to install one of these pellet-based heating systems that fell through recently. Right now the research effort is primarily focused around Ste Anne de Bellevue and McDonald College of McGill University in Quebec. We have field trials in Quebec, Ontario and southern Manitoba that are running right now. The field trials in Quebec are the oldest ones, but we've got long-standing field trials as well in Ontario. The Manitoba field trials are new.

The University of Guelph's participation in this—off the top of my head, I can't tell you what the contacts have been between our research organization and theirs, so I'll have to get back to you in terms of the detail.

1500

Mr Parsons: I had not heard of this before and I guess I've got some questions from a farmer's viewpoint. A farmer who would grow it would then sell it as a large round bale or as a large square bale?

Mr Adams: Yes. The round bale technology is what we focused on for handling purposes. We think the most attractive market for this is on-farm energy use: poultry operations, hatcheries, greenhouse operations, some hog operations where they've got substantial heating requirements, people who are now reliant on propane. Last winter they saw propane prices go through the roof. This is a major alternative.

Mr Parsons: So you're thinking of a farm growing it, having it pelletized and then returned to the farm.

Mr Adams: Yes, reducing the handling.

Mr Parsons: So your costing in here of \$46 to \$68 a tonne delivered to a pellet plant, that's essentially the cost of the bale?

Mr Adams: Yes.

Mr Parsons: OK, because we're buying hay now for about \$36, \$38 a tonne, if I take the round bale and calculate it. So that's in here.

How many years is it viable to seed a field with?

Mr Adams: Like I say, we've had a field trial for 10 years and its yield is stable. It actually takes a couple of years to get to maximum yield. We're quite confident that this is going to—this stuff was here before we got here and before there were agricultural practices and it was taking care of itself. This is a very vigorous stand. In dry years the yield depression is something like 10%.

Mr Parsons: I wish I had it this year.

Mr Adams: Absolutely. Perennial crops have advantages. They can take advantage of the spring moisture and whatnot. But we think that the most attractive place for this to start is on the farm, and that's actually where it's going now. We have more farmers interested in growing this stuff than we have identified markets to put the stuff. The pelletization is not keeping up with the production side right now.

The Vice-Chair: Thank you very much for your presentation and your time.

ENVIROS RIS

The Vice-Chair: Our next presenter is Maria Kelleher, director of Enviros RIS. Could you please state your name for Hansard.

Ms Maria Kelleher: My name is Maria Kelleher. I'm the director of resource efficiency with Enviros RIS. I'm here today to talk about a technology called anaerobic digestion, which is a suitable technology to process municipal waste in Ontario. The point I want to make about it is that it is a renewable energy source, and it hasn't been classified as renewable energy in the regs as they currently stand.

Just to give you a little bit of context, in Ontario we produce about 4.3 million tonnes of residential waste each year. About 40% of that material is organic, which means it's biodegradable. We currently divert 300,000 tonnes of that to composting, but there's 1.3 million tonnes left that we could process and produce energy with. Each tonne of waste can produce 66 cubic metres of methane, which is natural gas, through anaerobic digestion. Because we produce this every year, it's renewable on an annual basis. The potential if we captured all this waste, which we wouldn't, would be about 80 million cubic metres of methane, which is 800,000 megawatt hours per year.

What is anaerobic digestion? Organic matter is decomposed, in the absence of oxygen, by bacteria. It takes about three weeks in enclosed tanks and produces a

biogas which is 60% methane. This biogas can be burned as a natural gas, so it displaces coal and natural gas in the exact same applications. It's similar to the process that happens in landfills, but instead of taking 30 years, it takes about three weeks, so it's substantially shorter.

I was in Switzerland recently, and I went to see an number of anaerobic digesters, so I thought I'd show you a few colourful slides to show you what they look like. I should just point out there is a huge solar panel on the roof of this building.

The first plant I went to see was Kompogas. It is a Swiss company. This plant processes 10,000 tonnes of source-separated organic waste from households and businesses a year. When I was there, the McDonald's truck was dumping french fries, actually. So the french fries would go into this digester and produce gas in about three weeks' time.

What this company does is clean up the gas and use it as a fuel source for all their cars. Each tank has two nozzles; it can either run on gasoline or the gas they produce at the plant. Here's the director of the company showing the little nozzle where the gas would be loaded directly into his fleet. All their trucks that transport waste are also run by the gas from the plant.

Once the waste has been digested, they take the water from the facility and use it for a hydroponic greenhouse and produce all kinds of wonderful plants, including water lilies, water hyacinths, different foods for fish farms etc. Again, they treat the waste water in a pond with natural plants.

I just want to show that the plant is located in the middle of an industrial area with office buildings right around. So there's not really any odour associated with the plant.

This is a different digestion technology where all the digestion happens in a silo, like a metal silo you see on a farm. This is what the silo looks like. It's six or seven storeys high. The waste stays there for three weeks and produces gas which is stored in a gas tank. The gas is burned in an engine to produce electricity, and the solid waste that remains after the digestion is put in this tank and farmers help themselves and spread it on the beautiful Swiss farmland. So all the waste that goes into the facility gets used.

The benefits of anaerobic digestion really stem from the methane that's produced as a result of the process. Methane is 21 times more powerful as a greenhouse gas than carbon dioxide, so it's much more harmful to the atmosphere when it escapes. Even the very best landfill gas recovery systems do not capture every single molecule of methane, so some if it escapes—very damaging, much more damaging than CO₂ as a greenhouse gas. This is the major environmental benefit of anaerobic digestion.

1510

For municipal waste, of course, if we put it into a digester we keep it out of the landfill. We've all seen the hassle we've recently had in Ontario around siting of landfills. If we can get 40% of our waste into these

digesters, that certainly solves one of our landfill problems for a much longer period of time. It recovers energy in a very short period of time, three weeks as opposed to up to 30 years in a landfill—a totally controlled system, so none of the methane escapes. In the future, when carbon trading becomes more real than it is today, there will be quite a value to be traded from turning methane into CO₂.

Globally there are about 60 AD plants in the world. It is on a huge growth curve at the moment. In the last five years about a million tonnes of capacity was built worldwide. This year alone another half million tonnes is being built. So it's increasing exponentially. A lot of these plants are in Europe, for various reasons—19 in Germany, seven in Switzerland, Spain and Italy have four—but in Asia they're really looking at this as a method of solving an energy problem, which is the point I'm coming to. My company did a piece of work for the National Energy Policy Office of Thailand a few years ago, looking at anaerobic digestion as a method of producing energy to meet some of their energy needs in that country.

In Switzerland, the policies that helped promote anaerobic digestion were a requirement that all waste going into landfills be stabilized, similar to the EU directive—Switzerland is not in the EU, but they have similar legislation—and also a slight price preference for anaerobic digestion instead of incineration. The most important part, though, was that there was a mandatory requirement for the local utility to purchase all the energy from these digesters for 15 cents a kilowatt hour, so that helped their bottom line.

Why should we look at anaerobic digestion now in Ontario? Certainly there are a number of people looking at it now to have some price stability over 20 years for a product that's the same as natural gas. Once you build a digester, you know roughly what your price will be for the next 20 years. Market opening creates an opportunity to sell green energy, and in all other countries anaerobic digestion—the gas or power—is considered green energy.

Other reasons anaerobic digestion is coming to life a bit more—it's like the Model T Ford; the first one was expensive, the second and third ones got cheaper and by the time you built a few hundred of them you'd figured out how to do it. As more and more people work on the technology, the price is coming down to probably half of what it was 10 years ago.

I talked about green energy and carbon credits. We have more waste streams that need processing. Anyone in the waste management business, like I am, understands the impossibility of locating a landfill in any kind of reasonable time in Ontario—and it's more publicly acceptable than other methods of recovering energy from waste.

I've talked briefly about carbon credits. The main issue here is that as a greenhouse gas methane is 21 times more powerful than CO₂. This will have value at some point in the future for trading on a carbon exchange.

What would help anaerobic digestion in Ontario? It has to be classified, really, as a source of renewable energy. As things currently stand, it's not classified as that. A renewable portfolio standard would help create a demand for this kind of technology. The Ontario government is a significant energy purchaser. If the Ontario government were to lead by example and say, "We're going to purchase X per cent green energy in our portfolio," that would certainly create a demand for these kinds of facilities. And a favourable financial climate is required, something like production tax credits, like they have in the US, to narrow the gap between traditional energy and something new like anaerobic digestion.

That's the end of my presentation. The conclusions are: anaerobic digestion of waste is a renewable energy source—no question; every year in Ontario we produce lots of stuff to feed these facilities—it solves lots of environmental problems including a lot of problems associated with landfills and the Ontario government can take a real leadership role in promoting policies etc that favour this technology. Thank you very much for your time.

The Vice-Chair: Once again we see some overlap in the recommendations that are coming our way which will help in the writing of the report. We have about two and a half minutes per caucus. It is the government's turn to start.

Mr Hastings: Ms Kelleher, when you visited Switzerland, did you talk to any of the financial people as to what kind of financial regime was put in place to make anaerobic what seems to be the national solution for their energy and environmental challenges?

Ms Kelleher: I didn't really talk to financial people. I did talk to the private sector companies who build and finance these facilities themselves, and they simply said that incineration is so expensive there that if they pick a price point for anaerobic digestion that makes them cost-competitive with incineration, so 25% less, with all the other sources of revenue they get, particularly from energy sales, they can make a good business out of this.

Mr Hastings: Two hours ago we had a presentation from a group in Thunder Bay advocating that we look at the use and applications of peat.

Ms Kelleher: I listened to that presentation.

Mr Hastings: Do you see any linkage between the potential exploitation of that situation specifically for horticultural applications and the anaerobic application? Would it work, in your estimation?

Ms Kelleher: The way anaerobic works is, if you've got some fresh organic material like food or manure—animal manure is another good example or any waste from food processing—it's very expensive to treat these aerobically with oxygen, because you just need too much air, and anaerobic works beautifully for these materials. Peat is actually a dead material. It's got no life left in it, which is why it's a good fuel. So I think peat, anaerobic digestion, all these different things, can be different parts of the portfolio that gives you a nice broad range of energy options. But there certainly is a niche for

anaerobic digestion. It has been used for a hundred years in sewage treatment plants here. So it's a very old, proven technology. It's just that in the last few years people have begun to use it for residential waste in a way that they didn't before.

Mr Parsons: I had a great question, but you answered it just before I asked it. This same process then would apply to sewage treatment plants?

Ms Kelleher: Absolutely. For all of the sludges from particularly bigger sewage treatment plants. In some of the really small ones around Ontario it's easier to stabilize sludges with a different process. But anything beyond certainly a million gallons a day, the economics of anaerobic digestion, there's no question that's what they all do.

Mr Parsons: Any concern about what's in the gas, what's in the sewage treatment plant? There's no control over what goes into it.

Ms Kelleher: That's always a concern. It's really controlled by the certificate of approval for an air emission from the sewage treatment plant, because sewage treatment plants that have digesters produce the gas, burn it and run engines for their own in-plant energy needs.

Mr Parsons: They may think they know what's going into the system coming to them, but—

Ms Kelleher: Sure, but you capture that by the government regulating stringently enough the air emissions from the facility.

Mr Bradley: I heard you mention the potential for manure. One of the problems that all provinces are looking at now is with manure from what we would call almost industrial farms or highly intensive cattle farms, and what to do with it and the potential it has for contaminating water supplies.

What application, specifically, would you see with your process with those kinds of operations, the factory farms?

Ms Kelleher: Totally natural fit. The previous speaker said that farms have their own on-site energy needs. The US Department of Energy right now is very strongly supporting on-farm digester applications to produce enough power to meet the farm needs. I don't have the numbers with me, but they've looked at what the payback is and they will top up the cost to a point where the farmer gets a reasonable payback on his investment.

1520

Mr Bradley: I think all members of the committee would be interested in that because that's one of the potentials for solving what's becoming an increasingly challenging problem for governments everywhere, where we have not as many of the old, small farm operations but now very large operations, almost industrial operations, and we know how much manure they produce. If that can be dealt with in an appropriate fashion, this would be wonderful.

Ms Kelleher: While digestion is really effective at it, it doesn't really alter the nutrient balance, because the nitrogen and phosphorus going in are the nitrogen and phosphorus going out. What it does is, it totally controls

odours from these farms, which are now a huge problem, especially for the neighbours. That's what they're used for in Europe: Denmark, Holland. They use the digesters to treat the manures to control the odours, and the side benefit is that they get a substantial amount of energy back which is used on the farm or else is tapped into the grid.

Ms Churley: I'm really pleased that you came here today with this presentation. By coincidence, I brought up the anaerobic digestion course this morning when we were talking about what kinds of alternative energy and fuel we should be looking at here. I was arguing that we shouldn't be looking at the old burning of garbage, despite the latest technology. I don't think most people here even heard of it until we had the Adams mine debate and all of a sudden everybody started to become interested in that issue. I toured a pilot project that was very interesting to see.

My question then is, given the problem with siting landfill—I expect the same problem would happen if a government chose to build an energy-from-waste plant, the old traditional style of just burning it; they'd have the same problem—what do you propose we do to kick-start this as a viable option to deal with our solid waste? Right now we know it exists, we can get it going and it would make a huge difference to the garbage problem, but nothing's happening beyond a few pilot projects.

Ms Kelleher: I think it all boils down to money and whether it's cost-competitive. Particularly with landfill tip fees at \$50, \$55 a tonne, people will absolutely go for the digestion option as opposed to landfill or whatever else. So it's all a question of money, and to make something economically viable, you have to put the different pieces of the puzzle together so that the money makes sense. Right now it probably costs a bit more than landfill. Some municipalities are certainly looking at it and saying, "We don't mind paying a few dollars more a tonne. This looks better than landfill." So it's a question of putting the package together so that it costs the same or a little bit less than landfill, and then everyone will build these facilities.

Ms Churley: In fact, as I understand it, the biggest problem with landfill is the organics that go into it, which of course cause all kinds of—

Ms Kelleher: Yes, the organics cause all the problems. They cause the gas production, which is one of the risks of landfill. The anaerobic digestion process that happens in landfills creates an acidic environment where the metals are precipitated and they end up in the leachate. So most of your environmental problems around landfills are caused by the organics. If you get the organics out, you solve most of your problems. That's what they're doing in Europe with the EU Landfill Directive. They're saying that 75% of the organics have to be out of landfills by about the year 2008.

Ms Churley: They're moving away from old-style garbage incineration, are they not?

Ms Kelleher: Yes. It's publicly unacceptable in virtually all European countries now.

Ms Churley: OK. I rest my case.

The Vice-Chair: Thank you very much for your presentation.

ENBRIDGE

The Vice-Chair: Our next presentation is from a company we've heard quite a lot about in the last three days, Enbridge. Welcome.

Ms Marion Fraser: You all have handouts, right?

The Vice-Chair: Yes, we do. Welcome, and please state your name for Hansard.

Ms Fraser: I'm Marion Fraser. I'm the director of marketing for Enbridge Consumers Gas. I'm here today representing Enbridge as a whole. I have 22 years' experience in the energy industry, particularly the energy efficiency and environmental side of energy. I've been with Enbridge Consumers Gas for three years.

What I'd like to do today, the purpose today, is to explain why we're so pleased to have this opportunity to present to this important and timely committee. I congratulate the government, the members of the opposition and the rest of the members of the House in terms of setting this committee up because it is so timely as we look toward market opening. I also congratulate you on sitting these long days in the twilight of summer. It's beautiful out there today and yesterday was even better.

What I'd also like to do is provide a slightly different vision of the role of distributed energy in our energy future. I say "distributed energy" because I want to differentiate it to some degree from a lot of what you've heard about in the past week in terms of distributed generation. I think distributed generation is part of that but energy is a much broader alternative for us to look at.

Finally, I'll provide some recommendations for your consideration.

Just a few little words about Enbridge in terms of why we're here: we're not just a natural gas utility. I know you've been asking a lot of questions about natural gas, but Enbridge is really in the overall energy distribution and services business. We do have traditional energy supply businesses: the world's longest liquids pipeline that stretches across Canada; Canada's largest and oldest natural gas distribution company, formerly known as the Consumers' Gas Co, with in excess of 150 years of operations; and Cornwall Electric.

We are also very active in terms of energy efficiency programs and services. I guess you've already heard a little bit about our demand-side management programs and the success we've had there since 1995, when we first started doing energy efficiency programs. In fact, we've saved in excess of 250 million cubic metres of gas, which is enough to heat 100,000 homes in Ontario. So it's pretty substantial, and we're moving forward to continue those programs.

It's partly due to our interest in the environment, but also as a result of the innovative regulatory framework that has been put together based on a lot of work from the environmental groups in terms of participating in the

Ontario Energy Board, as well as other interveners and our own company, in terms of working out a way we can make this work.

In addition, we have affiliates that provide competitive energy services to business and homes, helping them make their homes more energy-efficient, helping them make their buildings and their businesses run better.

In addition, we're also very interested in alternative energy technologies. We have a very active natural gas vehicle program, encouraging particularly in terms of the conversion of major fleets. Enbridge has a \$25-million investment in fuel cells, and one of the handouts I've circulated to you is probably the best two pages on fuel cells that I've ever seen, put out by David Suzuki and the Pembina Institute. I've just provided that for your own information.

We are also a partner with Suncor in their \$20-million wind power project in Saskatchewan, which will generate about 11 megawatts of power when it's completed and represent about 10% of the wind power production in Canada.

1530

We're also very proud of our environmental leadership and our record, and that's why I brought this along for you. What we tend to do on the environmental side is work in partnership with other players in the marketplace who have similar objectives. For instance, we were a founding sponsor of the Toronto smog summit. We've been working with the city of Toronto for quite some time in terms of the Better Buildings Partnership, helping to finance and encourage the retrofit of a lot of the city's buildings, not just those that are city-owned but also ones that are just located in the city. We're a member of the Clean Air Renewable Energy Coalition, which I believe is going to be talking to you. We're a major funder of the Canadian Energy Efficiency Alliance's virtual energy centre, which is on-line now and has a wealth of information on that.

We have been honoured with some environmental awards, some of which I have listed there. Some of the comments you've heard in the past two days I think speak well of these kinds of things. Pollution Probe was nice enough to recognize me last fall at their annual dinner. They gave me a special award and named me the queen of energy efficiency, so I'm kind of thrilled with that.

I want to talk a bit about what the energy future is all about. Conservation is clearly an important part of that, but it's not the only part. As I said earlier, I'm not here to suggest that we should stop using electricity and only use gas, or make any other fuel-specific statements. I see gas and electricity as being complementary goods in terms of where on the continuum, from a very large central power plant such as Lakeview to a fuel cell, not just in the basement but maybe a fuel cell right in an appliance. You can convert gas to electricity to do the kinds of incredible things that electricity can do.

Our energy future will not be like it was before. We're going to see substantial changes from a centrally driven, centrally planned kind of energy future to something that

is much more robust, much more totally distributed. We can't think of our energy future just in terms of supply. Supply and demand all become very integrated in the future. People will be able to generate electricity on their side of, say, a gas meter. So we're looking at all of these different things. Appliances themselves will become smart appliances and know when to turn themselves on and off, depending on the price of electricity coming through the grid and things like that.

We've taken a very broad definition for distributed energy. We think it's an appliance or technology that generates or delivers energy close to the sites where energy is used. It may be enough for a single home, a neighbourhood, a commercial building or group of buildings, an industrial plant or larger complexes. The potential exists to supplement distributed energy with imports or exports to the electrical grid to provide an increased flexibility and diversity to the whole energy picture.

If you really want to think about this in terms of a metaphor, distributed energy is to centralized generation what the Internet is to the library. A library was something that had to be organized in a certain fashion, had to operate in a certain way and was linked to one large building, whereas the Internet is ubiquitous, has access and creates a whole different way of thinking about it. That's what distributed energy is going to do for us. There is not one best way in the future; it's going to be a whole series of improved solutions.

The issue here is to create a market environment that allows these solutions to come together and work together. It includes fuel cells; microturbine; combined energy cycle plants; cogeneration; trigeneration, where you have cooling, heating and power; district energy; neighbourhood energy; energy from waste; solar; wind; geothermal; heat pumps; energy storage and so on.

We see this as having a great value to consumers. In fact, it's this kind of distributed energy approach that's really going to provide the true competition that will bring down, perhaps not energy rates but energy bills, and that's much more important. It will provide flexibility; it will provide choice and it will provide environmental benefits.

If you take a large power plant like those proposed by Sithe, it's really no different than a large power plant such as Lakeview. But if some of those distributed energy options are within the customer's control or in a neighbourhood's control, they can turn equipment on and off, they can switch from one fuel source to another, depending on the price signals, and that will enable the competitive market to work a lot better. As a result, it will bring down bills and enable customers to make a choice. In actual fact, customers don't want molecules or electrons; they want hot showers and cold beer. Having tried to sell energy efficiency for a long time, I know that's all they're really interested in. If they can do it for less, great.

I've given you a bit of a timeline in terms of how we at Enbridge see distributed energy markets coming into play, but we really do see some opportunities for the

government of Ontario to provide assistance, leadership and direction so we can ensure that Ontario's energy future includes the environmental and economic benefits of distributed energy.

Some market rules and some of the regulations—we need to make sure they support distributed energy, such as exemption from some of the debt retirement surcharges and so on, and remove some of the grid protection policies. To some degree I think we're in the midst of trying to create an electricity market that imitates the way Ontario Hydro used to work when it was a fully bundled electricity supplier and made very centralized command-and-control decisions.

I think we need to make sure our rules are providing this opportunity for the diversity inherent in energy efficiency and in distributed energy.

We need fair and flexible emissions reduction trading systems that reflect a full life cycle impact of energy, not just point of use. I believe some of my colleagues from Union Gas talked about that yesterday.

We need financial incentives like the PST rebate for natural gas vehicles. That has been a big support to natural gas vehicles and fleet purchases and so on.

We need support for technology research and development.

I think our record with respect to DSM demonstrates that it's important that all energy distribution companies, including district energy, be charged with the responsibility of helping customers make the best use and get the best value for their energy dollars. I know Mr Laughren was here from the OEB, talking about how they were looking at including some DSM, and for the electric utilities as well. It makes good sense, makes for good customer service, and gives good financial value.

Finally, I suggest continuing and maybe even strengthening some lead-by-example kinds of things. We've seen some government building retrofits. I think there are still opportunities for more: natural gas vehicles for government fleets, for example. We've worked with the city of Toronto to create a better transportation partnership which provides innovative financing so that they can accelerate their purchase of fleets of natural gas vehicles, which create tremendous savings, particularly for high use. Similarly, we've worked with the city on taxi reform to get many of the city's taxis converted to natural gas as well, with economic and environmental benefits right across the board. There are things like procurement policies to make sure that, whether it's purchasing power with some green aspects to it or whether it's purchasing other equipment, some of these things, like natural gas vehicles, are considered.

Finally, I think technology demonstrations provide an opportunity to provide increased comfort with the development of new technology.

That's my presentation. I would like to answer any questions you might have.

1540

The Vice-Chair: We have about a minute and a half per caucus. Given that the official opposition is not represented here, I'll let the PCs go first.

Mr Hastings: Thanks for coming in and presenting more than a corporate perspective. I see in the book you've distributed to us that you are establishing a better relationship with aboriginal peoples. I'm wondering if you could flesh out a little more as to how you see a connect between aboriginal economic development and wind energy or solar in northern Ontario. It could be across the province but primarily in the north for economic development.

My second question is, do you believe the Ontario Energy Board should be tasked more urgently with the demand side management situation? We had a utility in here from Collingwood—it was actually in London the other day—and they were very concerned that they are going to lose a lot of their hot water customers if the energy board doesn't direct and be involved more in the decision-making for setting rates which take into consideration off-peak hours of energy.

Ms Fraser: In terms of our efforts with the aboriginal people, we're certainly working with them cooperatively to develop approaches and policies and so on. But yes, I think some of the wind and other off-grid things would be very important to northern Ontario and will provide some—basically, flying in diesel fuel is very costly, including environmentally, so I think there are areas there that could be very important. Also, in terms of the potential, community energy is of great value because their culture tends to promote those sorts of communities. So working along those lines would be of value as well.

Mrs Bountrogianni: Thank you for your presentation. We've heard a lot about your company in the last three days. You've obviously won the trust of your consumers. Again, based on what we were speaking about earlier—I saw you were here—when we were talking about how difficult it is to change, how did you do it? What was your program?

Ms Fraser: As the previous speaker said, to some degree it does take money. Unlike in my previous incarnation when I worked for Ontario Hydro, where our incentives were very large, we've used incentives very sparingly. But it's almost like the flashing blue light at Kmart; it gets people's attention and then they do something with it. We've blended savings programs. We have a number of contractors across our franchise area who, when they are out doing work, will add an energy efficiency package to what they are doing. So we're piggybacking and essentially helping to grow the pie for energy efficiency and energy-efficient work.

We've also recognized the significant advantages to focusing, with some of our major customers—for example, we started working with some of the greenhouses down in Niagara to help them reduce their energy costs. This year I think \$14 million, which is probably about 20% of our savings, will come just from the greenhouses in Niagara—quite substantial projects. So once they see the value in it—

The Chair: Thank you very much. Ms Churley.

Ms Churley: I'm really interested in energy conservation and efficiency. I think that's got to be the

number one priority—set the table with that—and then changes in regulation, and I suppose financial incentives and instruments. Because we're called energy hogs here in Ontario—in Canada, as you know, we waste so much—what kinds of things do you think we should be doing, you and the rest of us, over time to bring more conservation programs in the whole sphere of alternatives?

Ms Fraser: The energy distribution companies, I think, represent a very important electric end use to make sure that the innovative regime that we've set up can work for all of them. So I think that's part and parcel of it.

There are areas, particularly in new building design, that are still a tough nut to crack. You can go into a brand-new building and do an energy performance retrofit and get savings, which is just ridiculous. I think there are some areas there in terms of building code energy efficiency still in the building code in Ontario, which is good, but we need even more and we need more regulation. The building code inspectors, a lot of them, don't really know what it is that they're looking for, so I think there are a lot more areas there that can do something.

The Chair: The time's run out. We appreciate your coming and presenting and I believe you're the first queen who's presented to this committee.

Ms Fraser: I left my crown at home.

CLEAN AIR RENEWABLE ENERGY COALITION

The Chair: Our next presentation is from the Clean Air Renewable Energy Coalition, CARE, Keith Stewart and Helen Howes. Would you state your names for Hansard.

Ms Helen Howes: My name is Helen Howes. Although I work for Ontario Power Generation, the reason I'm here is that we are a member of the Clean Air Renewable Energy Coalition, CARE. Keith, do you want to introduce yourself?

Mr Keith Stewart: Keith Stewart. I work for the Toronto Environmental Alliance, but we also, along with a mix of other environmental groups and industry and municipalities, are a member of the Clean Air Renewable Energy Coalition.

Ms Howes: The purpose of our presentation today is to share with you some of our thinking among the coalition members about ways to incent green power across Canada, and we'll give you at least some thoughts to think about as to what we could do in the province of Ontario. I'm going to begin by introducing who the CARE Coalition is and I'm going to be turning it over to Keith for some more specifics.

It was formed in the fall of 2000. The major drivers behind the coalition were Suncor Energy and Pembina Institute out of Calgary. There are, however, 17 NGO and business members. The Ontario members are noted here. They are Dofasco, Friends of the Earth, Ontario

Power Generation, Toronto Environmental Alliance, Toronto Hydro and Pollution Probe. I think over the last day or so you have probably heard support for the CARE Coalition from both Toronto Hydro and Pollution Probe.

The purpose of this coalition is really to kick-start renewable energy technology in Canada. We have given you two publications. One is a two-pager that describes very briefly what the coalition is about. The second one is probably of more interest because it gives an overview of what other countries are doing in the area of green power and it is pretty clear that Canada is lagging behind other countries in this area.

Our focus is mainly the federal government. We wanted to focus in two areas: one, to increase the demands through a consumer green energy credit. The other area is to increase the supply, and there are a number of mechanisms that we have highlighted. There could be production tax credits, there could be investment tax credits, there could be a Canadian renewable conservation expense, expansion of the activities that are currently eligible for that credit.

What we are proposing as a coalition is really an interim step until, as we have said, a greenhouse gas domestic trading system is available in Canada. So this is really to bridge the gap, because we believe that some of the advantages of green power will be realized through their contribution to offsetting or replacing Canada's CO₂ demands.

This is where I turn it over to you.

1550

Mr Stewart: The CARE Coalition has been focusing on federal tax changes and it's been a national coalition, but we began discussions on appropriate provincial measures. Of course, the provinces have primary regulatory responsibility for the electricity sector. So what we're going to talk about today really is a result of some initial discussions and we'd probably like to come back to you later, once we've had a chance to flesh these out a bit more in the fall.

But similar to what we're asking for at the federal level, we think we're going to need both push mechanisms and market pull mechanisms, so things on the production side and on the consumer side.

One of the mechanisms that you've already heard a lot about, I know, is the renewable portfolio standard, which we would see as a very important complement to some of the tax changes which are being proposed. We've also looked at other mechanisms such as net metering. There are things on transmission rules which vary from province to province, and provincial tax rules. There's general agreement on having government procurement as part of helping kick-start green power and the need for increased consumer awareness. There's going to be a role for government in this, whether it's labeling or certification.

We've talked about the consumer tax credit. Part of the reason we're looking for a consumer tax credit is because that will really help with public awareness-raising. I think it's going to get a lot more people inter-

ested in it in the sense that they're going to see that they can get something from it for themselves.

There's also going to be an important role in this area for non-governmental actors to promote consumer awareness and green power, but there are a number of things which can be done by the provincial government and I guess you've already heard a lot of them.

We want to highlight a little bit about some places that have done some things. The one I'm going to speak about here is Texas. It might be surprising but, under George Bush Texas developed the strongest regulatory support for renewable power, pretty much, in the United States. Part of what they did was they learned from other jurisdictions. Texas has one of the best renewable portfolio standard laws. They're going to shortly jump past California as the lead in renewable energy generation in the US. The renewable portfolio standard they brought in was reviewed by the independent assessors as ambitious but achievable. The government did polling prior to restructuring the electricity market which showed very strong support from the public for renewable energy and the government determined that the RPS was the most cost-effective way of creating the larger renewable energy market desired by consumers. They developed a fairly well-crafted rule, which is universal, stimulates new investment, provides flexibility in meeting the requirements and actually has penalties for not meeting them.

They've also brought in a series of other tax incentives. In the US there's a federal tax incentive, a wind energy production tax credit. They also leveled out some of the obstacles within the transmission system to renewable power in terms of things like embedded generation. Actually, on that part I don't know the details; I'd have to go down and look at their law. And they have some state tax credits which are supporting renewables.

In terms of things like line extensions, where a remote site is going to have to be put in—basically a line has to be run a long distance to some site—the company that would do that is required by law to make the would-be purchaser aware of all the remote renewable technologies available so that that line doesn't have to be put in. That might be particularly interesting for some applications here in Ontario, where we do have a series of remote sites. And they have a net metering law.

There's this overall package which was adopted to promote renewables, and the overall targets are quite good. They're actually overachieving so far, I believe, and they're expected to jump past California maybe next year in terms of overall production of renewables.

Ms Howes: I think the point that Keith and I want to make is, as a coalition, we haven't landed on whether renewable portfolio standards is the right answer or a tax credit or net metering etc. We still need to do some work as a coalition. The reason we wanted to illustrate these two cases is just to show you the range of mechanisms that are often put in place in various states in order to incent green power. Some of those may work here, some

of them may not work here. Keith and I are early days, certainly, in this research and Keith's offered to come back when we've done a more fulsome review to give you a sense of how well some of these mechanisms work. It's an offer that we'll put on the table.

Massachusetts is an interesting state as well because it illustrates the number of mechanisms that were put in place. They didn't just rely on renewable portfolio standards etc. Just for information, Massachusetts's electricity sector was restructured in 1997, so they've got a couple of years' worth of experience. They had a number of tax incentives. If you purchased renewable technology equipment you were exempt from the 5% sales tax. There was an exemption on your property tax if you claimed solar or wind etc for your own personal use. There were also some corporate income taxes that were available to corporations if they used renewable technologies for space heating or water heating. There was a personal tax credit as well, so a variety of tax incentives.

They also introduced a systems benefit charge. Typically systems benefit charges are used for public awareness programs and that's certainly what this program will do as well. It's early days. I think they are looking at something like \$150 million over a five-year period for the systems benefit charge. It is focused on education and awareness.

They've also tacked on net metering and that allows those who have some of the renewable technologies installed to sell the excess back into the grid. They too have a renewable portfolio standard. I think it is perhaps less aggressive than Texas, but I think the proof will be in how much new renewables they put on the system. They were looking for a 1% increase per year and then gearing up to 1.5% per year after 2003. So they have a five-year target for themselves. They also have disclosure rules to protect their citizens as they're buying green power so that they are aware of the emissions that are produced and what the generation mix is. There is some extensive outreach program across the state, because I think we all agree that awareness and understanding is a key piece of this.

So we offer Texas and Massachusetts just as examples. I don't think we're endorsing either Texas or Massachusetts. I think we can come up with our own solutions in Ontario. But it's just illustrative of the kinds of things that can happen in other jurisdictions.

That's the end of our presentation. Keith, I'm sure, will take questions to the ability that we're able to answer.

The Chair: Thank you very much. We have maybe a minute and a half per caucus. We appreciate particularly the last two items you brought forward. They're very helpful. The recommendations being brought forward are very helpful for us. There are beginning to be some common denominators here. We'll start with the official opposition.

Mr Bradley: First of all, I look at the Texas and Massachusetts examples. Would it be safe to say that a hybrid of Texas and Massachusetts, where you could

cherry-pick from both of them what is best, both of them would be perhaps what we could best implement in Ontario? Is that fair to come to that conclusion, and perhaps some other jurisdictions which have good initiatives?

Mr Stewart: My opinion would be to take a look at some of the best and most effective measures which have been adopted in other jurisdictions and use those to develop an Ontario package. Particularly in Europe and in a number of US states now there are some systems that have been running for a while. We should look at those and see how we can make similar types of things work here in Ontario.

Ms Howes: As a quick point, we do have a good deal of research that gives you examples state by state of what's been implemented. What we can't tell you is how effective they are. But I would be more than willing to leave it for your research person to see the material. It's pretty weighty.

1600

Ms Churley: I think it's wonderful that you've pulled this coalition together. This is going to be critical information for the committee, because I think we would all agree that in order to get these renewables off the ground we have to have some mechanisms to help that happen, and there are so many options. I believe that everybody is willing to look at those options and recommend them to the government so that we can get moving on this. Are you looking at European options as well, what they're doing there? That's my first question. The second question: when do you think you can give us definitive recommendations on these?

Mr Stewart: I know that some of the people within the coalition have looked at it. It's one of these things where everyone is throwing in information that they have.

Ms Churley: So there's a lot of information and that's part of the problem?

Mr Stewart: There's a lot of information. I think we can try and sift through some of that and send the best sources on to you.

Ms Howes: We agreed as a group that by the end of September we would have pulled together the information on renewable portfolio standards as well as the supporting mechanisms. The group is very familiar with Denmark and Germany, so you're going to see a lot of Danish and German experience in addition to American experience. We're targeting the end of September, so where we are at the end of September, we'll pass it on to you.

Mr O'Toole: It's good to see you, Helen. Is the windmill working today?

Ms Howes: It's spinning a little better than yesterday.

Mr O'Toole: Wind generator, actually.

Ms Howes: Wind turbine, yes.

Mr Bradley: The photo-op.

Mr O'Toole: My contribution was the photo-op, I suppose. It's an important demonstration by OPG, and I commend you on the alliance.

On the second page here, the purpose of the CARE coalition, it seems like conflicting kinds of focuses: "increase demand through a consumer green energy credit." The management of demand is very important to keep that down. The consumer, the puller on this whole system, has to have a serious responsibility. That's something I'd like you to comment on. Increasing supply is another one. I'm wondering—on the generation side, we continually want to build more capacity, which enhances the wasteful resource. We're consumers, as has been said many times. There too I would like you to clarify for me a bit.

On the two examples you've given, Massachusetts and Texas, I think the tax incentives—it was good to hear Ms Churley talk about supporting reducing taxes, and it's the first time I've heard that.

The Chair: Maybe we can give them a chance to answer; we're running out of time.

Interjection.

Mr O'Toole: Not really.

Ms Howes: Except it's our time, so let us answer the question.

Mr O'Toole: That's right—the increased demand and increased supply.

The Chair: We're looking forward to your answer.

Ms Howes: I think our sense was that we know that energy efficiency and energy conservation have got to be part of the solution as well. This was really focusing on two aspects of green power. We could subsidize the industry, which is probably a good thing, but we wanted to sunset it so that's why it's a three-year kind of program at this point. I think the other piece of it here is that we want consumers to buy it so that it's not just a subsidy for an industry, that we truly have the customer poll piece of it. I think we're quite supportive of energy efficiency and conservation.

Mr Stewart: On the increasing demand side, what we're also looking to is to displace highly polluting sources with this new cleaner source.

The Chair: We've run out of time. Thank you very much. We really appreciate your coming forward. You have some excellent examples for us to get our teeth into.

Mr Hastings: Can we ask the researcher as well as the clean air group to look at the carbon-based flow-through share, which is the same thing as your renewable expense allowance in your overhead, and the efficiencies of tax credits generally?

The Chair: OK, a fair question.

SUPER BLUE BOX RECYCLING CORP

The Chair: The next presenter is from the Super Blue Box Recycling Corp, Matt Larmour, project manager. There's a total of 20 minutes for presentation and questions and answers from the respective caucuses.

Mr Matt Larmour: My name is Matt Larmour. I'm a project manager with Super Blue Box Recycling Corp and Eastern Power. Eastern Power is the parent company of Super Blue Box Recycling Corp, SUBBOR. My

colleague here is Gregory Vogt, who is the president of both of these companies. The clerk has distributed some information that I'm going to read from.

Chairman and committee members, I would like to thank you for hearing our representations to you about the ability of Eastern Power to generate renewable green electricity through anaerobic digestion of municipal solid waste using the patented technology developed by Eastern Power/SUBBOR and demonstrated in Ontario.

Eastern Power is a private Ontario company that has developed, designed, constructed and now operates electricity generating stations at Toronto's municipal waste landfill sites at Keele Valley and Pickering. These power stations convert the gas given off from the waste material into 65 megawatts of electricity continuously and make Eastern Power a world leader in this business.

Eastern Power has developed SUBBOR technology as a result of experience at landfill sites. SUBBOR technology avoids the need to landfill waste materials by providing large concrete tanks wherein the waste is deposited to decompose through anaerobic digestion of the organic component. The waste decomposition takes place under specific controlled conditions and produces biogas. The efficiency of biogas production and conversion to electricity is very high, and SUBBOR holds worldwide patents on the methods used to accomplish this. Previous presenters have referred to processes in Europe that are very similar to this but not as good.

The SUBBOR process is being demonstrated together with the city of Guelph, Ontario, where the company has built a \$30-million pilot plant designed to process 25,000 tonnes per year of MSW, with expansion to 100,000 tonnes per year of MSW. This plant has an installed capacity to generate 4.5 megawatts of electricity continuously. This SUBBOR plant has been developed by Eastern Power Ltd in partnership with Industry Canada through the TPC program and Environment Canada's TEAM initiative to reduce greenhouse gases.

You may be interested to know that a single tonne of municipal solid waste landfilled emits almost three tonnes of greenhouse gas equivalent. The SUBBOR process, therefore, has an extremely high potential to reduce greenhouse gas emissions by avoiding landfilling municipal waste at the same time as providing green electricity. In fact, we have calculated that if Canada's municipalities with a population of over 100,000 people were to utilize the SUBBOR approach, there would be a reduction in greenhouse gas emissions from landfill equivalent to 70 million tonnes of CO₂ each year, which would achieve 50% of Canada's commitment at Kyoto while producing as much electricity as a Pickering generating unit.

For the record, I would like to make certain that you understand that SUBBOR technology does not entail burning waste. SUBBOR carries Eco-Logo certification. The SUBBOR process is non-polluting and the electricity is generated using renewable biogas that is a clean fuel comparable to natural gas. I think you've heard all about that from previous presenters.

SUBBOR plants are non-polluting and are suitable to be sited, for instance, in urban areas where municipal transfer stations would otherwise be needed. Such a plant would generate seven megawatts of green electricity and provide heat energy to the community, if required.

I would like to point out that SUBBOR anaerobic digesters can also safely digest organic waste materials from other sources such as sewage plants and paper mills. In many instances these wastes are currently land applied.

The point is that electricity production using the SUBBOR process can be beneficial in the community and not problematic. A community utilizing SUBBOR technology will achieve a minimum waste-recycling rate of 65% through production of electricity alone, without including the additional material recycling potential of SUBBOR.

Eastern Power is an experienced generator of green electricity in Ontario and will be supplying the new market when it is opened from its existing landfill gas-fuelled power stations. Each of Eastern Power's SUBBOR electrical generators will be modest compared with other major generators. I'm talking about Enron and OPGI, people like that.

1610

It is important that the new market organizes to avoid discouraging small green generation because of complexity, licensing, dispatching, connection and other overheads associated with market participation. It's a nightmare. We recommend that green electricity like SUBBOR electricity be provided encouragement in keeping with the desire of the community at large to embrace it. Because SUBBOR has conducted surveys and open house presentations in the community of its technologies, we have learned that 90% and more of residents in every community support this approach.

We recommend establishing a green power category in the electricity market, supported by measures such as recognition in the market rules, required portfolio green standard and a method to provide the best price to the generator.

SUBBOR technology is a platform technology. Eastern Power and SUBBOR have assembled a group of scientific staff and developed expertise here in Ontario and Toronto that's second to none in the world. We don't need to import these technologies from elsewhere. This expertise is resident here in Ontario, working closely with the University of Guelph, the University of Ottawa, the University of Toronto and other universities in North America to continue developing anaerobic digestion applications to biomass elsewhere.

That's the end of my presentation. I'm open to questions.

The Chair: Thank you very much. We have approximately two minutes per caucus, beginning with Ms Churley.

Ms Churley: Thank you very much for your presentation. You're the second deputation today on this issue. I believe this is the plant that the leader of the New

Democratic Party, Howard Hampton, went to tour and raised it in the Legislature as an alternative to Adams mine. The whole issue around getting the organics out of the waste stream solves a lot of the problems to begin with, because it's the organics that cause the big problems in the landfill. So I'm really glad that you're here promoting this today. I understand that there are people from all over the world coming to look at your plant, it's so good.

My question to you: you don't have a lot of time now, but you said it's a nightmare getting through, I suppose, the red tape and processes. I would recommend that we put this on our list of alternatives. I believe we would all agree with that. What's the first thing you'd ask us to recommend to the government to help you get through the roadblocks?

Mr Larmour: I think the roadblocks I refer to are in some cases very necessary protocols that are in place to control the production of electricity and its introduction to the market. However, it gets complex for a very small company. You know, if you're producing 20,000 megawatts a year, you can carry a very large overhead. But if you're a small company that's producing a lot less than that, the overhead on a per kilowatt basis becomes too much.

There are proposals in the market, for instance, to allow producers below one megawatt not to have to follow dispatch regulations etc. These are the kinds of things that we're asking be looked at and applied to green power.

Mr O'Toole: Thank you very much. I'm quite interested in this. As you've mentioned, one of the demonstrations is at Pickering, and I didn't realize you were the operator there, but I am familiar with that site.

You mentioned on page 2 that SUBBOR anaerobic digesters are used in sewage plants and paper mills. As you said, these are land-applied, so it's a big issue in my riding of Durham. I'm wondering, have you approached, or do you have current applications anywhere in Ontario where—see, they're actually planning now to either burn the sewage sludge or this paper waste as landfill, which ends up with all the material somewhere in the water table eventually. Have you got any applications where you're actually using this process to deal with paper sludge? I'm thinking specifically of Atlantic Packaging.

Mr Gregory Vogt: Maybe I'll answer that question. We've been working very closely with universities in terms of developing the technology specifically in these areas, but in terms of applications, right now none of the paper mills or the people who are making sewage sludge have seen much need to go to a sophisticated technology. They seem to be quite happy with the land application and the landfilling. Mind you, the environmental implications of that have been quite serious, but we have not seen a turnaround in the industry where people are saying, "We need to do this." Some people have sort of kicked the tires a little bit and we've had some discussions with them.

Mr O'Toole: Is it going on somewhere in the world today?

Mr Vogt: Anaerobic digestion of these things?

Mr O'Toole: Sewage sludge and paper sludge.

Mr Vogt: Actually, in every sewage treatment plant some form of anaerobic digestion takes place, but the final sludges tend not to be fully digested, and that tends to be the problem. Our technology does that. So, actually, no, it's not going on anywhere in the world. We hold the patents on this technology.

Mr Larmour: Just to embellish what Mr Vogt said, in our laboratories we have run paper sludge and sewage sludge through our digesters to prove that the digesters will handle that kind of material. We have the data, we can design the equipment, we can do the job, and we are speaking to one paper company in particular that sees the benefit of doing this in eastern Ontario and is talking to us about following up with that. He is most interested in the cogeneration aspect.

Mr O'Toole: That's right. Generate the plant from methane gas or whatever it is you produce to power their own plant.

Mr Larmour: That's right.

Mrs Bountrogianni: Thank you for an excellent presentation.

The Chair: We do have a little extra time if there's another question from anyone.

Mr Hastings: A lot of people are presenting along the theme of what can be achieved environmentally, economically. You folks are in the everyday world of dealing with the companies and skills. I'm wondering if you have any views on what this committee needs to focus on in terms of the educational infrastructure or the skill sets that need to be developed or embellished or changed, from electrical inspectors on net metering to the training and development of people in some of these alternative fuels and your own applications. Do we need better lawyers for intellectual property registration, that sort of stuff? It's out of our field, but I'm sure we'll make some comments about our federal partner's role in this, since they were very much involved when we were in Ottawa.

Mr Vogt: Actually, in terms of educating the people infrastructure, we've been pleasantly surprised in that area. There's a lot of expertise in anaerobic digestion in general. There's a lot of expertise in alternative fuels in Ontario. You know, university training in these areas tends to be very well advanced. Environmental courses and whatnot are pushed very hard. So the awareness, even among the professional skill set, the lawyers you mentioned, tends to be quite high.

Mr Hastings: What about at the maintenance level if we get down the road and one of these industries takes off? Yours, for example.

Mr Vogt: Yes. Like our landfill gas business, we become world leaders in that, and we've actually found the level of qualifications of the professionals has been quite high. That has tended not to be the problem.

Getting them started: each one of our projects to date has taken about five years to go from concept to actually

getting a shovel into the ground. That seems to be just the order of the day, because there aren't broad policies which tend to push the stuff through. We've had to take municipalities to the Ontario Municipal Board with the argument that it's good for the environment, it doesn't violate your Planning Act, so why aren't we allowed to do it? They usually back down before you get to the OMB, but you've got those sorts of obstacles and people are looking at each other and saying, "We don't want to be the first person to do an environmental project."

Mr Hastings: It's more attitudinal than educational?

Mr Vogt: Exactly.

The Chair: Thank you very much for your presentation; it was very interesting. We appreciate your coming before us.

BRITISH ENERGY (CANADA) LTD

The Chair: The next presentation is from Tony Morris, manager of business development for British Energy (Canada) Ltd. Mr Morris, please state your name for the sake of Hansard.

Mr Tony Morris: My name is Tony Morris. I'm the manager for British Energy (Canada) Ltd. I've spent 26 years in the electricity supply industry in the public and private sectors. I've worked in western Europe, Russia and Ukraine. I've been an adviser on electricity reform in these countries and I've spent the last four years living and working in Toronto. I'm currently responsible for our investment strategy in the whole of the Americas from our Toronto office.

1620

Good afternoon, and thank you for the opportunity to speak to you on this very important subject. I represent British Energy (Canada), who is a major investor into Ontario, with a long-term interest in nuclear operations through its Bruce Power partnership and also a commitment to the expansion of wind power resources through our Huron Wind joint venture with OPG-Evergreen Energy.

It is from this perspective that I wish to describe a view of the future for Ontario that removes the conflict between green and conventional energy sources and presents a rational roadmap toward a balanced energy program that can deliver reliable and environmentally beneficial electricity here in Ontario.

It is our belief that the market can deliver the lowest-cost new generation. It is our confidence in electricity markets that not only drove our initial investment into the 3,100-megawatt operational plant in the Bruce site but also to our announcement in April 2001 of our intention to restart 1,500 megawatts worth of laid-up generation at Bruce A using private sector resources.

It is confidence in the operation of the electricity market which will drive others to make similar investment decisions in Ontario, whether this is into renewable or other clean generation technologies. Witness the announcement last weekend of a renewed interest in the

construction of new, clean, natural-gas-fired generation in Sarnia.

However, total reliance on the market for new generation may not deliver an optimal solution, as the market does not at present fully capture the environmental costs associated with most forms of generation. Some form of external market signal may be necessary to secure the required outcome.

Such signals can take the form of a renewable portfolio standard, as used elsewhere, to good effect. This is often known as a pull mechanism that can take established renewable systems and allow them to migrate toward a desired goal. The other method is to use the push-type mechanism that establishes a target, provides the financial support mechanism and enables the physical, legal, planning and administrative infrastructure for continued investment.

The scale of the greenhouse gas emission problem facing Canada is quite large. It was only in May this year that the Honourable Ralph Goodale, Minister of Natural Resources Canada, noted that Canada is 195 megatonnes above its Kyoto target, and in reality this means a 25% reduction from the current level of greenhouse gas emissions.

Let me be very clear: renewables have a significant part to play, but currently they can't address the needs of large-scale generation. It would take more than 700 large, modern wind turbines of the type just newly installed at Pickering to match the capacity that is about to be brought back on-line from the partial restart of Bruce A. That's 700 wind turbines. In practice it would take the construction of two or three times as many wind turbines—that's almost 2,000 of them—to meet the annual volume of electricity that will actually be generated by a restart at Bruce A.

Let me again be very clear: the point I am making is not a recipe for inaction over renewables but actually a call to arms regarding clean generation, and a renewable portfolio standard is actually a necessary step along the way. But is the adoption of the renewable portfolio standard enough, and does Ontario need to do more if it is to take advantage of the opportunities associated with the development of a renewables industry?

Evidence from other jurisdictions suggests that it is the combination of a pull mechanism with a push toward an ambitious renewable target that would best place Ontario as a leader in positively addressing greenhouse gas emission reduction.

The province is currently benefiting from its legacy of a balanced energy program. Recent events have also shown that much hydraulic generation is capable of economic life extension and can be uprated as and when economically warranted; that some existing coal and fossil generation can be economically retrofitted to meet all environmental targets, with the exception of greenhouse gas emissions, and that some existing nuclear facilities can be economically life-extended, upgraded or repowered to meet current safety and environmental targets.

But, ultimately, refitting existing plants will become uneconomic as major civil structures, the buildings and large items of plants such as turbines and boilers, begin to age and environmental targets begin to outstrip the capability of the plants to actually be able to meet the limits.

In the medium term, investment in new electricity generation will be required. At this point it is already clear that renewables must play a significant part and challenging targets are necessary; gas and clean coal can meet all environmental targets, again excepting greenhouse gas emissions; and new nuclear can meet all environmental targets, including greenhouse gas emissions.

It is my contention that the market remains best placed to deliver the future energy needs of Ontario. However, clear signals need to be relayed that allow the dramatic expansion of renewables and prevent the domination of a single technology or a single fuel. To do otherwise would place Ontario at the mercy of price hikes, supply restrictions and, ultimately, increased greenhouse gas emissions.

Now I will return to my roadmap for the future. In considering our further investment into Ontario we have examined many scenarios, and specifically there appears to be the need for expansion of renewables. For this to occur, actions have to be taken in the short term that allow positive investment decisions to be made. Although a renewable portfolio standard is one part of this, more needs to be done to accelerate the process.

I have submitted to you in written form a discussion paper for a renewables policy for Ontario that British Energy Canada has used to assist its own thinking in this area. I would point out that this document does not contain the latest input from the European Bonn accord nor the recently announced eastern Canada greenhouse gas bilateral agreement. But please feel free to use its content.

Let me summarize. In the short term there is the need to create a distinct market for green energy, recognizing that without this it will not be able to compete with conventional generation; we need to set challenging annual growth targets for renewables; and we need to establish a renewables structure that supports positive investment decisions.

In the medium term there is the need to tighten environmental limits; to further promote clean technologies; to create a market structure that rewards clean forms of generation; and to further raise environmental awareness so as to influence demand patterns.

British Energy Canada would be delighted to further assist the committee in its future deliberations and wishes you a successful outcome. Thank you.

The Chair: Thank you very much for the presentation. We'll start with the government. We have about two and a half minutes per caucus.

Mr O'Toole: Do you have your comments in writing? I'd like a copy of them. You made a statement there that I found quite compelling, that current technology does not capture the full environmental cost. I think that's a very

important observation that has been said in different ways, but I think that summarizes it, saying that whether it's the health costs or the indirect subsidies through capital or depreciation or whatever else, there are a whole bunch of mechanisms that are indirectly subsidized. On a one-to-one comparison, it disarms wind and other sustainable sources. It's important to have someone like you.

I'm quite surprised that you, coming from British Energy, where your main importance here is basically in partnership with Bruce, have made a commitment to the wind application there. One of the two or three points you made at the end with respect to the renewable portfolio standards—we've heard that several times, and I think it's an extremely important part of the policy picture, giving green power, renewable power, a better opportunity to compete on a level playing field, if you'd like to comment in a general way. I found that what you're saying is rather pro-renewable, and traditional technologies, be they nuclear or whatever, aren't really—they're the base load. You can't put yourself out of business.

1630

Mr Morris: I think what we're doing is describing a situation where there are some compelling short-term actions that need to happen, and that is to promote and take a leadership position with regard to renewable technologies. I've noted all of the other presentations today that were highlighting some of the points we were raising about the complexity of the marketplace as it currently stands for the small wind generator or small biomass generator, and I think we would fully support those points. That is coming from a rather large electricity company situated out at Bruce Power. In no way are we decrying the importance of our investments in the Bruce area and of nuclear power and its continuing important role, but we also see that renewables have a vital, significant and important part to play going forward.

Mrs Bountrogianni: You've listed in your written submission Europe's and the USA's targets. How would you compare Canada and Ontario in how we're doing and where we should be going?

Mr Morris: The opportunity is with all latecomers to a marketplace, because they take a leap over where everybody else is. This, to me, is the position Ontario is in at the moment and the position Canada is in. I actually believe in an Ontario that takes control, takes a leadership position and puts the right steps and the right pieces in place that will actually then allow Canada effectively to catch up at some later point. All the evidence, all the experience is all set out there. We've tried to condense in that document something we feel will help, will be useful. But there are some compelling signposts along the way that show how you can actually leap above and leap over some of what other jurisdictions have spent the last 10 or 15 years struggling with, and you will be able to take advantage of all that very quickly.

Mrs Bountrogianni: Are there any examples of countries in Europe or states in the United States that

were behind, the way we are now, and have taken leaps to catch up, or attempt to?

Mr Morris: I think the previous speaker alluded to places like Texas, which are coming in and overtaking. There will be other jurisdictions that do exactly the same.

Ms Churley: It really does take community involvement and government will to make this happen, doesn't it? That's the purpose of this committee: to recommend all these good things to the government, to get these programs off the ground.

You know the Harris government is in the process of deregulating Ontario Hydro. There are some problems associated with the way the deregulation is happening—so we've been told by most of those involved in renewables. Have you taken a look at how that's unfolding, and do you have any advice on what changes could be made there?

Mr Morris: I think you're referring to the problems of trying to make a connection for a small, unsophisticated generator into what is a well-sophisticated, integrated system.

Ms Churley: And subsidized in many ways.

Mr Morris: Yes. I think it's actually more a technical issue. I was alluding earlier to the difficulties we have had, even as a large company, actually trying to make an interconnection to the system for the Huron wind turbine. It has not been a simple process, and I think I've identified in my written evidence that Germany actually has a lot easier system. There are provisions in the German power system that make it very easy for renewable technologies to interconnect to the system, and it is actually a very painless exercise to go through, as opposed to what we have here.

Ms Churley: To some extent I think that for many it feels like a giant leap of faith, because we're changing the way we've been doing business for a very long time. I think that having this kind of documentation from previous experience will help the entire committee. When we get back to the Legislature, hopefully we will have more knowledge than most, from getting these kinds of documents and deputations, which will help us move forward on this.

Thank you very much for your advice today about your experience.

Mr Hastings: To Mr Morris: This is something I don't think you can answer today, but you certainly brought up a signal under points 7 and 8, in my estimation. As the renewables get off the ground, whether you have a subsidy structure, an incentive structure, market-driven or some combination, there could be a challenge made by the European commission or through NAFTA. I'm wondering if we should be getting a legal opinion through our legislative counsel and research, in conjunction with your own legal counsel, because this is the first time I've seen it signalled in terms of—and it could come in the next two or three years. We could have a softwood lumber arrangement from Washington, or from the European commission actually, because they are pretty good at this sort of stuff; they want to protect their

subsidies for their farm producers in France, for example. Do I have a good read on what you're anticipating and formulating in points 7 and 8, or is it a little off?

Mr Morris: No. I hadn't specifically referred to that. I honestly believe that there will be eventually a bilateral answer whereby it will be agreed throughout the whole of the Americas. But I don't think that should prevent Ontario taking the first steps in trying to establish a structure that can actually assume a leadership position with regard to support for renewables involving both the push mechanisms and the pull mechanisms.

Mr Hastings: In that context, then, should we be very careful in how we develop both mechanisms, both sides of the equation, for a legal challenge?

Mr Morris: The reality is I think all of the examples are out there, and I don't think the legal challenge would potentially come when we have examples of all of the different mechanisms working elsewhere within the Americas and within North America.

Mr O'Toole: To the Chair, I have a quick question.

The Chair: It'll have to be 15 seconds.

Mr O'Toole: At Bruce A development, are you going to do the four reactors, or just two of the four?

Mr Morris: We are restarting two of the four reactors.

The Chair: Thank you very much for your presentation. We appreciate your coming before us and offering your information. It's very helpful.

Ms Churley: Mr Chair, while the next group is preparing, I think that was a very interesting and important question Mr Hastings asked. A point of information: when I was Minister of Consumer and Commercial Relations, we challenged GATT. The Americans wanted to bring canned beer into Ontario. We challenged them and we won it on the basis that we have been returning our bottles since 1905 or whenever it was. The fact that it was in place already, that we didn't put it in, it couldn't be seen as a trade barrier in that case. That's why it's important to—

Interjection.

Ms Churley: Yes, they wanted to bring the cans in, but we'd been doing the refillable bottles since the early 1900s. So if you've got the rules in place, it can't be seen as being put in place as a trade barrier. At least that's the way it was on the GATT. We actually won that one.

Mr Hastings: My question was, Mr Chairman, could NAFTA or our existing so-called free trade agreement be a barrier or a challenge mechanism for renewables on the financing side of renewable energy?

Mr O'Toole: It's a federal question and that's who we should pose the question to. It's a federal issue. There are examples in Texas, Massachusetts and Michigan. RPS programs are clearly subsidies.

The Chair: A clarification through legislative counsel.

Mr Jerry Richmond: From the way the question has been posed—and I'd have to look at the Hansard—could there be, in simple terms, NAFTA challenges, I get the sense, to subsidy supports for green power? That's the essence of it.

1640

Mr Hastings: Yes.

Mr Richmond: From what you've said, that question could either be bumped to our federal colleagues for a response, or I should say that one of our lawyers could look into it to see whether under the current NAFTA agreement that's likely to be—

Interjection.

Mr Richmond: What is your preference?

Interjection.

Ms Churley: I think that it would be worthwhile to ask both. When we were going through the GATT ordeal we certainly had good people here working in conjunction with the feds.

The Chair: We'll table it to both. Are we almost ready for the presentation?

BODYCOTE MATERIALS TESTING CANADA INC

The Chair: Our next presenter is Bodycote Materials Testing Canada Inc. Mr Sumar, program manager. You have 20 minutes.

Mr Mehboob Sumar: My name is Mehboob Sumar. I am the program manager at Bodycote Materials Testing Canada Inc. As you know, we used to be called Ortech and in January 1999 we were privatized. We are now part of Bodycote Materials Testing.

Thank you for having me here. I'm pleased to be here. My talk will be mainly on what we did at Ortech, or Bodycote now, in the area of alternative fuels and in the area of transportation generally.

Why do we meet here? What are our interests and needs? I'll introduce you to Bodycote Ortech. And are there ways whereby we can be part of your team for alternative fuels?

Bodycote International Plc is based in the UK and we've got four major divisions: heat treatments, hot isostatic pressing, materials testing and coatings and Ortech Bodycote Materials Testing Canada Inc now comes under the materials testing division of Bodycote Plc. We have a number of labs here in Ontario, as well as in Quebec.

It's over \$1 billion in revenue, there are over 200 plants and labs in North America, Europe and the Middle East and it employs over 5,000 employees. We serve all major industrial sectors.

How did Bodycote International come to be? Four partners started a heat treatment company and from there on started acquiring a number of companies, and today they have over 200 plants in over 19 countries. Heat treatment, by the way, is by far the largest in Bodycote Plc.

Ortech still exists. That's our technology headquarters. We are involved in contract research and development work, product and process innovation, analysis and testing, problem-solving and technical consulting.

It's multi-tenant, over 175 employees—20 PhDs, 30 MScs and BScs and 40 technologists. We are ISO 9002

registered. Ortech, Galt and OTL are based in Ontario. Technitrol, Analex and Envirolab are based in Quebec.

When Bodycote acquired Ortech, they acquired the main business: materials, health sciences and engineering and transportation. I come under the engines and emissions department.

We have six engine anemometers: two of them are EPA transient emission test cells and four development/durability test cells. We are recognized by EPA and the California Air Resources Board to carry out emissions testing. The two transient test cells are fully transient, and we do certification work mainly for original engine manufacturers.

We have a combustion air system; therefore, the test cells are provided with combustion whether it's wintertime or summertime. Also, the tunnel, which will come to you in the next slide, is provided with combustion air.

We've got four development/durability test cells whereby we can do steady state emissions. They range from 300 horsepower to 600 horsepower. We have in-cylinder pressure measurement to measure cylinder pressures inside the combustion chamber, to measure cylinder pressure, heat release and mass fraction burned. All the test cells that we have are multi-fuel; that is, we can run any alternative fuel—LPG, CNG, ethanol, methanol, biodiesel and so on. We have fuel ratio meters to monitor air fuel ratio inside the engine.

The emissions facilities: again, we are EPA- and CARB-recognized with emissions too. The dilution tunnel is a 2000-FCM tunnel and we can measure FTP cycle emissions real time, total hydrocarbons, CO, NO_x and CO₂. So, second by second, we can measure the emissions coming out of the engine. Normally, the FTP cycle is 20 minutes long, so we run the transient cycle followed by a hot soak and then followed by the hot cycle. There's a cold cycle, a break of 20 minutes, which is called a hot soak, and then 20 minutes. We don't have to measure bag emissions. We measure non-methane hydrocarbon, we measure methane from the engine, we measure total hydrocarbons, and we can then subtract to measure non-methane hydrocarbons. We also measure particulates coming out of the engine. As you know, the particulates in the state of California are a carcinogen, toxic air contaminant, and we can measure that. We do meet EPA and CARB requirements, their procedures for doing emissions testing.

We have two other benches, which are raw emissions benches, to measure emissions, for example, catalyst in, catalyst out, so we can measure engine now, cat in, cat out. We also do off-road cycle emissions. EPA and CARB require that. We can measure aldehydes too, ketones. We can also measure hydrocarbon speciation. Whatever is coming out of the exhaust, we can measure what is the hydrocarbon coming out of the exhaust in speciations. There are about 10 to 15 hydrocarbon speciations that we can measure. Normally there are about 200 in a diesel engine. We also acquired an AVL smart sampler, which is devised for measuring particulates, mainly for off-road emissions.

This information is about our test cells. We've got six test cells. Five and six are fully transient test cells going up to 600 horsepower and one test cell goes to 9,000 RPM. Other test cells go from 300 horsepower to 600 horsepower. So in the area of automotive heavy-duty transportation, we can meet almost every engine requirement for emissions testing.

Further work that we've done at Ortech: the emissions calibration and development. The fuels, as I mentioned: there is mainly gasoline, ethanol, methanol, diesel, biodiesel, LPG, CNG. All that work has been done at Ortech.

Comprehensive data acquisition for performance, for emissions, for combustion and catalyst/filter efficiency.

Other projects we've done are diesel particulate trap systems. We work quite a lot in that area. Lean NO_x catalyst with ammonia and diesel fuel used as a reductant: this was a project sponsored by the Transportation Development Centre; that's the federal funding. We injected ammonia upstream of the catalyst to achieve NO_x reduction and we achieved over 90% NO_x reduction. In the second stage we used diesel fuel as a reductant and we injected upstream of the catalyst and we achieved over 20% to 30% NO_x reduction at steady state. Then we were in a transient cycle; we achieved about 20% NO_x reduction. So there is technology available to reduce NO_x emissions from vehicles.

We also did work on the Cummins L10 natural gas engine, which we developed at Ortech, and today the buses in Toronto are only with Cummins L10 natural gas engines. That engine was developed at Ortech with natural gas. We do emissions certification and calibration for both on-road and off-road engines. A few years ago we tested an aero engine at Ortech. It was a 600-horsepower aero engine. We did catalyst aging and efficiency testing. We had a project from California Air Resources Board—Natural Resources Canada was part of the team in there—and we tested a Cummins 5.9 LPG engine. We were given the task of doing emissions testing. We did exhaust hydrocarbon speciation. We sent the results to the California Air Resources Board, and from then on they have put in HD-10 as the fuel of choice in the state of California.

1650

We do high-pressure diesel injection gasoline pump tests. As well, we've been doing OEM 10-minute and 20-minute hot tests.

As you are aware, we developed a gaseous fuel injection, GFI, system at Ortech. We designed it, we developed it, and today GFI Inc in Kitchener is a company which employs over 150 staff.

We developed the natural gas GFI system, we developed a liquefied propane gas system and a CNG regulator for shared access. We did vehicle emissions certification testing at Ortech, but today we are out of that business because we do not develop vehicles here in Canada, so we couldn't find any work for that dynamometer, so we sold the dynamometer. But in the engines area, most of our work comes from the United States. We

currently do CNG and LPG emissions certification calibration development for our clients right now.

Other projects that we did were diesel particulate trap systems. We developed the first Ortech trap system, which we installed in a bus in New York City. Then we installed a Webasto trap system in New York City. Then for one year we developed the Deutz trap system and installed five trap systems in Denver, Colorado. We also developed the Webasto trap system. These are trap systems to trap diesel particulates that come out of a diesel engine. Today, for the 2000 cell requirement, EPA CARB has a new regulation of 0.01 particulates for 2007 engines, as well as 0.2 NO_x . So it's a challenge for engine manufacturers and catalyst manufacturers to meet that.

Another area that we do work on in transportation is vehicle dynamics. We have a 6-post turbo where you can shake a heavy-duty bus, one of its kind in the world, and that's quite a busy facility today. We also have a 4-post turbo, which is a climatic chamber, which can go from minus 40 degrees F to plus 180 degrees F. That's quite an investment that we have at Ortech, our Bodycote lab, and it's quite a busy chamber.

We have a multi-axis simulation table to simulate for the cab of a truck or any vehicle or anything of that sort. We can do that. We also do engineering, FE analysis, finite element analysis, for clients.

We have a solar testing lab which is part of Canmet, whereby we can simulate an Arizona-type environment. We did work for Saturn some years ago.

We have solar weathering equipment at Ortech. We obtained the capabilities of Ortech Corp, a worldwide network of testing laboratories and metal treatment plants. Ortech has transportation, engine and emissions facilities for doing development work and R&D work.

Thank you for your attention.

The Chair: We have about a minute and a half per caucus, starting with Dr Bountrogianni.

Mrs Bountrogianni: You know that the mandate of our committee is to report to the government on recommendations to look at and implement renewable energy sources. What are your recommendations or suggestions to our committee?

Mr Sumar: We are very strong in natural gas and propane here in Canada. As far as infrastructure is concerned, we are developing LPG infrastructure and natural gas. When you look at emissions compared to diesel, natural gas gives very low emissions in terms of NO_x and particulates especially. Therefore, if you're looking at sources of fuel, natural gas seems to be a choice of fuel. LPG gas is also a good fuel with low emissions. So it's natural gas or LPG, depending upon the economics, really.

Ms Churley: This was a very technical presentation, and I'm going to confess that in such a short time I don't fully understand all that you do, but it seems you have quite a variety of tasks involved in your company. So I just want to take a look at this later. I don't have any

particular questions at the time, but thank you for this presentation.

Mr Sumar: I have my business card. I gave it to Tonia, so if there are any question, you can give me a call.

Mr Gilchrist: Thank you, Mr Sumar, for your presentation. From the very outset of our hearings we were struck by the different numbers that were being quoted by proponents for different technologies, and I posed the question, whom can we trust? It's nice to know that here in Ontario we seem to have at least one commercial testing facility that has the wherewithal to perhaps assist in getting some of the answers in terms of the true benefits of some of the additives that may be the short-term solution, improving the quality of our gasoline now, whether it's ethanol or additives for diesel, and then I'm sure being part of the longer-term solution as well, with your expertise in natural gas.

To that extent, you mentioned some of the things you're doing with particulate traps. In the testing side of fuels, have you been involved at all in any initiatives to improve the existing quality, for lack of a better term, of gasoline and diesel fuel, I guess in both cases through oxygenation?

Mr Sumar: We do not touch the fuel area, in fact. Fuel companies develop their own fuel to meet the—for example, in diesel, they meet the cetane number and aromatics. Also, for Canada, as you mentioned, they're going to go to low-sulphur fuels here. But, no, we do not develop the fuels.

Mr Gilchrist: Sorry, forgive me if I wasn't clear in the question. It's not so much the development, but have you been involved at all in the testing of competitive claims being put forward by people looking to do different things to existing fuels? I got the sense from your presentation that that was a capability in your shop.

Mr Sumar: We do have the capability of testing different fuels. We did some work for a client many years ago whereby they wanted to use the engine oil from the heavy-duty vehicle and put it back into the engine. We did tests by blending engine oil, of 0.25%, 0.5% and 1%, back into the fuel. We did emission tests and we did particulate emissions and gaseous emissions. We found that with 0.25% there was no impact on emissions, whereas when we increased the amount of oil going back into the diesel fuel, there was an impact on particulates mainly. Gaseous stayed the same. So we are capable of testing various fuels. We test CARB fuels, we test EPA fuels, we test fuels of different sulphur levels. We did biodiesel work with different biodiesel blends of 20%, 30%, 50%. So yes, we do have the capability of doing that, but we do not go and change the fuel specifications in any way.

The Chair: There is a minute left in his presentation, but remember you're eating into the dinner hour, so you may have to meet with the wrath of other members.

Mr O'Toole: The low-sulphur diesel was said to be the future, legislatively, for diesel application. Do you test locomotive or jet emissions with respect to particulates or other NO_x/VOCs, carbons, whatever?

Mr Sumar: We have not tested jet fuels or locomotive fuels yet because the engine capacity over here is a dyno capacity up to 600 horsepower, and we don't have the capacity to test locomotives. But yes, we do fuel testing in terms of emissions, performance, durability. We do that.

The Chair: Thank you very much for coming forward. Time is up. We appreciate, as was mentioned earlier, the very technical presentation.

The committee now stands recessed until 6 o'clock.

The committee recessed from 1700 to 1800.

Report continues in volume B.

SELECT COMMITTEE ON ALTERNATIVE FUEL SOURCES

Chair / Président

Mr Doug Galt (Northumberland PC)

Vice-Chair / Vice-Présidente

Mrs Marie Bountrogianni (Hamilton Mountain L)

Mrs Marie Bountrogianni (Hamilton Mountain L)

Mr James J. Bradley (St Catharines L)

Ms Marilyn Churley (Toronto-Danforth ND)

Mr Doug Galt (Northumberland PC)

Mr Steve Gilchrist (Scarborough East / -Est PC)

Mr John Hastings (Etobicoke North / -Nord PC)

Mr John O'Toole (Durham PC)

Mr Jerry J. Ouellette (Oshawa PC)

Mr Ernie Parsons (Prince Edward-Hastings L)

Clerk / Greffière

Ms Tonia Grannum

Staff / Personnel

Mr Jerry Richmond, research officer

Research and Information Services

CONTENTS

Thursday 30 August 2001

Feel Good Cars Inc	S-163
Mr Gary Rewald	
Mr Marek Warunkiewicz	
FuelMaker Corp	S-166
Mr Mario Pirraglia	
GAIA Energy International Inc	S-169
Mr Greg Binions	
Mr Ross Blaine	
Dr Raymond Colledge	
Mr Carl Wintermeyer	
Wind Power Task Force	S-172
Mr David Boileau	
Ontario Waterpower Association	S-176
Mr Paul Norris	
Pollution Probe	S-179
Mr Ken Ogilvie	
Ontario Trucking Association	S-182
Mr Steve Laskowski	
Vision Quest Wind Electric Inc	S-189
Mr Jason Edworthy	
Econowood Heating Ltd	S-192
Mr Henry Rasmussen	
Upsala Forest Products Ltd	S-194
Mr Steven Lukinuk	
Mr Jim Vibert	
Hydrogenics Corp	S-196
Ms Jane Dalziel	
Ontario Natural Gas Association	S-199
Mr Bernard Jones	
Mr Brian Soutiere	
Resource Efficient Agricultural Production; Energy Probe	S-202
Mr Tom Adams	
Enviros RIS	S-204
Ms Maria Kelleher	
Enbridge	S-207
Ms Marion Fraser	
Clean Air Renewable Energy Coalition	S-210
Ms Helen Howes	
Mr Keith Stewart	
Super Blue Box Recycling Corp	S-212
Mr Matt Larmour	
Mr Gregory Vogt	
British Energy (Canada) Ltd	S-215
Mr Tony Morris	
Bodycote Materials Testing Canada Inc	S-218
Mr Mehboob Sumar	
Committee business	S-185