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Mardi 19 février 2002

Select committee on alternative fuel sources

Comité spécial des sources de carburants de remplacement

Chair: Doug Galt
Clerk: Tonia Grannum

Président : Doug Galt
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LEGISLATIVE ASSEMBLY OF ONTARIO

ASSEMBLÉE LÉGISLATIVE DE L'ONTARIO

SELECT COMMITTEE ON ALTERNATIVE FUEL SOURCES

COMITÉ SPÉCIAL DES SOURCES DE CARBURANTS DE REMPLACEMENT

Tuesday 19 February 2002

Mardi 19 février 2002

The committee met at 1004 in room 151.

MINISTRY OF THE ENVIRONMENT, DRIVE CLEAN OFFICE

The Chair (Mr Doug Galt): We'll call the select committee on alternative fuel sources to order.

Our first presenter is from the Ministry of the Environment, the Drive Clean office: Ed Gill, director, and Dave Petherick, consulting engineer. Thank you very much for coming forward. For the sake of Hansard, please state your names and positions. We have a total of 20 minutes for you. What you don't use in your presentation, we'll divide between the caucuses for questions.

Mr Ed Gill: Thank you, Dr Galt. Ed Gill, director of Ontario's Drive Clean, Ministry of the Environment.

Mr Dave Petherick: I'm Dave Petherick. I'm a consulting engineer to the Drive Clean office.

Mr Gill: We have a few slides in front of you. I'll quickly go through them. You can interrupt me if you like, or ask questions at any point in time.

Drive Clean is a mandatory vehicle inspection and maintenance program. It covers all of southern Ontario now. With the expansion of the program to phase 3, effective July 1 of this year, the Drive Clean program would cover about 5.5 million vehicles in Ontario. The primary purpose of the program is to identify vehicles that do not meet emissions standards, thereby repairing them and reducing smog-causing pollutants from vehicles. In 1999 and 2000, in the phase 1 area, Drive Clean has already reduced 11.5% of smog-causing vehicle emissions. These emissions are nitrogen oxide and volatile organic compounds. We've also reduced carbon monoxide by 15%. When the program is fully implemented, we will also reduce the greenhouse gas carbon dioxide by approximately 100,000 tonnes.

Drive Clean tests all vehicles, regardless of the fuel that powers them. There are some exemptions for Drive Clean. Vehicles that are less than three model-years old or over 20 model-years old are exempt from biennial testing, except for resale vehicles. For 1999, which is the latest model that we currently test, that testing began January 1 of this year. As I mentioned, vehicles are tested for three compounds: nitrogen oxides, carbon monoxide and hydrocarbons. All vehicles require that original emission control equipment installed by the manufacturer at the time of manufacture should remain on the vehicle.

I just want to talk a little bit about the repair cost limit. The way the current regulations are, there is a one-time $200 repair cost limit in the first two-year cycle of the program. So for the first test cycle, which is biennial, once every two years, motorists can use the repair cost limit to get a conditional pass. However, after the first cycle, the first two years, the repair cost limit is replaced by an ongoing $450 repair cost limit. It's important to mention that a number of motorists are not choosing the repair cost limit or a conditional pass. They choose to repair their vehicles regardless of the repair cost limit. The data we have indicates that approximately 4% of the vehicles that have been tested to date have chosen to go the conditional pass route.

In addition to Drive Clean, we have on-road enforcement through our smog patrol. Vehicles that are smoking excessively, or have missing or tampered-with emission control equipment, are subject to ticketing. After-market propane converted taxis have also been ticketed for missing or disconnected emission control equipment. The ticket for light-duty vehicles is $305, plus $75 for victim surcharge, to have a total ticket of $380. As I mentioned, failure rates are monitored regardless of the fuel, regardless of the emission control systems or kilometres travelled.

The data that we have shows that less than 0.5% of the vehicles that have been tested are alternate fuel vehicles. The total number of vehicles, as I mentioned, was over five million. Light-duty propane-powered vehicles are approximately 15,000. Light-duty natural-gas-powered vehicles are about 4,600.

Failure rates in Ontario, particularly with respect to alternate fuel vehicles, are in sync with failure rates that have been found in British Columbia, where the BC AirCare program began in 1992. As you will see from the graph, we have included both the Ontario data and the BC AirCare data. The natural gas vehicles have a marginally higher failure rate than gasoline vehicles. Propane vehicles have a significantly higher failure rate than gasoline vehicles. It's important to note that we have provided you with some statistics on kilometres travelled. Average kilometres travelled for a gasoline vehicle at the time of the test was 130,000 kilometres. For propane it's 300,000 kilometres, and for natural gas it's approximately 200,000 kilometres.

There are two types of alternate fuel vehicles that are on the market or being used by motorists. They are after-

market conversions, as well as original equipment manufacturers.

Originally, when the after-market conversions began, it wasn't until the late 1980s that emissions were a serious concern in their design. Newer conversion technology, however, is available that can reduce exhaust emissions. On the other hand, the original equipment manufactured alternative fuel vehicles, typically after 1995, employ sophisticated technology similar to gasoline vehicles.

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I want to briefly discuss possible causes of alternate-fuelled vehicle emission failures. It is also important to note that approximately 90% of the vehicles that are powered by propane or natural gas are actually after-market conversions. So there are very few original equipment manufactured vehicles being driven. Most of them are extremely high-mileage vehicles and are used for commercial or business purposes. Obviously, one of the reasons that people have purchased commercial after-market vehicles is economic.

It's also important to note that, because of the mileage and the business of the commercial nature of the usage, it is possible that owners of these vehicles are not performing all the necessary maintenance and repairs. It's also important to note that as far as technology goes, particularly for after-market propane vehicles, there is a tendency to have valve seat failure, which results in higher emissions and misfire.

Lack of accurate air-fuel ratio mixtures in after-market conversions prevents the catalytic converter and other emissions control equipment on the vehicle to perform properly. Some operators have tampered with emission control equipment and may have removed some equipment for whatever reason suits them. However, all of these vehicles are subject to on-road enforcement of the Ministry of the Environment through smog control. When after-market conversions are made at shops, it is possible that they are using equipment from vehicles that are retired. Used equipment is continuously being used in after-market conversions.

It is difficult to compare gasoline vehicles with alternate-fuelled vehicles, the reason being that the type of vehicle in the gasoline is fairly extensive, whereas for after-market conversions they only select particular makes and models, the age of the vehicle, the mileage travelled, the usage, business or personal use, and maintenance patterns.

It is also difficult in Drive Clean data to identify which of these vehicles are manufactured by the original equipment manufacturer and which of them are after-market conversions. The action we've taken to date is to require that all vehicles that, regardless of their usage, fail emissions standards need to be either fully or partially repaired to enable them to get the vehicle registration sticker. On-road enforcement looks for vehicles that are highly polluting as well as vehicles that have tampered pollution control equipment.

Drive Clean data are being analyzed continuously to ensure that we're being effective, and also to share it with various parties, as we have done with the taxi industry, upon request. But it's important to note, as I mentioned, that only a very few people are actually choosing a conditional pass. Most people want their vehicles fully repaired in order to get a full pass.

We will soon begin—actually, we've just started for 1999 and older-model vehicles—to test newer original equipment manufactured vehicles. There are very few on the market currently but, over time, we will gain more knowledge and more data on the alternate-fuelled vehicles manufactured by the original manufacturers.

Once we have a representative sample of the data from the original equipment manufacturers, we will conduct additional analyses and compare them to after-market vehicles and also to gasoline vehicles. It is important to note that with recent approval from cabinet, we are to explore partnerships with municipalities that are willing to partner with us and do annual testing of taxis and high-mileage commercial vehicles. That process has begun. It is on a voluntary basis for municipalities that wish to co-operate with us to conduct the annual testing of taxis. Currently, the testing is biennial, which is once every two years. Over time, we will also analyze emissions from after-market vehicles with respect to the OEM vehicles, particularly in the context of high mileage.

That is my presentation. I welcome any questions.

The Chair: Thanks very much. We have approximately three minutes for each caucus, starting with the official opposition.

Mr Ernie Parsons (Prince Edward-Hastings): This program continues to be not without controversy, and I say that based on media reports in credible trade magazines and credible newspapers, taking vehicles from one spot to another and going to 11 different garages, and it passes seven and fails four. We're seeing suggested tricks on how to get it to pass: drive it quickly on the highway and warm it up and bring it in and don't idle it and so forth.

That, to me, throws into question the accuracy of your numbers. I know that each time the media do this and they approach you, you say, "Well, there's an explanation for it." But I'm not yet convinced where the line falls between a good public relations gesture on the part of the government in a meaningful test. What is your defence to all the trade magazines that say there's a tremendous amount of inconsistency from one test to another?

Mr Gill: First, I'd like to point out that about a year and a half ago we did an opinion poll of people who went through the Drive Clean experience, both in phase 1 and phase 2. Over 91% of the public was satisfied with the Drive Clean experience. Also, in phases 1 and 2 we found overwhelming support for the program. Over 80% of the public that was surveyed supported the program and was satisfied with it.

In addition to that, we have an independent auditor, which is a partnership of several businesses that are specialists in this business. They conduct an independent audit of the Drive Clean program. They have categorically stated that of the about 37 programs that operate in

North America, Drive Clean is one of the best such programs.

I'd like to address your question about vehicles that have intermittent problems. As any technology, there are some vehicles that have intermittent problems—a valve is stuck or you have an EGR valve that's malfunctioning—and those are the borderline vehicles. In some instances, if the valve is functioning properly, it'll pass; if it's not functioning properly, it'll fail. These represent less than 1% of the vehicles that we have tested.

In addition to that, if a motorist has concerns about a test or the validity of a test at any location, we will offer a test at a government-approved facility. The equipment itself that is used at Drive Clean facilities and the automotive garages is completely tamper-proof. If you tamper with that equipment, the facility is locked out. In addition to all of that, we do overt and covert audits. We have our own ghost cars that we send around to Drive Clean facilities to ensure that the integrity of the program is maintained.

Mr Parsons: That didn't answer my question.

Mr Gill: I mentioned that there are vehicles that have intermittent problems.

Mr Parsons: I accept that, but I also know that's not what we're talking about. We're talking about a vehicle that a newspaper or trade magazine has had tested one hour apart, which has been prepared by extremely qualified mechanics, and it passes some and it doesn't pass one an hour later. I don't believe that's an intermittent problem; I think it is a reflection that there are too many variables to get a consistent result. That's my concern. That's what people are saying to me.

Mr Gill: We did hear a number of people, as you said, in the business. One of the things we've done for the wintertime, for example, is the treadmill, or the dyno, where the vehicle is driven at about 25 miles per hour. There is a time period that changes from summer to winter for warming up the vehicle, to get it to an operating temperature, to get the correct reading.

The Chair: Thank you very much, Mr Parsons. The reason we invited them to present was because of presentations made by taxi drivers who were using propane and natural gas and were dissatisfied with the performance of those vehicles and were concerned with the testing of those particular vehicles.

Mr Jerry J. Ouellette (Oshawa): First of all, with regard to your comments, Chair, the research I did following up on the propane testing was that the conversions found in the after-market were specifically—there are two ways to tune a vehicle: one is for emissions testing and one is for mileage. If you tune it for mileage, which most of the taxi people would tune it for in order to get the best possible efficiencies, you lack in the emissions testing. That's where they fail, according to the experts I met with who came in from a number of jurisdictions throughout North America, and I spoke with them on this particular issue. Those are the reasons they gave me.

However, Mr Parsons has opened a bit of a door that I would like to ask, as well. You mentioned, as relates to your presentation about resale vehicles, "after three years." Why are they not exempt within that three-year period, of a new vehicle, and also a resale that has been tested within six months?

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Mr Gill: There are two questions there. The first question is, why are we testing resale vehicles? There are exemptions for resale vehicles as well. Any vehicle that's the current or future model year is exempt from Drive Clean testing. So this year any vehicle that's 2002 or newer, if you can find one, will be exempt from resale.

The reason we've instituted this particular test requirement is for consumer protection primarily, so the owner of a used vehicle does not get stuck with expensive repairs. A number of times, especially for newer vehicles, vehicle owners are actually pleased if they find out there is a problem, because they can get it repaired under warranty.

Mr Ouellette: But that warranty is usually for five years.

Mr Gill: That's correct. That's a measure that's very consistent with other jurisdictions in North America. As I mentioned, there are approximately 37 such programs and our test requirements are extremely consistent with the rest of them.

The other question is about the validity of a pass certificate. We did listen to the public. This was an issue that caused a number of public complaints. Since January 1 of this year we have extended the validity of a pass certificate to 12 months.

The Chair: Does anyone have any questions related to the taxi operators and the reason that we invited them here?

Mr Steve Gilchrist (Scarborough East): I guess from the test results you've brought to us here, there are a number of questions. I certainly would not presume to ask you to make policy; that would put you in an awkward position. But from the test data it would appear that the failure rate is significantly higher for propane-powered vehicles, not just here but in British Columbia. As this committee wrestles with the need to put in place the most proactive and environmentally responsible strategies, what direction should we take in terms of support for alternative petrochemical products? Would it appear on the surface that propane is a bad investment, based on the failure rates you've experienced? Or are there any other extraneous issues that might explain why the test results have been so bad for propane?

Mr Gill: If I can point out, slide number 8 speaks to possible causes of alternative fuel vehicle emission failures. Also in the graph that we presented to you, we've identified average mileage of the vehicles. You can see there that the average mileage for propane vehicles is about 300,000 kilometres and the average mileage for natural gas is about 200,000 kilometres as compared to about 130,000 for gasoline vehicles. So that in itself is one factor that plays a role in failure rates. The

other is maintenance and repair. The primary reason we've instituted Drive Clean is to identify vehicles that do not meet emission standards regardless of the fuel type; they should be repaired or taken off the road. That's the purpose of Drive Clean.

The other issue that's extremely important is the technology of after-market conversions and the technology that's used by the original equipment manufacturers. The original manufacturers now use similar emission control technologies for gasoline as well as for alternative fuel vehicles.

Mr Gilchrist: But the question arises, then, if in fact, from the limited data we have before us here, one of the explanations might be that propane vehicles had an average of 300,000 kilometres, do you have data for vehicles that were gasoline- or natural-gas-powered that had 300,000 or more kilometres on them, and what were the failure rates for those technologies?

Mr Gill: It is rare for gasoline-powered vehicles to have mileage that high, but I didn't say it doesn't exist. That's an area that we'd like to research some more: comparing apples to apples and looking at vehicles that have similar mileage.

Mr Gilchrist: So you don't at this point have data on natural gas or gasoline vehicles sorted by kilometrage?

Mr Gill: The data exists. It's to mine that data and conduct the analysis. As I mentioned, there are only a few vehicles that probably can be identified with that high a mileage.

The other thing to note is that the mileage data that exists in our database is dependent on the inspector that does the testing. In an automotive repair shop, whatever is entered into the computer is entered by the inspector. So there are some verification and validity checks that are needed in the system.

The Chair: I did allow you to go a little over on the time but it was zeroing in on the issue and why you were invited, and that's why I allowed that. But you're just about to the 20 minutes in total. Thank you very much for coming forward. We appreciate your time.

Mr Gill: Thank you for inviting us.

Mr John Hastings (Etobicoke North): Could Mr Gill supply to legislative research the amount of money spent on this program since it was initiated in 1999?

The Chair: By the government?

Mr Hastings: Yes, and whether we have reached the minister's prescribed announcement of 22% reduction in smog or pollutants from when the program started.

The Chair: OK. We'll pass that on to research and look forward to the response.

Thank you for your presentation.

ONTARIO PETROLEUM INSTITUTE

The Chair: Our next presenter is Steve Fletcher, executive director, Ontario Petroleum Institute. If you don't mind, just state your name for the sake of Hansard. You have, in total, 20 minutes. What's left over from your presentation we'll divide up between the caucuses for questions and comments.

Mr Steve Fletcher: Good morning. I'm Steve Fletcher and I'm the executive director of the Ontario Petroleum Institute. When I saw the mandate of this committee I got quite excited because it talked about finding alternative sources of our existing fossil fuels, and because we import about 98% to 99% from Alberta, I thought what a great opportunity to talk about Ontario's production.

Who are we? I'm going to just go through the slide deck. We are a 375-member industry association representing the exploration, production and storage of crude oil and natural gas in the province and have been in existence since 1961. A historical note: the global industry started in Ontario in 1858 in Oil Springs and is actually still operating there.

With regard to the size of the current industry, in 2000 there were 1,100 onshore oil wells producing 1.5 million barrels of oil; that represents about 1% of the provincial requirements and has a value of $68 million. The cumulative production since 1863 has been 79 million barrels. Proven reserves of oil are approximately 12 million barrels. That's essentially if you do nothing else. If you don't drill another hole, if you don't do any more exploration or add any new technology, that's what you should extract from the ground. The potential reserves are in the neighbourhood of 232 million barrels. So we're about a third of the way there, and that's common for a very well-explored basin. I'll get back to the differences between proven and potential later on.

In terms of natural gas, in 2000 there were 1,200 onshore gas wells and 550 offshore natural gas wells, and that produced 15 billion cubic feet of natural gas, which represents about 1.6% of the provincial requirements, at a value of $102 million. Cumulative production since 1906 has been 1.1 trillion cubic feet. The proven reserves of natural gas, again, if you do nothing, are 380 billion cubic feet, and the potential reserves are 1.2 trillion cubic feet.

Storage is another part of the industry. There are 25 designated natural gas storage pools operating in Ontario and they have a total capacity of 237 billion cubic feet. That represents over 60% of Canada's total natural gas storage capacity. On a cold winter's day that storage meets 55% of Ontario's demand for natural gas. The pipelines coming from it aren't big enough to meet the demand, and that's where the gas is extracted from the storage. On a year-round basis, that's approximately 25% usage from storage.

The natural gas is stored in depleted oil and gas reservoirs. It's nature's best unit to hold on to these things. It's held on to it for millions of years. They reinject it and use it on demand, as required.

In 2000, over $10 million was paid in royalties to landowners in Ontario. In southwestern Ontario, it's freehold rights, so the landowners own the minerals beneath their properties, which is not like other provinces. It accounted for 1,300 direct jobs, representing one

in every 800 jobs in southwestern Ontario. You'll see that the oil and gas exploration and storage is basically south of a line between Sarnia and Niagara Falls. The average employment income for the sector is one of the highest in Ontario. They are very well-paying jobs.

Page 7 has a basic layout of where the pools are. The lake is essentially all natural gas. The western part of southwestern Ontario is virtually all natural gas. When you get into Lambton, Kent and Essex counties, it's oil and gas, and Lambton county is where virtually all of the storage is concentrated. There is a basin out of Hudson Bay. Research has been done up there. It was deemed, back in the 1970s and 1980s, not to be of economic value. It exists. There's probably one Tcf there, but it's in a very remote area and, using the technology at that point in time, not deemed to be economical, but it does exist.

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I'm going to take a little bit of a jump on slide 8 and look at sort of energy development over time, a very rough graph of the energy dependency of our society. As different modifiers and different drivers have come into play, our energy demand has dramatically increased and is getting to the point where, 2000 and beyond, we don't know what that curve looks like, if it keeps going at that same rate, or are there going to be modifiers and drivers that are going to bend that curve down? Again, these are snapshots, they're predictions, and this is an industry that notoriously has a very wide variety of forecasts happening.

In terms of the projected world demand over time, this is a study done back in 1997 as to where they think the energy is going to come from. If you buy the argument that indeed world energy is going to continue to expand, the fossil fuels over the next 40 to 60 years are going to peak and start to be of less importance. It's these alternate fuels that are the bulk of what this committee is talking about. That's where people are saying they have to step up to meet that energy demand. Again, it's a snapshot and it doesn't necessarily reflect the market forces as varying price points increase and decrease.

Chart number 10 is another way to look at the gas potential. The top line is EIA demand, which is the Energy Information Administration. Basically, it's US demand for Canadian gas. It has a steady, ever-increasing outlook at the start of 2001, but you'll see a little downturn, that they revise their demand numbers. As the price for gas spiked, there's a lot of switching going on to other fuels. As the economy turned, the demand for gas also lessened. So at one point, where you were predicting that perhaps supply would exceed demand, as demand drops off, we see pricing dropping off.

To put into perspective some of the new gas that they say is coming on-line, at the very bottom is the Scotia Shelf, the Sable Island projects, and the Mackenzie Delta. Their assumption is that they are going to actually build the pipeline and bring that gas down. It has an effect; it doesn't have a dramatic effect. But again, this is a snapshot. If you do nothing—don't invest, don't let the market react to things—this is a possible scenario that could pan out. It hasn't historically done that. The industry and the buyers have reacted accordingly.

I'm going to flip again. Item 11 is looking at New York. New York has an industrial and energy production and energy consumption profile very similar to Ontario. I would urge this committee to look at New York and what they are doing. The New York State Energy Research and Development Authority was created in 1975 as a reaction to the oil crisis of the 1970s. Unlike other institutions which assumed that the energy crisis was over, NYSERDA stuck around and began investing in research. They derive their basic research revenues from an assessment on the electricity and gas within the state, and they have an annual budget of about $125 million.

NYSERDA's principal goal is to help all New York state utility customers solve their energy and environmental problems, while developing new innovative products and services that can be manufactured or commercialized by New York state firms. I've given you the Web address. They have very much an R&D focus and they use a blend of technologies, heavy on the conservation, and it tends to act as a catalyst. It doesn't necessarily do anything, but it makes sure the appropriate people are looking at the issues that are at hand.

One of the aspects to the NYSERDA program is that there is an indigenous natural gas and petroleum program. If you take the words from their documents and substitute "Ontario" for "New York," you'll have a very similar profile. New York has been a natural gas and petroleum producer since the mid-1800s. Today, indigenous natural gas production in New York accounts for about 2% of natural gas demand, which is very similar to Ontario. Though a small percentage, natural gas production could have a major economic impact on localities. By increasing exploration and production of natural gas in New York, the state's energy dollars stay here, rather than flowing to the southern states and Canada.

NYSERDA's role is to work with New York's industry to reduce the risk associated with using new technologies for exploration and drilling and to identify new resources. NYSERDA now collaborates with over 50 companies to improve their chances of developing and producing new resources in New York in an environmentally considerate fashion. They have an annual budget of about $1 million, so it's a small fraction of the overall operating budget of NYSERDA, but important nonetheless. Again, they take their role as a partner. They're not looking at, "How can I, in New York, develop a unique technology?" It's, "What are other jurisdictions doing, either federally or in other countries, and how do we apply that to the rocks, to the basins, to the reservoirs that exist in New York?"

Chart number 13 is the impact of technology. It's to add some information to the snapshots that were provided earlier. This is a study that looked at production and said, "Let's look at this as a total reservoir management. Let's apply some different theories and some dollars and some research." The dark grey is a projected decline. If you do nothing, the reserve in the reservoirs

will eventually decline. But in this study they looked at how they can maximize the withdrawal of the resources. You'll see it has a very significant impact on the resource. That's an example what NYSERDA-like organizations can do: how can we take what we know is going to be a declining resource and make sure we extract everything from the ground?

I have a series of recommendations, starting on page 14.

We recommend that a new agency patterned after NYSERDA be created to manage Ontario's energy policy development, implementation and reporting, presumably under the current Ministry of Energy. But because this is an economic issue as well as an environmental issue, we think there needs to be some bringing of minds together on the overall problem. The OEB, because of their quasi-judicial orientation, I don't believe to be the proper research- and market-oriented agency to do that.

Part of that energy policy should recognize the advantages of indigenous production. The economic value of the resource itself—and we have to remember here that this is primary production; it's up there with fishing, lumber. The more our society produces those raw materials, the richer we all are. They're high-value jobs that we'd love to keep in Ontario. We need to keep the infrastructure in Ontario, and that includes the people. You can't come back 10 or 15 years later and say, "Maybe we should crank this up," because if the people and the businesses who support the producers aren't there, it's a global environment. If they're in Michigan or New York, it's hard to bring them back to Ontario.

There are security-of-supply issues. The more you produce locally, the more likely that you can produce that for the province's requirements.

There's a link between storage and exploration. Because storage happens in depleted oil and gas reservoirs, if you stop exploring, if you stop producing in Ontario, you're essentially limiting the storage capabilities that you'll have in the future.

The last set of recommendations are somewhat interrelated. We highly encourage conservation of energy from the consumer perspective, but also from the producer perspective: reducing the waste and making sure that you're extracting all of the resources you can in an environmentally sustainable manner; making sure that producers and consumers receive accurate market price signals so they're not hiding behind a regulatory framework, so they understand what the full cost will be; and letting the market know what the pace scale, form and path of development should be. But it doesn't mean that government doesn't have a role, and that's why the NYSERDA model, in our mind, works: they are there to encourage, via R&D dollars, via partnering with industry, by partnering with academia, and to make sure the proper investments in research are happening.

One of the big areas of research in the US and in western Canada is CO_2 sequestration. As you reinject natural gas, it makes sense, from a reservoir capacity, to reinject CO_2. Ontario's got a lot of CO_2 and it's got a lot of reservoirs, so reinject it. People are doing primary research into something like that.

Also, ensure that the tax and fiscal regimes are competitive. It's a very capital-intensive business and it's a very risky business and a very cyclical business. Anything that can happen to encourage proper investment is a good thing.

1040

In parting, I have a quote from Hubert's Peak: The Impending World Oil Shortage, which is a book that came out last year: "A fossil is the remains of an ancient organism. A fossil fuel is stored solar energy by organisms in ancient times. A major lesson: the source of the world's oil accumulated over hundreds of millions of years; most of the world's oil has been discovered in my lifetime .... in a sense, fossil fuels are a one-time gift that lifted us up from subsistence agriculture and eventually should lead us to a future based on renewable resources."

The Chair: Thank you very much. We've got approximately a minute and a half per caucus, beginning with Mr Ouellette.

Mr Ouellette: Thanks very much for your presentation. According to Maureen Kempston Darkes—Mr O'Toole and I were at a meeting with Maureen—in order for corporations like General Motors to produce far-less-polluting vehicles, she specifically stated that they need better fuels coming in. The sulphur content was one of the keys things. What would the average sulphur content be of the fuels produced in Ontario?

Mr Fletcher: It's very sweet, "sweet" meaning having a very low sulphur content. I know there's a presentation later from CPPI and they might be able to better answer that. The crude itself is considered sweet. It does not require any sulphur processing.

Mr Ouellette: That's what is produced in Ontario, that's coming out?

Mr Fletcher: Correct.

Mr Ouellette: There is also a cost in order to reduce that sulphur content for the fuels that come into Ontario, because a lot of it that's coming in is not sweet crude. What would the average cost be per litre, say, to reduce the PPM to—I think they're looking at 50 parts per million.

Mr Fletcher: I can't answer that. Our industry essentially supplies the crude to the downstream market and it's at the downstream refineries that they would have that sort of analysis.

Mr Ouellette: OK. Mr Hastings had a question.

The Chair: We have a little time. Go ahead, Mr Hastings.

Mr Hastings: Mr Fletcher, convince me better than your presentation that we need another energy authority. California has about a dozen of them, an energy commission, a public utilities commission, an office of policy research and security, the California Environmental Protection Agency and about six others. What will this one do?

Mr Fletcher: I don't personally care if there's another agency created. I think somebody needs to be looking at

energy policy. Whether it's the Ministry of Energy broadening its activity, that's fine with me. I agree, another agency isn't necessarily the answer. It's looking at a sort of like agency and what they do as opposed to a new agency.

The Chair: To the official opposition, Mr Parsons.

Mr Parsons: Interesting presentation. You seem to give tables that give a pretty fair reflection of future demand and future resources. Here's the question, though, that I get from the constituents: when the gasoline retailer is faced with costs and is forced reluctantly to increase the cost per litre by 10 or 50 cents or something overnight, and then miraculously all the other retailers had that same increase, it makes it amazing to me that not only did the gasoline go up overnight but natural gas, a separate product, also went up.

My constituents say to me, "We'd like to do natural gas, but if we look at last winter, the prices went absolutely crazy. They're now going down, so the costs don't in fact reflect the cost of production and the cost of transmission." The price of natural gas to them reflected what the producer could get out of them. People spent money last winter to convert from natural gas in their house, which is a cleaner fuel, to oil, and now the natural gas prices are down. What do we have to do to give some stability to the consumer to say, "If you want to invest in a natural-gas-powered car or you want your house to be natural gas, we can give you some sense"—I mean, we've got projections here of what the demand will be—"of what the cost will be next month or next year or five years from now"?

Mr Fletcher: Traditionally, natural gas and crude prices haven't been linked at all. Crude is a global product. It's set at the global level. Natural gas is a product based on North American supply issues.

Mr Parsons: Right.

Mr Fletcher: Last year was the great convergence of the three—electricity, natural gas and crude—all escalating but not necessarily because of any direct reason to one another.

I bought natural gas for my house at a rate that I could afford and locked in. I said, "I can afford this. I'm not in the business of being a commodity trader." That's the approach that I took.

Mr Parsons: I mean for vehicles, though; for somebody who's going to spend the extra dollars for a natural-gas vehicle.

The Chair: Thank you very much. We've run out of our time. We're up at the 20 minutes. Thanks for coming forward and presenting. It's much appreciated.

CANADIAN PETROLEUM PRODUCTS INSTITUTE

The Chair: Our next presenter is Arunas Pleckaitis. I hope I'm pronouncing that correctly—

Clerk of the Committee (Ms Tonia Grannum): No, no. Skip down.

The Chair: Down one. Bob Clapp, vice-president, Ontario division, Canadian Petroleum Products Institute. My apologies. I was rushing the morning. Welcome.

Mr Bob Clapp: I know you're late.

The Chair: It's our fault, not your fault. Please state your name for the sake of Hansard, Mr Clapp, and also your associate who's with you. There's a total of 20 minutes, as I'm sure you're familiar with. Whatever you don't use in your presentation we'll divide between the caucuses equally.

Mr Clapp: Thank you very much for giving CPPI the opportunity to be with you this morning. My name is Bob Clapp and I'm vice-president of the Canadian Petroleum Products Institute here in Toronto. My colleagues with me today are Gerry Ertel on my left. He's with Shell from Calgary. Operating my slides will be Gilles Morel. He's from Imperial Oil here in Toronto.

I realize the mandate of this committee is very broad and really covers the whole spectrum of energy. We're going to focus today on the transportation sectors. I think we can bring some value added comments.

The next chart—very quickly I've met with most of you before—shows the member companies of CPPI. In Ontario, we represent all of the refiners and our members sell about 85% of the retail gasoline. In Ontario, we have 40% of the refining capacity of Canada.

We look at ourselves as an infrastructure industry, very heavily involved in the transportation sector. In fact, we supply over 98% of the transportation fuels in Canada and in this province. Our members are very heavily involved in the development of fuels of the future, such as clean diesel, clean gasoline and hydrogen, working very closely with the various fuel manufacturers. In addition, we're also into the "alternate" fuel business as we supply propane, natural gas and ethanol blends.

In Ontario, we have a very unique relationship with the petrochemical sector, particularly in the Sarnia area, where we provide feedstocks to all of the petrochemical plants and move streams back and forth to get the maximum value out of a hydrocarbon barrel. And we operate an efficient supply network throughout the province of Ontario to supply petroleum products to our customers.

According to reports released by the Ministry of the Environment, air quality in Ontario has been steadily improving over the past 25 years with respect to most measured parameters. A significant reduction in transportation emissions since 1975 can take credit for much of the improved air quality we enjoy today, but there is still a lot of room for improvement.

Today, there are two dominant policy issues that we're all grappling with. Smog is something that we deal with in Ontario, and particularly in southern Ontario, regularly and it is an immediate challenge for us. In the longer term, we will have to deal with the issue of global climate change. These issues are very different and can have very different solutions. For example, as we'll see later, current fuel and engine technology changes are going to address smog issues but not greenhouse gas and climate change.

When you look at the public, the public really is on the perimeter of these. We're gradually getting public engagement, but that's an area that we really have to work on, to get the public engaged and realizing that they have a role to play in dealing with this.

There's a lot of rhetoric out there today on climate change as we head into a very critical time period and try to understand the full implications of ratification. President Bush came out recently with his plan and I think in Canada, and particularly in Ontario, we need to understand the implications of that and how that may affect Ontario and Canada. But the policy today has been focusing on smog and I'd like to deal with that as we look ahead.

What is being done with respect to smog? Transportation emission programs are all aimed at reducing emissions that lead to smog formation. We're looking at reductions in NO_x, SO_x, volatile organics and particulate matter. Regulatory programs are presently underway with both the auto manufacturers and the fuel suppliers that will lead to very significant reductions in tailpipe emissions.

In 2001, low-emission vehicles were introduced, and we will see in 2004 the next level of vehicles, called tier 2 vehicles, along with low-sulphur gasolines. These will result in very significant reductions. In 2004, diesel vehicle NO_x emissions will be reduced by 50%, and in 2007 we're going to see new diesel engines and low-sulphur diesel that will result in further reductions. In order to achieve these reductions, the Ontario refiners will be investing over $1 billion over the next four years.

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Now let's look at the results. The results are indeed impressive. All emissions are down by 70% to 90% from today's levels. The key smog precursors—and those are NO_x, nitrogen oxides, particulate matter and sulphur oxides—are down by 87% to 90%. These results reflect the emissions of all on-road emissions from motorcycles up to and including 18-wheelers. These modelled emission forecasts were performed under contract for Environment Canada and represent the most sophisticated modelling and forecast tools available in Canada today. What is most impressive is that all emissions are being reduced at the same time. In cars, a reduction in volatile organics and carbon monoxide usually tends to increase NO_x, while in trucks a decrease in NO_x emissions tends to increase particulate matter. But that is not the case with the technology that's being produced. They're all going down.

I'd like to add a couple of charts that really enhance this, because this is very important to understand where we're heading with what we know today. This chart shows the assumptions that are built into it. I'm not going into all of the details. If we want to, I can provide that. The underpinning here is that both the number of vehicles and the vehicle kilometres travelled show a steady increase, just as they have over the past 50 years. It reflects not only the population growth but also how important transportation is to economic growth and how important mobility is to the citizens of Ontario, both for work and pleasure. So we're seeing growth in the vehicles. This reflects the vehicle turnover, something that in the past a lot of the models have not shown. This is trying to represent what we know going forward.

I've included one chart here and it's for NO_x. NO_x, from our perspective, is one of the toughest pollutants to deal with, and I think most of the industry would say that. In all cases we looked at, we see a significant decline in emissions. The tier 2 gasoline vehicles will reduce NO_x emissions by about 70% in cars and light-duty trucks. Heavy-duty diesel truck emissions standards were changed in the late 1990s. They're going to be reduced again in 2004. In 2007 we will see a further change when trucks will be equipped with exhaust after-treatment devices similar to the catalytic converters that we now have on cars. We will see also the low-sulphur diesel going down to 15 parts per million at that time.

An interesting policy consideration here is how one would accelerate the decrease, in fact move that curve over to the left. The way to do that is to accelerate the fleet turnover, and policies aimed at enhanced vehicle scrappage moving quicker would move that curve to the left and achieve these kinds of reductions much more quickly. That's something to consider.

What are the short-term implications of this technology that we now see in place? With the evidence shown on the previous three charts, we can expect to see, with the new vehicles and fuels that are now on their way, very significant reductions in smog precursors. While at one time cars and trucks were responsible for over half of the urban area emissions, it is expected to drop to less than 10% over the next 20 years.

Let me say a few words about alternative fuels. As I have noted here, they are not the panacea that many would lead you to believe. Today, propane and compressed natural gas vehicles are about 99% of this very small market. The small market for alternate fuels is about 2% of the total. Today there are about 225,000 vehicles in Canada that operate on these two fuels. As I've just said, the conventional fuel and engine combination is significantly raising the bar for alternate fuels to compete against, and they are having difficulty, as we go forward, participating in the market. I think while I just came in you were talking about Drive Clean programs. Our information says that based on BC AirCare and our own Drive Clean program, 95% of the propane and CNG vehicles fail their emissions tests at a rate two to three times higher than those of equivalent gasoline and diesel engines.

A couple of comments about supply: propane supply is rather limited. It's not a major product for many petroleum operations and has been focused largely on heating in remote areas. Natural gas, on the other hand, is in relatively plentiful supply. But in a broad energy picture, the most effective use is for stationary sources to back out coal or heavy fuel oil, and there are still plenty of those opportunities around. The replacement of coal with compressed natural gas for power generation is 10

to 16 times more effective at reducing greenhouse gas emissions than replacing gasoline with compressed natural gas.

A few more comments on alternate fuels: we do not see the demand for them growing. In fact, we believe the demand has been declining and we as fuel suppliers have been seeing it. Why is the demand low? There are a number of factors, but most have to do with real or perceived customer perceptions such as reliability, safety, performance, model selection, convenience, cost/payback, used car value and range, and they tend to cost $3,000 to $8,000 more per vehicle.

There are some markets where alternate-fuelled vehicles can be suitable, like fleets, but it doesn't always work that way. I have a quote from the manager of vehicle engineering for the TTC: "Natural gas buses are high-maintenance, high-cost and offer no environmental advantage over some clean-emission technologies that are rapidly emerging." As we all know, alternate fuels are now tax-exempt and require these tax exemptions to operate in the marketplace, and many of them cannot be commercially acceptable without these.

Let me move to climate change and look at some of the considerations here. We've seen that the outlook for smog precursors is very positive. They're going to go down very substantially over the next 10 to 15 years. The same cannot be said for global climate change from the perspective of transportation. It's a kind of good-news, bad-news story. The good news: in the production of the fuels, refiners have dramatically reduced the energy that goes into fuel production since 1990. The reduction averages between 1.5% to 2% per year, and as a consequence the greenhouse gas emissions from refiners in 2000 were less than they were in 1990. However, the vehicle fleet that we have on the road today is the least efficient in the past 20 years. Without changes to fuel efficiency or kilometres travelled, greenhouse gas emissions from the transportation sector will increase between 30% to 40% from 1990 to 2010.

Let me show that with a chart that I think shows that very well. The vehicle manufacturers have done an excellent job in responding to the market demand for the larger, more versatile and safer vehicles and for lower-emission vehicles, as shown on the left. Emissions have come down dramatically, and I would say largely due to the changes in the engines, complemented by the changes in the fuels.

The middle chart shows fuel economy. In the mid-1980s the fuel economy of cars and trucks increased about 50%, from 13 miles per gallon to 27 miles per gallon. Since that time there has been basically no change at all in the corporate average fuel economy for cars or trucks. What has changed is the fleet mix, and that's shown on the right chart. There has been a very significant shift from cars to minivans, pickups and SUVs, and all of those are classed as light trucks. To look at the effect on fuel economy, if I go back to the middle chart again, we see that the average has been decreasing for about the last three or four years. So it's really fleet mix that has done it.

What can we do about that? We must move fuel efficiency higher on the priority list. The current speculation is that with technologies we are aware of today, we can achieve a 50% improvement in the miles per gallon. We think we can go from 27 miles per gallon for cars and 20 miles per gallon for trucks up to a fleet average of about 40 with what we know today. This will come about through a number of things that include lighter-weight vehicles, better gearboxes and higher-tech tires, and there are about eight or 10 other technologies that we know of today that the automakers are putting in and will lead us there.

1100

Another route to follow is the increased use of diesel engines in the light-duty truck sector to take advantage of the diesel engine's inherent greater efficiency over the gasoline engine. This is certainly taking place in Europe, and I think you're well aware of that. In fact, there are many more passenger cars with diesel engines in Europe than there are in North America.

A growing number of experts in the field of transportation technology see a three-step path forward. First, we see significant improvements in the existing internal combustion engine, like direct injection. The next step takes us to increased penetration of hybrid vehicles into the market with improved battery technology. The third step would be a transition to the liquid fuel cell that would eventually give way to the hydrogen-powered fuel cell. What is encouraging is that most of this can take place by consumer choice, and there will be plenty of choice in the marketplace and a free market economy to drive which one will be the winner.

This chart shows what you might expect from these new technologies that are coming forward. All of these technologies you can see offer very significant energy improvements, ranging from 15% to as high as possibly 100%. Direct-injection vehicles will still require sophisticated exhaust after-treatment to reduce NO_x emissions. Low-sulphur gasoline will be required by this technology and the technology is being put in place as we speak to achieve that.

Hybrids like the Toyota Prius and the Honda Insight will be joined by others like SUV hybrids. Technology is evolving, and regenerative braking systems can now effectively capture the energy used in braking. Improved battery efficiency is a critical component of the success, and the prices are eventually going to come down for these cars.

The expectation is that fuel cells will first develop as a stationary source of power, particularly in remote locations, and then evolve to a transportation power source. Natural Resources Canada is leading a group of Canadian vehicle, engine and fuel manufacturers to focus on the development of the Canadian fuel cell. CPPI is a full participant in the process, looking at technologies, the distribution system and the like.

What will the fuel choices be? We feel that established alternate fuels like compressed natural gas and propane will likely be limited to niche fleet applications in urban

markets, as I described earlier. Their advantage is rapidly disappearing as far as emission reductions are concerned and the whole technology is really bypassing them.

Vehicle manufacturers and fuel producers are jointly working on engine fuel combinations and screening the many alternatives that they face to focus on where they think the industries will eventually go. The evolving transportation technologies will determine what engine and fuel combination best meets the consumer's needs and the environmental goals. It will be difficult for those outside the system really to pick the ultimate winners. The market has shown in the past that it is the most efficient mechanism to deal with such choices.

Let me sum up with a few conclusions and observations and hopefully leave a few minutes for questions.

With the regulated targets set for the production of cleaner vehicles and fuels, the focus on policy-makers should perhaps shift to look at other areas like enhanced inspection and maintenance programs to ensure that the fleet on the road is operating at optimum performance.

We should also perhaps look at how to accelerate vehicle fleet turnover to take advantage of the new vehicles that are coming on to the market with much lower emissions than those that are on the road today. Industry in North America—and, I would add, in Europe—is spending literally billions of dollars to develop technologies that will ultimately replace the internal combustion engine. The industry I represent is a full partner in all of those processes. We believe that clean petroleum fuels will continue to be the dominant energy source for transportation for the foreseeable future and that the conventional alternate fuels we tend to talk about are not a panacea to what we face.

We're going to see choice. I think we're already seeing a number of choices because there are hybrids on the market today. Those choices are going to expand as we go on in time and evolve to a whole new system of transportation in the next 15 to 20 years.

I have one more minute. I'm going to throw up one chart. It's almost like a gee-whiz chart, but it's kind of an interesting piece of work that was done by Shell International. I borrowed it and I thank Gerry and his organization for this.

They looked at various energy supply scenarios between now and 2060. These scenarios are premised on very different policy considerations on a variety of these in economic environments. The study looked back over 140 years to try to understand how energy supply has evolved and to see what we can learn and apply to future energy supply forecasts. These scenarios are not unlike the scenarios that are developed by other energy producers and governments. In all cases, there must be an evolution away from energy sources that have a finite supply. The transition from wood to coal to oil is now history. Renewables are set to take the stage in the next 50 years. Oil did not displace coal overnight. It was almost 40 years, between 1860 and 1920, until the full potential of oil resources was recognized and tapped into, and then it grew from there. Renewables are likely to take a similar time frame in order to evolve.

For these reasons, a number of the oil companies that I represent, and other energy companies, are investing heavily in renewables like hydrogen, wind power, solar and other energy options. These sources, although not presently economically feasible, will be as we go into the future and technology develops to put these into the marketplace.

Thank you for allowing us the time. I'm certainly open for any questions and I will direct the technical ones.

The Chair: Unfortunately, we're at 20 minutes, 30 seconds. Thank you very much for your presentation. We appreciate your coming forward and the input into our select committee.

Mr James J. Bradley (St Catharines): We all had good questions, too.

The Chair: Absolutely.

Mr Clapp: I'm glad I got to the one about gasoline pricing because John and I dealt with that for an extended period of time.

The Chair: We'll save the grilling that might have occurred.

ENBRIDGE

The Chair: The next presentation is from Enbridge, Arunas Pleckaitis, vice-president of Enbridge Consumers Gas. Please come forward, and any others with you in your delegation may join you. Please state your names for the sake of Hansard. You have a total of 20 minutes. Following your presentation, if there's time left over, we'll divide it between the two caucuses.

Mr Arunas Pleckaitis: My name is Arunas Pleckaitis. I'm the vice-president of opportunity and development with Consumers Gas and I also serve as president of Enbridge Gas New Brunswick, a new utility that we started up in New Brunswick about two years ago. With me today is Chris Gates, our manager of sustainable energy within Consumers Gas.

The first thing I'd like to do is commend the committee for its interim report and also to reiterate Enbridge's commitment and support of the public policy-making process that is being used to develop the committee's recommendations. I also want to thank the committee for providing us with this opportunity to share further thoughts with you with respect to our views on sustainable energy development.

This slide summarizes the scope of Enbridge's business operations around the world. As many of you know, we have extensive energy investments in Ontario, elsewhere in Canada, the United States, South America and now in Europe. While I don't intend to go through the slide in detail, it's important for the select committee to know that we are a leader in energy delivery in North America and we have a long-term strategic commitment to be a major provider of energy services in the province of Ontario.

Enbridge is also a very strong supporter of environmental initiatives. This slide provides a sample of some of the local environmental partnerships that we continue

to be involved in. On a national basis, we have been recognized for our leadership in the climate change voluntary challenge and registry program and also for our extensive demand-side management programs. In fact, we are very proudly the recipient of the 2001 Financial Times Global Energy Award for best environmental practice.

Enbridge's commitment to the environment goes beyond traditional natural gas applications and technologies. Through our pathfinder strategy, we have already committed over $45 million in next-generation fuel technologies. This includes an alliance with Global Thermoelectric designed to fund the technological development and commercialization of natural-gas-powered fuel cells. It also includes a strategic partnership with Suncor Energy to create SunBridge, a major Saskatchewan wind farm project. This project will increase Canada's inventory of power from wind by approximately 10%.

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Last August we spoke to this committee about the important role of natural gas and the promising potential of distributed energy in Ontario's energy future. Because natural gas and distributed energy can provide immediate as well as long-term environmental benefits, we strongly encourage this committee to endorse both. In our view, natural gas and distributed energy in combination can help us successfully bridge to a renewable energy future.

As a reminder, by "distributed energy" we mean electricity or other useful products such as heating or cooling that can be generated near or in close proximity to the end user's site. It's a very different approach from our traditional use of low-efficiency, large-scale central power plants where electricity must travel a significant distance to the end user. Distributed energy technologies and applications range from medium-sized reciprocating engines and gas turbines used for cogeneration facilities in hospitals and industrial plants to small-scale fuel cells designed for individual homes.

Let me summarize the principal advantages of distributed energy. First of all are the significant environmental benefits. Distributed energy is able to meet a customer's heating, cooling and electrical power needs while increasing overall energy efficiency. This in turn reduces overall energy consumption and lowers emissions levels.

Distributed energy also has direct economic benefits that include: (1) creating a more stable and competitive wholesale market for electricity by increasing the number of market participants; (2) improving power reliability and quality by adding diversity of supply; and (3) creating substantial new spin-off opportunities in research and development, manufacturing and in the service industries. Some distributed energy technologies, like fuel cells, are still being developed for commercialization, but others are available today. Let me provide you with some examples of what is currently going on in the distributed energy marketplace.

Markham District Energy in Ontario recently installed a 3.3-megawatt cogeneration and district heating and cooling system in a new business park. The system generates its electrical output from a natural gas reciprocating engine and that electricity is fed directly into the Markham Hydro grid. Combined cooling, heating and power units such as were used in this project can obtain efficiency ratings of 80% or more because energy is generated close to the user and not lost in transportation. This efficiency compares to traditional large-scale central plants with efficiencies in the 35% to 40% range.

In addition to the Enbridge investments in fuel cells, Enbridge Consumers Gas is also supporting multiple demonstration projects, and I've included on this slide a list of some of those projects that we're involved in. Let me just identify two examples specifically: a 550-kilowatt natural gas reciprocating cogeneration unit that provides electrical power and space heating for a greenhouse in St Catharines; we also helped pilot a 250-kilowatt reciprocating engine generator that augments electrical power and heating in a public swimming pool facility in Etobicoke.

The number of these demonstration projects is growing, and as they continue we continue to have an increasing number of participants that we work with in all sectors in our efforts to advance the development and introduction of distributed energy. But we are not alone. Elsewhere in the world a tremendous number of distributed energy projects are underway. For example, new microturbine technologies being introduced in the United States and the UK offer many benefits, including low emissions, low operating costs, simple and quiet operation, and relatively easy integration with other building systems. As a result of this technology, in New York state a plastics manufacturer needing high-quality power has installed 25 microturbines that generate a combined 750 kilowatts. This plan now operates completely off the grid, and one benefit of this approach is that if one microturbine goes down, the others can continue to operate without interrupting service.

In another example, NiSource, a major utility in the United States, has installed and successfully demonstrated the application of microturbines in combination with rooftop heating, ventilating and air conditioning units to provide full-time electricity, heating and cooling for a major drugstore chain. As you can see, other jurisdictions are also looking to distributed energy as part of their energy future.

Our presentation to the committee in August touched on some things that are needed to promote and accelerate distributed energy in Ontario. These included supportive market rules and regulations, a fair and flexible emissions reduction trading system, and the creation of demonstration projects. I'm here to build on that presentation and, in so doing, respond to the interim report's request for specific recommendations.

In the rest of my presentation I'll focus on three areas related to distributed energy where government action is required. These three recommendations are: (1) asking this committee to help ensure that a level playing field for emissions and emissions trading is established,

(2) ensuring that natural gas is part of Ontario's energy solution, and (3) ensuring a straightforward grid interconnection regime.

Let's first look at emissions reduction trading and the need for a fair and level playing field. The Ontario emissions trading regulation that I have identified here, and supporting code, came into effect in December 2001. Enbridge supports the intent of the regulation. However, in order to establish a level playing field, all emitters should do their fair share to reduce emissions. We do not believe the emissions caps or allowances identified in that regulation are aggressive enough to ensure compliance with the 1991 Canada-US Air Quality Agreement or the acid rain strategy endorsed by federal, provincial and territorial governments in 1998. To address this issue, we recommend that this regulation be amended to accelerate electricity sector emissions reductions.

Second, we also recommend prohibiting any electricity sector emitter from acquiring emissions credits from uncapped sectors. In other words, allowances should only come from within the capped electricity sector itself.

These changes would accomplish four things: (1) they would reward emitters that do not exceed allowances, (2) they would force those in the electricity power sector to aggressively reduce emissions, (3) they would send the right price signals to the marketplace and (4) they would help achieve the broader environmental and air quality improvements needed.

We respectfully recommend that this committee request that the province's emissions trading regulations be amended to remove these barriers to distributed energy and other renewable forms of energy.

Our second recommendation is that your final report clearly recognize and endorse natural gas as part of the solution. As this slide shows, natural gas can provide significant immediate gains today in terms of emission reductions and improved air quality compared to other widely available energy sources. This slide shows a graph comparing natural gas and coal-fired generation. You can see that it states that NO_X and SO_X reductions using natural gas are in the 80% to 90% range, and CO_2 reduction is in the 50% to 60% range. As a result, natural gas should be viewed as an ideal fuel not only today but also into the foreseeable future.

In addition to its environmental attributes, natural gas is again, as this slide shows, very cost-efficient when compared to alternative fuels. This slide shows a comparison for a residential customer, and you can see that compared to natural gas, electricity is 130% more expensive and oil is about 23% more expensive today.

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Finally, with respect to natural gas, there are significant domestic reserves of natural gas that will be available to support the needs into the foreseeable future. PIRA Energy Group forecasts that North American natural gas supplies are expected to grow more than 20% over the next 10 years. Furthermore, there are ample pipeline transportation capacity corridors and pipeline facilities available to supply the Ontario marketplace.

Our final recommendation is that we need a system in place that makes it possible for smaller distributed generation units to cost-effectively connect to the electrical grid. It is important to note that this is not just a physical interconnection issue. While interconnection guidelines currently exist, more guidance is required. Furthermore, many municipal electric utilities are not prepared for distributed energy or generation connection requests. Some do not have standard procedures established, and many do not have the resources available to develop their own procedures and standards. The government must support the MEUs with further guidance and specific direction on implementation. A clear, straightforward, standard process, along with a procedural policy for accessing the grid, is key to opening the marketplace to the benefits of distributed energy. Uncertainty and red tape will make it more difficult for distributed energy successfully to become a part of the Ontario energy future.

Continuing with this recommendation, MEUs must have uniform, descriptive technical standards for the interconnection of all sizes and types of distributed energy technologies. Furthermore, these standards must be integrated with other North American efforts. Specific codes must be established to provide clear guidance on procedures to ensure that requests from generator connections are processed quickly and fairly for all stakeholders: customers, retailers, distributors, transmitters and generators alike. And fees for interconnection must be standardized to fairly reflect system costs and system benefits. Furthermore, because the current regulatory environment provides little incentive to the electrical utilities to encourage distributed energy from taking hold, it is imperative that a standard policy for net metering be established that would allow for the open buying and selling of power through the grid.

Finally, with respect to this specific recommendation, there must be a mechanism to resolve issues related to both regulation and standards. At Enbridge Consumers Gas we have found the Ontario Energy Board to be an effective forum for resolving these issues.

In closing, I would like to say that this committee has a unique opportunity to promote distributed energy and its associated environmental and financial benefits, and to help establish Ontario as a North American leader in this area. By working to ensure that our key three recommendations are in place, the provincial government can make significant headway in supporting the development of environmentally friendly energy sources in Ontario.

Thank you for your attention. I'd be glad to answer any questions in the time remaining.

The Chair: We're down to approximately a minute and a half. I'll give that to the official opposition on this round and match that up for the government side on another time.

Mr Bradley: There are a hundred questions one could ask in that short period of time, but I'm going to be very specific. You recommend closing the coal-fired plants and presumably replacing them with gas-fired electrical

generating stations. When you are doing so on a plant such as the Lakeview Generating Station, what is the advantage of completely putting in new equipment to serve natural gas as opposed to simply converting the equipment that is in the existing plant at the present time?

Mr Pleckaitis: Converting it to a more efficient technology; for example, putting in scrubbers?

Mr Bradley: Yes.

Mr Pleckaitis: First of all, I didn't make, and I don't think my presentation was intended to make, a specific recommendation that the coal plants be converted. What I did was point out that there are clearly environmental advantages to burning natural gas versus coal in plants such as the existing plants.

Mr Bradley: But there are some who would like to use the old equipment, say, in the Lakeview Generating Station, as opposed to putting in all new equipment; in other words, do it on the cheap, as usual. There are certain people who want to do it on the cheap. What would be the advantage of putting all new equipment in rather than using the old boilers and stuff that are already in the Lakeview plant for coal purposes?

Mr Pleckaitis: I can't comment on the specific economics of completely retrofitting with new equipment existing coal-fired plants with natural gas as compared to taking the existing coal-fired equipment and putting scrubbers on or other enhancements on to clean up the emissions.

My personal view is that at the end of the day it's the emissions and the cost of the emissions that come out of those stacks that should be the important criteria that are measured. How it is done from a government policy perspective I think should be somewhat irrelevant if it can be done in one means or another for an equal cost.

The specific thrust of my presentation is I believe at some point in time those existing power plants will be cleaned up. It's a question of when. The specific thrust of my recommendation is to point out again to this committee the opportunity that is presented by a brand new form of technology and application, and that's distributed energy. We believe that having a much broader sector of our economy involved in generating and producing their own electricity and their own heating at their point of use is a much more efficient and effective way to address the sustainable energy issue that we are dealing with in this province, and that's the key thrust. If converting a power plant along the way makes economic sense and is in the cards for this province, we will support that and we will do everything possible to do that at the same time.

The Chair: Thank you very much for your presentation. We appreciate you coming forward.

Mr John O'Toole (Durham): Mr Chair, if I may, through you to the clerk, ask Enbridge to submit future gas prices or their projections or forecasts in terms of natural gas prices.

The Chair: Certainly.

Mr O'Toole: That's the whole equation for the future prices.

The Chair: That request will be coming from the clerk.

Thank you very much for coming forward. We appreciate your presentation.

Mr Pleckaitis: Thank you, Mr Chairman and committee. We will be leaving behind some additional material of interconnection issues that the committee may find beneficial as they're reviewing their report.

The Chair: Thank you.

LLOYD ALGIE

The Chair: Our next presenter is Lloyd Algie. Thank you for coming forward. Please, for the sake of Hansard, state your name. We look forward to your presentation. As an individual, you have a total of 10 minutes to present. Anything left over from when you present we'll divide between the caucuses for questions.

Mr Lloyd Algie: I'm retired, so I'm not here to sell anything. I'm just here to talk about what I call load management in systems that exist in all hydro utility systems across Canada. I have spoken in every one of these across Canada when I was in business.

If I could get somebody to put this on top of the screen, just to show you where the loads are and where they were calculated by Hydro about 20 years ago.

I feel very old being here today because I worked on a new invention for Mr Mashinger, who worked for the firm that installed the heating and plumbing in this building. That was when he was 70 years old and I was 24. Now it's reversed; I'm over 70 years old.

What I want to talk to you about today is the idea that I show in this article that's already been passed out. This was installed in 1982 at the corner of Jarvis and Wellesley. I'm holding this brochure right here. In case any of you want it, I have extra copies. This building—we couldn't get thermal storage. I don't know if you understand what thermal storage is. We make big steel tanks, store energy at 250 to 280 degrees under 50 pounds of pressure and use a heat exchanger. We did the Westin Harbour Castle hotel downtown like this. We did 20 other systems in downtown Toronto. We did 85 coast to coast in Canada. I started up most of them.

But in this case we couldn't get any thermal storage, except that we could utilize the idea of electric boilers that are already in the building. The code in Ontario, ASME, says that you don't have to operate 130 water for all your plumbing fixtures all over the building. You can alternate by making tandem boiler systems like on this one shot here with the three-way valve and a flat-plate heat exchanger. We increase the temperature of the water from 130 up to 190 and we triple the BTUs in the storage side of the capacity. By doing that, we could then go into off-demand. Now, you all understand off-demand meters because if you're in business you have a meter for your electricity and you have an off-demand meter which tells you what you did in the last 30 days.

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By utilizing this idea, we save $20,000 a year by having the demand concept on the clocks that would then through the week—most apartment houses in Canada

work in the same manner in that they have a peak hour in the morning and a peak hour at night. But on Saturdays and Sundays the people have a separate peak area around 11 to 2 o'clock when they do all their clothes washing and dishwashing in some cases. That sort of thing peaks on Saturday and Sunday, so you have to have that peak vary on those two days. By doing this, we take the building off demand. In some cases, demand costs could operate anywhere back in those days from $80 to $150 a kilowatt demand by the utility.

Here we're showing the graph that Hydro—and I worked with Ontario Hydro on this. They were trying to fill the valley time, was the concept. In England and in France there is no valley time. We had people sit in on our meetings. I was the original director for Canada for three years with the American Society of Heating, Refrigerating and Air Conditioning Engineers, which puts out the big engineering manuals for all consulting engineers for North America. What we found out was that they just have what they call topping off, and it's a little flat. What we wanted to try to do was get that same idea here. As you can see, by 1997 we were trying to go for 12,300 megawatts in the valley time. Last year, if you heard the news, in the summertime we hit 25,000 megawatts on Ontario at the peak. So you can see we're way ahead. We're up to 2007 already in the original scheme of things.

Also, when I was doing this, I volunteered to work with Walter Chick of the Ministry of Energy of the province and with BOMA, Building Owners and Managers Association. We took them from an infancy group of fellows, 25 in the city of Toronto, and we trained them in Honeywell to understand heating and air conditioning products and how they interface with each other. By doing this, we saved in five years $25 million worth of energy, just by good housekeeping and by utilizing some of these concepts and ideas.

As you can see here, the Plaza 100 building at Jarvis and Wellesley, we tripled the source of the BTUs by increasing the hot water storage temperature. Putting a through-way valve with the flat-plate heat exchanger, we still have the same temperature of water going through the building, through the 314 apartments. By doing this, we saved roughly in the very first year $19,000 or $20,000. The cost was one-year payback. There was a meeting here about three years ago with the group, and I went to see the lady who runs this for Cadillac-Fairview. She said, "No, everything's still the same. We took a 640-kilowatt electric element out of one of the boilers and put a flat-plate heat exchanger. I still have that as a spare." That was 20 years ago.

If every utility in large cities could utilize this concept, this is where you could save. You don't save kilowatt hours, but you rearrange it so it doesn't come on the peak of the building. We save the owner that money and therefore you're doing a service to the people who own the building. What we're trying to do is fill that valley time that you see up there at the top one right now by doing this. Therefore, I think that's all I need to say on that one.

The other one: I happened to teach for CIDA down in the Caribbean for the first application of basic refrigeration, and at the same time it came to me that these are energy islands to sustain the planet.

I'm showing a concept here, very low-cost, $400 to $450 per house. You could do this for your cottage if you want to test it out. You take two-inch black plastic pipe and put it on the south side of your roof. You put in a 12-volt DC bilge pump and a control and then, when it hits 140 degrees, you fill up that brick quadrant there with cement blocks with a rubber liner. We use a little solar idea from that which heats up the two-inch black pipe, believe it or not. If you want to test it, put a 10-foot piece on your roof sometime and see how hot it gets. We just run the bilge pump with the little solar panel and this will store hot water for small residences.

We use it in ships in Canada. If any of you have been to Newfoundland, you get the ship coming back from Port aux Basques to North Sydney and you see another big truck getting hosed down on the water. We supplied all the thermal storage for that ship, which takes the 160-degree water and hoses down that 18-wheeler, because they have potato plate in Newfoundland but they don't have it in PEI. So therefore, when the truck comes ashore in North Sydney, it can't have any germs on it in the way of potato problems. So that's what they utilize that for on that one.

I also happen to live in Belleville now. I've been retired there for nine years. I notice there are three turnstiles of systems making energy, and since we have a very warm spring, the water still runs over those and still generates electricity. So I'm suggesting that rather than having the two different hydro systems that might come about on May 1, who gets the energy off the English River and off the Trent River from this point of view? I'm saying that with this concept of thermal storage, we could heat, off peak, the cities of Trenton, Frankford and Belleville just from those three turbines that are always turning. Instead of putting it into a grid, which nobody knows yet who is going to own in the end, let's supply the people who live on the Trent River with this. I'm showing that concept.

Or you could use windmills. I happened to be called in to size up the arc for PEI but I wasn't successful as far as the price was concerned. But the same thing could be done with wind. You can't store the sun or electricity, but you can store the energy that both produce. This is what we're trying to get at here to make our energy last longer.

As I say, we also did another study for the ministry of the Don Jail, and this is the breakdown if anybody wants to look at it. We did this back in 1988, and it showed that we could save roughly $253,000 in energy by not having to use the steam from the hospital just north of it, and in that case by going on natural gas for all your domestic hot water.

Also, what's happened in the last few years is that we've all sized our buildings for smoking. We always did this in ash rain and any other people who had—now that you've reduced the smoking, all our fans are oversized in

those large buildings. I used to tell the Wal-Mart store, "You're going to get sickness in the first 60 days when you open up your new store." He said, "How did you know all the people were checking out?" I said, "Because you've got outgassing of all the stuff. Your chipboards on your counters and all those things are outgassing and people can't work in that atmosphere." You've got to have the ventilation open a little higher at that time of the year, try to do it, hopefully, in September or October.

But the thing is, if you can control this—and we do this in Terminal 3. All the fans are controlled by carbon dioxide. We all breathe out carbon dioxide. That's what came into Terminal 3 at Pearson. All the fans are controlled by the amount of air you breathe in and the number of humans who are in that building breathing out CO_2. So it's all controlled in that vein.

We can do this with fans by looking over older buildings, reducing the fan capacity, because there is no more smoking in there, and that way you save, again, more energy.

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The Chair: I hate to interrupt but the time is up.

Mr Algie: That's OK. I'm finished.

The Chair: An excellent presentation. Do you want to take 30 seconds just to round out?

Mr Algie: No. I've talked about off-peak. Oh, yes, we did Nova Scotia Light and Power, which was a space heating concept, and we saved 2,000 kilowatts right off the peak in their building in downtown Halifax. So that was one of the other buildings that was a retrofit. We've done it with heat pump systems. When you do it with heat pumps, you get 70-degree water circulating the building. Now you can heat and cool with 70-degree water, you don't need any insulation, and you can really save a lot of money by utilizing a water-to-air heat pump versus the other types of systems in a system with the thermal storage.

The Chair: Thank you very much for your thoughts and for coming forward. One of the big interests of the committee is energy conservation and how to deal with that, and you've certainly brought some interesting thoughts forward.

BURKHARD WEGNER

The Chair: Our next presenter is Burkhard Wegner. You have a total of 10 minutes for your presentation. What is left over we'll divide between the caucuses for questions. For the sake of Hansard, please state your name, and the time is yours.

Mr Burkhard Wegner: My name is Burkhard Wegner and I'd just like to thank you for the opportunity to make this presentation.

First, I'd like to say I've had the opportunity to go through a few of the Hansard minutes from past meetings and take a quick look at the interim report, and I'd like to congratulate this committee and all the individuals, companies, government agencies and organizations that have come forward to invest in a cleaner future for Ontario.

I trust I gave each presentation equal consideration, but I want to mention that I do not represent a company here and ask that you focus your attention on the merits of my topic. Unfortunately for you, that means I'm not a professional speaker and I'm probably a little bit nervous today.

My background is as an IT consultant. About seven months ago I read an article on the Internet as to how you can drive your car for free. This led me on a long journey of discovery and environmental awareness and eventually brought me here before you today.

I know you've heard from a wide variety of presenters about a wide variety of solutions. Since the allotted time is kind of short and you've got a lot of the information already, I'm just going to breeze through this presentation at a very quick pace and try to leave a few minutes at the end to clarify or answer any questions.

I believe the biggest reason for this committee's existence is the fact that we're all becoming increasingly aware that we cannot continue with our current fossil fuel activities and still be healthy enough to enjoy life. We cannot continue. The economics, health hazards and global environmental effects associated with pulling fossil fuels out of the ground, burning them and putting the emissions into the atmosphere are all well documented.

Having researched many solutions and read some of the previous presentations, I don't mean to knock or promote any particular technology presented so far. I do think this committee has its work cut out for it, as there are certainly some very good benefits, but also some very real drawbacks to most of the solutions proposed. For example, it's still difficult to heat your entire home solely on solar panels, you can't install an adequate windmill on every rooftop in Toronto and other urban locations, and a number of the other solutions still rely on electricity or fossil fuels.

I think there is also a problem with the public's perception of the cost of energy. On the one hand, myself included, most people complain about the cost of energy, be it electricity, natural gas or gasoline, which mysteriously goes up five cents a litre every Friday. On the other hand, I think a lot of us have no real reference point as to the true value of that energy or how convenient these energy forms are.

To illustrate this point, let's take a look at an Olympic athlete who is able to run a four-minute mile. Most of us would not be able to expend or create energy at that rate, and even that same athlete could not continue at that rate for a fifth minute. But for the purposes of this illustration, let's assume that a human being could expend energy at that rate given a 40-hour workweek. If we connect that human being or have that human being running on a treadmill connected to a generator, with zero losses, and we took that electricity and sold it at current market rates, there would be an annual income for that athlete of $150. If we factor in that bit of education with the environ-

mental and related health costs of fossil fuels, I think people will have a different view of the energy they consume.

Like many others, I believe there is not one single solution to the damage we're doing to the environment. I think it will take education in conjunction with incorporating a wide variety of solutions, each being the lesser of two evils when compared to fossil fuels.

At this time I would just like to repeat the mandate of this committee: to investigate, report and recommend ways of supporting the development and application of environmentally friendly, sustainable alternatives to existing fossil fuel sources. With that goal in mind, I would like to present to you my version of the miracle solution, and that is straight vegetable oil, also known as SVO. Based on efforts and research by myself, but primarily by my colleagues Dan Nagora and David Miskolczi, I would like to describe to you how this fuel is an environmentally friendly, sustainable and easily applicable alternative to fossil fuel.

Our proposal describes a solution that can be implemented almost immediately without changing consumer patterns. Although based on similar consumer practices, we propose to close the carbon cycle and recycle the effluents. I would like to submit that consumers can run their automobiles, generate electricity and create thermal energy to heat their buildings all on SVO. As you've heard already, when oilseeds are pressed, they produce roughly one third oil and two thirds high-protein meal. The meal is used for feed for livestock, and the effluents, manure, can be returned to the fields through the next crop. When SVO is used as a fuel, when they are consumed, the effluents can also be returned and recycled by the next crop. It is very important to note that this is a very real-time, user-pay cycle, by which I mean there are no deferred capital or environmental costs like disposing of radioactive material. So SVO would then be a renewable alternative fuel source.

As most of you know already, in 1900, Rudolf Diesel unveiled his engine, which was designed to run on peanut oil. There are currently several automobiles with diesel engines around the world that run on SVO. These are mainly based on a dual-fuel system, which we believe we have found a way around. We have also identified some furnaces that can be modified to burn SVO for thermal energy production. One of my IT clients has a greenhouse and has already expressed interest in the possibility of testing some of these furnaces in one of their locations.

Another very effective concept is cogeneration, which I believe was introduced by Dr Charles Rhodes of the Atomic Energy Corp. I think it was mentioned earlier today.

Due to time constraints, I'll just summarize by saying that this system realizes three times the potential energy of the fuel versus production of electrical energy alone. I think that answers one of the questions brought up earlier today about the benefit of cogeneration.

The next logical step for us would be to develop a cogeneration facility based on SVO and co-locate them with large energy consumers like MDUs—multi-dwelling units—universities, hospitals or greenhouses. The electricity produced would be consumed on site and the balance fed into the grid. The hosts of these systems would use the thermal energy produced. Not only would this replace reliance on fossil-fuel-based heating and domestic hot water, but also coal-fired electrical generation facilities, resulting in double the environmental impact.

If I may, I'd like to take you back to the farm illustration one more time. The crops can be grown by a farmer, who can modify his tractor to run on SVO. The seeds are brought to a mill by trucks that can be made to run on SVO. The oil is extracted by equipment, either powered by SVO or electrically from an SVO generator. The refined oil, SVO fuel, is delivered to the consumer, again by trucks that run on SVO. Nowhere in this system do you have to introduce electricity from coal-fired power generation stations or fossil fuels into the process. If at any point during transit, storage or production an accident occurs resulting in a spill, the effects would be manageable as SVO is biodegradable and non-toxic.

I'll leave you to think about the following facts that have already been heard before this committee: the benefits to the farming community of SVO; the benefits of SVO to the economy—not only will you be introducing a new market sector, but the annual import of 850,000 tonnes of soybean meal can be reduced; the reduction of fossil-fuel reliance with renewable chemical energy sources; the need for subsidies for corporations making large capital investments in equipment and processes that benefit the environment and reduce fossil fuel reliance; the development of a safe, renewable, environmentally friendly chemical fuel source. Also, we support continued education for responsible use of energy and creating a fair playing field with respect to the upfront costs of using real-time, user-pay renewable energy sources versus the higher environmental impact fossil fuel alternatives.

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The Chair: Thanks very much. We have about a minute and a half left. I'll go to the government side on this occasion. With the short time, who would like to question or respond? Mr Hastings.

Mr Hastings: How are we going to get the capital to get your SVO approach going?

Mr Wegner: In terms of automobiles, which I don't see as the biggest impact, there is already a $1,000 rebate for alternative fuel based systems, and that $1,000 would offset the cost of modifying these vehicles. There have been lots of recommendations to implement cogeneration facilities. With the cost of electricity going up, if you take a cogeneration system to produce heat you almost get electricity for free. That's how the equation works out. So if you go to a building owner—an MDU owner or a hospital—and say, "You're already spending X amount of dollars, be it $100,000 a year for heat. Now you can put in this equipment and get electricity for free." Those

costs would offset the capital cost of implementing the equipment.

Mr Hastings: Have you approached any municipalities, universities, colleges or hospitals? Some of them are always saying to us that they need more money to operate in a whole set of areas. I'm wondering if you found any entrepreneurial souls in that sector.

Mr Wegner: So far, the only people who are kind of sitting ringside waiting for the next step—I have the used vegetable oil source supplied from coast to coast from Rothsay, a division of Maple Leaf Foods, which I believe has been mentioned to this committee before, and I have the greenhouse interested in taking a look at experimenting with heating one of their greenhouses with it. I have a meeting that I'm trying to establish with the mayor of Hamilton, and I've mentioned it to one of the largest real estate companies coast to coast in Canada—I think it's number two or number three. We're going to be talking about it shortly—I believe next week—to discuss the merits of looking at a pilot project.

The Chair: Thank you very much. I appreciate your presentation, your thoughts and your demonstration.

CANADIAN INSTITUTE FOR ENVIRONMENTAL LAW AND POLICY

The Chair: The next presentation is Christine Elwell, senior policy and legal analyst with the Canadian Institute for Environmental Law and Policy. Please come forward.

Ms Christine Elwell: Thank you, Mr Chair. I'm here with my colleagues Gerry Scott, climate change director for the David Suzuki Foundation; Greg Allen, with Energy Action Council of Toronto; and Ralph Torrie, of Torrie Smith Associates, leading Canadian expert on energy, energy efficiency and reduction technologies, as well as software. We have a full crowd.

The Chair: You have every microphone filled. There is a total of 20 minutes set aside for you. What you don't use in your presentation we'll divide equally between the caucuses.

Ms Elwell: We would like to keep time for questions. We just came from a press conference where we released a study that we're presenting to you called Green Power Opportunities for Ontario.

In this study we crunch the numbers to show that we could close the coal plants in Ontario with a combination of renewable energy and energy efficiency. In crunching those numbers, however, we recognize that the price for electricity is very important and sensitive for green power. Wind producers are telling us they need about 10 cents per kilowatt hour, and yet when we look at the lay of the land right now, we see price caps and we see subsidies to traditional fuels. Frankly, the renewables can't compete in this atmosphere. So we entreat you: we're looking for an entrepreneurial level playing field so that renewables can actually compete.

We show a combination of energy efficiency of about 20,000 gigawatt hours: about 15,000 gigawatt hours with wind and about 5,000 with hydro and some biogas, which I'm hoping Greg Allen can speak to from a technical capacity standpoint.

The problem, though, is there are multiple barriers, I'm sure you've heard, to entry for these new technologies. For example, we've got transmission rates for export at $1 per megawatt hour. Yet if you're wheeling power within the province it's $4.85. This is a regulatory barrier to green power. We're looking at historic subsidies to coal and nuclear, insurance waivers, these sort of things. Yet the green power industry, which we support, doesn't have these advantages. So we come to you and say we've got the technical capacity but we've got some price barriers and we need the RPS, the renewable portfolio standard, we need demand-side management programs blessed by the Ontario Energy Board, as they've done in the gas sector. We're hearing that the board needs clear political signals. Your committee has got the mandate to speak for Ontario and about our needs for conservation, security of supply and moving into green technologies.

Frankly, we do these green power trade shows every year with IPPSO and we're really finding a lot of interest. But what I'm hearing from industry, large and small, is that they can't buy a turbine in Ontario. They have to import this technology. With our low Canadian dollar, it's killing them. They can't offer green power at a decent price, not only because of historic and current subsidies, but also because we don't have the manufacturing base. There is an emerging $500-billion global market out there for emission reduction technologies, which I'm hoping Gerry Scott from David Suzuki can put in context for us. Ontario is going to miss the boat in these emerging markets, in these emerging technologies, unless there's a political signal of support for these industries. Why do we need it? Frankly, coal, because of its low price, will dominate in the new open markets. We need some levelling-of-the-playing-field instruments out there so that we can compete, so that we can move Ontario into a green energy economy and build our manufacturing base so that we can take advantage of these opportunities.

I won't go on. You have a full panel of expertise here. Let me introduce first Ralph Torrie, Torrie Smith Associates, a phenomenal ecological economist who crunched our energy efficiency numbers.

Mr Ralph Torrie: Good morning, everyone. Time is really short and I was trying to think about how best to use it. I thought that one of the interesting things about the previous two and, to a certain extent, the previous three presentations that struck me as a member of the audience was the entrepreneurial excitement that you could feel underneath the presentations and the technical content of the presentations that you were hearing. It doesn't surprise me because this is quite characteristic of a very large and very important trend that we're seeing in all of the western economies now, which is the development of a whole range of new ways of doing things and new technologies that use not only electricity—that's what we're talking about here today—but all environ-

mental resources much more efficiently than has been the case in the past. We talk about labour productivity all the time and we talk about capital productivity. If you think about energy productivity, and specifically about electricity productivity, there's something quite interesting that comes to the surface. This is the one point or the one argument or finding that I really wanted to drill home today.

I've been testifying at committees like this one now since 1978 and I remember being before Donald MacDonald's committee at one point in the 1980s and making the case that the economy was no longer growing as quickly as the demand for energy, that that was a bandwagon you'd want to be on. Because the more you can improve the energy productivity of your economy, the more output of value that you can get for every barrel of oil and for every kilowatt hour, it seemed clear to me, the stronger your economy is going to be. But the electricity lobby, if I can call it that, at the time—and you may remember this, Mr Bradley—argued that might be true of energy in general but it's not really so true of electricity. It was true in the 1980s that electricity continued to grow at a faster pace than fuels like oil and gas.

I don't know if it's quick and easy to turn this machine on. If it is, there's a set of four quick pictures that I wanted to show that makes this point. I can see we're running into time problems, right?

The Chair: Unfortunately, we have to know ahead of time to have it set up ready to go.

Ms Elwell: It's in the study; you'll find it there.

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Mr Torrie: It's in the study, and it's a simple exercise that we did. We took a look at the demand for electricity in Ontario in 1990 and we took a look at the dollars of output of the Ontario economy in 1990 and we basically divided the dollars of output by the kilowatt hours and got a thing we call electricity productivity; and when it goes up that's a good thing. Then we went forward to 1999 and we multiplied the 1999 output of the Ontario economy by that 1990 ratio just to see how much higher the demand for electricity in this province would have been in 1999 if it had not been for this whole universe of things that are going on that are causing the amount of electricity that we need to produce a dollar of output in this province to go down. What we discovered was that the real demand for electricity in 1999 was about 150,000 gigawatt hours altogether. If it hadn't been for the improvements in energy efficiency in the 1990s it would have been 180,000. So we've had, if you like to think of it this way, 30,000 gigawatt hours. Essentially, it would have required doubling the existing output of our coal-fired power plants, if we had had to provide that electricity instead of getting it in the form of a more electricity-efficient economy. So there is already a trend that is gathering steam.

That amount of electricity is more than all of the new gas, coal, oil and nuclear added together and doubled in the 1990s. That's how big this is. Yet it's happening in the face of the types of market barriers that Christine has been talking about; it's happening without really being an organized industry, and in this province it's about to have to continue on, if we're not careful, without any kind of policy support.

We're at a juncture, obviously, right now in the electricity sector in this province. For all of the arguments for and against privatization and regulation, it is going to be and is becoming a fact in the province, and it seems to me one of the things that we can lose, if we're not careful, is the ability to encourage development and entrepreneurism and growth in those areas which are clearly the economic winners of the next few decades. This is surely one of them. You saw a little taste of it in the last couple of presentations. This is where we want to be; this is what we have to encourage. I guess that's why I was so happy to come and support the arguments that are being made here today.

This is pretty small potatoes we're left with. We've come all the way from Ontario Hydro to please could we at least have some guaranteed support for investment in the demand side, and please may we at least have some fair conditions for the green power industry before this thing goes completely chaotic on us over the next couple of years. I don't think that you can overemphasize the potential importance, and not only to our environment. We started this analysis because we were concerned that we have to get improved electricity productivity if we're going to have any hope of achieving our environmental objectives, including both our air quality and our greenhouse gas objectives. But what we discovered in the course of doing the work was that not only is this the key to getting these environmental objectives; this future of greatly expanded investment in energy efficiency and renewables is also the economic future that we want. This is the one you want to be with. The future that comes with continuing the way we used to do things, the future that comes with global warming, believe me, that is the economy you do not want, not the one with solar panels and better-insulated buildings and more efficient cars. That's nothing to be afraid of compared to what's coming if we don't do this.

I think we've probably used our collective time. We get enthusiastic about these things because we care, but there's some very solid research underneath this, and I would encourage you to take a look at what we've done, and have your own staff verify it, and you'll see just how important a contribution to the Ontario economy these types of initiatives are now, and must continue to be if we're going to be competitive in the future global marketplace.

Ms Elwell: Thank you very much. Greg Allen, Energy Action Council of Toronto, who gave us insights into biogas matters.

Mr Greg Allen: Among a variety of projects that I've been involved with, I work in sustainable energy, have all my life, and more recently, looking at larger-scale enterprises in the city of Toronto, I've been involved with the deep-lake water cooling proposition, an engineer

in Toronto who devised the notion that because the bottom of the lake is cold year-round, it could provide the cooling. I added to that proposition the use of potable water being brought onshore at the Toronto Island filtration plant, and heat exchanged to cool the downtown core, and that project is under construction.

The gas proposition is as a result of an emergent problem across our province in terms of the disposition of our solid waste. The majority of the solid waste from our municipalities is organic and can be converted to energy. The prospect of doing so by incineration or other combustion technologies has met with very little public support. On the other hand, the production of methane from anaerobic digestion of the material offers a very high economic attractiveness and a high acceptance by the public for doing so.

The project I'm currently working on for the city of Toronto and for which I have done two studies under the waste diversion office for the province of Ontario consists of the feasibility of converting at this point 200,000 tons of municipal waste and producing about 50 megawatts of power from the generated gas. The compost material that results from this is of a high enough quality for unrestricted usage. It's pathogen-free by the process itself and constitutes a win-win-win in all regards. The cost of the project capital can be readily recovered by the avoided tippage fees and the gas and compost yields of the development.

It's an illustration of the level of ingenuity we need to start to apply which looks at an integrated approach to our energy and a myriad of other environmental critical issues of our times. I would contend that applies to all manner of sectors. The production of methane from agricultural waste would also address the despoliation of our aquifers in the province. The technological and economic opportunities abound. What is missing is an atmosphere and a culture that support and nurture the ingenuity of the people of this province. We need to be providing not only the cultural will to proceed to the 21st century's future in sustainable energy, but also to prepare our young people for the capacity that we need in terms of ingenuity to enact this great transformation.

Ms Elwell: Thank you. Gerry Scott, David Suzuki Foundation.

Mr Gerry Scott: I'll be very brief. I think we've had pretty much an encapsulation of the best of our story and case, just in reiterating the call and support for the renewable portfolio standard and demand-side management programs as part of your mandate.

I would just want to touch on the issue of climate change, which has been a major focus for the David Suzuki Foundation. While we're very supportive of ratification of Kyoto, with or without that, I think it is an essential conclusion from science today that within years, there will be a requirement—provincially, federally, internationally—for reduction in greenhouse gas emissions. The science is overwhelming. While there are those who would delay action, it is inevitable.

In looking at where Ontario achieves its electricity supply and how it affects the demand that drives the supply, I would urge you to consider the whole notion of the risks of stranded assets. There are no risks, there are no future carbon liabilities from demand-side management, from having electricity used efficiently. There is no downside on air pollution, climate change, stranded investment. However, that could easily occur if we see the expansion of coal, nuclear and fossil fuel generally.

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Throughout the world, we are seeing the trends that Ralph and the others have described of efficiency, of new industries growing in what we call the new energy economy. Wind is growing at over 25% per year globally; 12,000 people in Denmark work in the wind industry in well-paying jobs, exporting all over the world. This is coming to a country near you, called the United States, where the wind industry is booming and there are plants going to be built in America to actually manufacture the technology. Those plants should be on our side of the line. So that is one goal that I would urge consideration of as part of the structural changes, including renewable portfolio and demand-side management.

Ms Elwell: Just crunching some numbers for you, I'll remind you that according to the federal government and the climate change tables, Ontario needs to reduce its use of electricity from coal by 93,000 gigawatt hours by 2010. Our plan over the course of 10 years could reduce that number by half; it will be down 40,000 gigawatts. So this plan is defensible and it's economic, and we need to do it.

I just wanted to give one other number, and that's on demand-side management. We know that for every dollar we spend on energy efficiency programs we save $20 to the Ontario population. The gas sector—we've seen this through the energy board—the utilities are making money now providing energy efficiency programs. It's a win-win. Currently, for a $13-million investment by Enbridge and Consumers Gas it will be saving Ontario ratepayers $200 million. The payback is just phenomenal. I thought I would add those numbers.

Shall we turn now to some questions? We'd be very happy to flesh out these bare bones.

The Chair: We're very close to out of time, but if the committee doesn't object I'll give two minutes to each of the caucuses and go from there. I don't see any objections. To the official opposition, Mr Bradley.

Mr Bradley: First of all, I should say, Mr Chairman, I don't often agree with Tories, but Mr Torrie's presentation today was very beneficial.

I'm very intrigued by—and some of us have heard it before as well—your call for demand management because I well remember, as some others will, Ontario Hydro telling us how we had to build all of this capacity, that the demand would be tremendous in the years to come. Of course, that was never proven by fact, even though they had all the nice charts and so on.

By the way, I should also say—I heard you mention Kyoto—that I was, I should tell my Conservative friends, deeply disappointed that the Premier accepted the leadership of Ralph Klein and George Bush and signed on to a

letter calling on the federal government not to sign the Kyoto agreement. That was very disappointing. I just thought I would share that with my colleagues in case they weren't aware of my position on that.

Anyway, would you suggest a couple of ways that we could address the issue of demand management? Some of us have been very interested in that end of it, demand management, conservation.

Ms Elwell: That would be a distribution function, which is still a natural monopoly. The OEB sets the rates for distribution. Do it like you did it in the gas sector: require DSM programs for electricity. What they do is they have a lost revenue adjustment mechanism so the utility doesn't lose any money by saving energy. It sets a performance measure. If they meet or exceed that performance measure, they get an extra incentive. If they're below that measure, they get a penalty. They're never below, they're always above. It didn't bankrupt the place.

Your minister, Jim Wilson, was quoted in the Report on Business recently saying that the signal he's getting from the industry is to not support DSM in Ontario for that sector. Your committee needs to go to cabinet and suggest that a signal be given to the OEB to require DSM projects for the electricity sector. Your constituents save money because of these programs.

Mr O'Toole: I do really appreciate in a general sense that it is a paradigm or a cultural mind shift that has to go on here somewhere. Without trying to blow our own horn, I think the government has taken the right step by opening up the market and dealing with the existing monopoly and its inherent cultural inefficiencies. The way I hear it, what was going on culturally wasn't going to change. All of the pieces were put together years ago and they haven't changed, the generation side and the rest of it. Right now, as an elected person, people want cheap power. That's the bottom line.

I have a couple of questions and perhaps at the end you will have time to answer them. I agree completely with looking at renewable portfolio standards. Demand-side management is part of that, learning to conserve, and it's also related to how we price the product. We have been underpricing the product. If you read the papers, people are alarmed that they're going to have to actually pay what it's worth. Do you believe people will actually pay for it or do we need some kind of a renewable portfolio subsidy for wind or water, whatever sustainable energy form? Do you think they'll pay? I don't sense that people will pay.

One last thing, and it's my opportunity to say, you talked about landfill and that the real issue here will be whether or not we go into incineration. Harvesting methane gas, as you said, is important. But shouldn't we consider all options, the most appropriate options? When you look at some of the thermal applications in cement plants etc, they're burning at 1,500 degrees. There may be some things we could actually add to the fuel without adding to the greenhouse gas thing.

Mr Bradley: Not PCBs.

The Chair: Mr O'Toole, give them a little time to respond.

Ms Elwell: Could I have Gerry on full cost and Greg on landfill.

Mr Scott: On this whole question, which is obviously for any public official but really anybody in the debate, the question of the consumer costs, sure, it's there. We certainly agree that over time there will be price increases. Our organization has argued that there should be almost constant price increases until we start to see the capturing of the real costs. But we also believe that they can be done in a way that is gradual so you don't have incredible rate shocks that are a huge diversion from some of the key parts of this debate.

When we talk about cheap power, whether you're running a small business, a large business or a household, you don't necessarily want cheap power; you want a smaller bill. This is where demand-side management, in our view, becomes so important. You don't have to pay anything if you're not using that power. "There's nothing freer than free," to quote a former Premier of British Columbia who is of your political persuasion. By demand-side management, we are taking a portion of that bill to zero. So the unit costs become secondary, in a sense. We've heard the description on gas in this province with demand-side management, and throughout North America in the 1980s—particularly in the 1980s but there are some still in existence today, despite deregulation—we saw this miracle called efficiency take off in the electrical sector. I would urge the committee to really get into that historical literature, where the investment brings such payback, and it brings it quickly, as opposed to a long-term debt on a stranded asset.

On real costing, we have to look at the costs that coal and other forms of fossil fuel are imposing on society. You've heard, I'm sure, other testimony about these things called externalities, which is a technical word for dumping your garbage onto someone else, physically and financially. That's what burning coal is all about in this province, where acid rain, fouled air and climate change—those costs are put on to somebody. Where? Who knows, who cares; nothing to do with the utility. So those real costs have to be incorporated into the utility price, not into the price of the Ontario medical system, to use one example.

I'm sure you've heard this. Those economics are real, as the Ontario Medical Association will tell you.

Mr Chair: We are well over our time. Thanks for coming forward and I hope your conference was a success.

Ms Elwell: Thank you very much. Just to let you know our next steps, we will be doing a letter-writing campaign to each of the MPPs to support you and your work for an RPS and DSM.

The Chair: Thank you very much. Have a good day.

1220

RONALD PIET
HANS ARD

The Chair: Our last presenter for this morning and next presenter is Mr Ron Piet. Please come forward. For

individuals, a total of 10 minutes has been set aside to make your presentation. Whatever is left over we'll divide between the caucuses. Please state your names for the sake of Hansard as you begin.

Mr Ronald Piet: My name is Ronald J. Piet. I'm an independent innovator and inventor.

Mr Hans Ard: My name is Hans Ard. I'm the president of DH Design Ltd and SA Industrial Design Ltd, a manufacturing company and a real estate company.

Mr Piet: We are both Ontario residents who have shared an interest in alternative energy issues. We have acquired the inventory of a former corn stove manufacturer and for a couple of years have studied the problems with the industry, with the market, and gained an understanding of the technical operations required. We have improved them immensely and that is what we wish to commercialize.

As a background, shelled corn, that is, dried corn, commonly used as feed corn, can be used as a fuel. In fact, corn burns very well, not loose in a pile but in a special appliance that is dedicated for that purpose. This has been recognized by Ontario's Ministry of Agriculture, Food and Rural Affairs, which has published a fact sheet on this subject.

There have been a number of presentations to this special committee that deserve consideration, but because of the significant infrastructure costs they require, they could only be considered long-term propositions. We should remember that our existing energy source, infrastructure and supply chain infrastructure were put together over a span of generations at considerable expense. Fuel corn is a renewable energy that can be implemented in the very near future without any significant infrastructure costs because the production, moving, handling and growing of fuel corn has been done for decades and has very few unknowns. Millions and millions of bushels are currently being produced, stored and distributed into the marketplace. So for us to use corn as a heating fuel is easily attainable.

As has been reported to this committee before, consumers are reluctant to invest in any new energy system that has a high capital cost, regardless of how efficiently they operate and that there is a payback in a short period of time.

The cost of a corn-burning appliance is relatively low and it is borne, actually, by the consumer only. Some of the proponents of other alternate energy systems that do require extensive infrastructure just assume that that would be picked up by the government, but because there is no new infrastructure required, we could implement corn as an alternative fuel in the very near future.

It offsets fossil fuel use. We're talking about a renewable resource that can be grown in as little as 45 days. The industry has the potential to use what is called waste corn, that is, corn that is scorched or corn that is mouldy. It's not prime feed corn. Even recently, I have been checking with mills and they said that as soon as the corn doesn't meet standards, they essentially just throw it away. You could have it for free.

Production is not centralized, consumption is not centralized and the distribution system already exists. We've got mills, we have feed stores, we have the road system, we have the farmers growing it. They don't need any new implements to harvest it, to plant it. Everything is already knowledge under their belts. There would be no reluctance.

This would add economic benefits to the small towns and rural areas of Ontario: increased production, increased distribution. That would then create more opportunities in Ontario for manufacturing the appliances that would burn feed corn, and then from there we could do export.

The problem is there is very poor awareness of corn as a fuel. The problem has also been that the appliances that exist for burning corn do not operate well. They're poorly designed and there are also styling problems, where they wouldn't fit into the decor of people's homes. We've understood those problems and we have worked on the technical aspect of burning corn and I'd say we have pretty well perfected it. The cost of burning fuel corn is comparable to the cost of burning natural gas. It's lower than wood, lower than oil, lower than electricity. You could then burn corn in areas that aren't serviced by natural gas, which is chiefly rural areas and small towns where the corn is grown. Our solution is a proprietary corn-burning technology that overcomes the previous problematic designs. We would like to develop a range of models that would fit those needs.

Our recommendations to the special committee are:

That the current grading system for corn include a category called fuel corn—it doesn't have to have a minimum amount of protein, for example, and it doesn't have to have a certain density, which is now required for feed corn;

To fund R&D to develop special hybrids that would be even more efficient as a fuel, and then to fund R&D to develop large-scale fuel corn systems for greenhouses, for example;

To offer grants for UL/CSA approval for these appliances so they can go on to the market and then offer an Ontario tax credit for fuel corn.

We feel that education of the public on the benefits of fuel corn—it's a desirable fuel alternative, it can utilize what is currently waste, it does not pollute and it lessens fossil fuel dependence. Thank you, Mr Chair.

The Chair: Thank you very much. We have about one minute per caucus remaining, starting with the government side.

Mr Hastings: Thank you for coming out, gentlemen. You say this could be a readily made fuel corn technology in the near future. How do you translate "the near future" in terms of years and what do you see as the practical difficulties, as well as financial? One of the disappointments I've had from this committee is the near lack of the financial community—whether it's labour-sponsored venture funds or the investment dealers' association, even straight pure angel investors. They're well hidden and we've had little response in getting these

people here to harness some of your new ideas. How would you go about doing some of this?

Mr Ard: The barrier there is there's a Catch-22. There isn't a market for the products and there isn't a supply. It has to start somewhere. A person like myself is looking at saying, "Well, this thing can start on a smaller scale." Within a year you could have product on the market. We have one unit that's been developed that handles one small portion of the potential. It's a beginning and it could be commercialized within a year.

Mr Hastings: Does the National Research Council then play a role here, do you think?

Mr Ard: There is a division called CANMET that deals with solid fuel combustion technology. But for all these things, of course, you need money to start. That is the missing ingredient. Because there aren't astronomical returns immediately projectable, no one's going to jump into it.

The Chair: The official opposition?

Mr Parsons: A two-part question: one is, no farmer ever set out to grow waste corn. They're looking for the premium. Assuming there wouldn't be enough waste corn to meet the market, have you any sense of what effect your demand would create on corn prices, thinking of farmers who want it for feed? So the first question is, what would the economic effect be, and the second is, for a house of 1,400 or 1,500 square feet in southern Ontario, what size storage capacity of corn would you need to feed the stove for the winter?

Mr Piet: I'll answer the first part and Hans the second. The first part of the question was about the effect demand would have on corn prices. It's true that no farmer goes out to grow waste corn, but if his density is low, and because the mill packages the corn in feedbags by weight under very tight, stringent federal standards, if that bag weighs a little less, he can't sell it. So they measure the density immediately and realize that they would come underweight under weights and measurements and it's turned back to the farmer. If the elevator scorches the corn in the drying process, they themselves then just throw it away. So there is waste coming back to the farmer and then there is waste at the elevator end.

But the farmland in Ontario for corn production is underutilized. In fact, production now is lower than it has been in the past. There are a lot of fields and fallow. So if there was a designation for fuel corn or popularity in the market, there could be more production done within a season that shouldn't affect, then, the cost of the corn.

Mr Ard: To answer the second part of the question, these two bags represent the energy equivalent of a litre of propane. The fuel wouldn't have to be delivered all at once. It could be delivered like propane or fuel oil is delivered, on a frequent basis. Therefore, your tank or storage could be whatever size you felt was convenient and economical for efficient delivery. So it's similar to an oil tank, I suppose, in size.

The Chair: Thank you very much for your presentation and for coming forward. It's something that has been out there, but you're upgrading and we look forward to its production in the future.

The select committee on alternative fuel sources now stands recessed until 1400 hours.

The committee recessed from 1232 to 1404.

ONTARIO ENERGY ASSOCIATION

The Chair: I'm going to call the select committee on alternative fuel sources to order. The first presenter is Bernard Jones, president and CEO, Ontario Natural Gas Association/Ontario Energy Association. Welcome. It looks like there's more than Bernard Jones here.

Mr Bernard Jones: There is indeed, Mr Chairman. Thank you very much.

The Chair: There's a total of 20 minutes. After your presentation whatever is left we'll divide among the caucuses. Maybe you could introduce your delegation.

Mr Jones: Indeed I will. On my right is Jasmine Urisk, president of JTU Consulting Inc. It's a company that provides environmental services to the energy sector. On my far left is Peter Heffernan, regional director of Rolls-Royce Energy Systems, a natural gas turbine manufacturer. On my immediate left is Keith Rawson, manager of marketing, TransCanada Power, an energy producer. In the audience is Mr Peter Budd of Power Budd LLP. He's chair of that company, and that company provides legal services to the energy sector. Mr Heffernan, Ms Urisk and Mr Budd are on the Ontario Energy Association board of directors. Mr Budd is the chair of that association. Mr Rawson is the chair of our energy markets committee. So that's our panel.

I would like just to open with some brief comments from our executive summary, the document we've tabled with you today. Then we'd be delighted to take questions.

Of course, the association is very pleased to have this opportunity to respond to you, to the committee and to the interim report. We particularly appreciate the consultative approach that the government has adopted in this regard. We are a new energy voice in the province. We are a new trade association created on January 1 of this year. We were created out of the Ontario Natural Gas Association, the Ontario Energy Marketers Association and major new partners in the Ontario electricity sector. Attached to this submission is a list of the 100 or so companies that are currently our members.

With regard to the interim report, we fully support the six objectives that have been identified by the select committee, and in particular we'd like to underscore that we believe that the competitive market must be the primary vehicle for the development of alternative fuel sources. So we definitely put the emphasis on reliance on the competitive market place. At the same time, we do believe that the government can play an important role in supporting the development of alternative fuel sources, first by committing to procure some alternative energy for provincial operations. In this regard, it would help the municipal and university, school and hospital, or MUSH, sector, as it's called, to find the economic means to increase the use of alternative fuel sources. Second, place

greater reliance on energy efficiency measures, for example, in building codes, education and training; and third, encourage research and development and demonstration of alternative fuels through tax provisions, government procurement and other measures.

With that brief introduction, we'd be pleased to answer any questions that the members of the committee may have. Thank you.

The Chair: You said it was going to brief; you certainly have been brief. Thanks very much. I guess we'll start with the official opposition. We have about eight minutes for each caucus.

Mr Parsons: I don't have a question yet; I'm still thinking.

The Chair: Would you like to pass and we'll go to the government side?

Mr Parsons: If you come back to me. I don't wish to relinquish the opportunity.

The Chair: Sure.

Mr Gilchrist: John would have a preamble until that time.

Mr Hastings: Thank you for coming in today. In your comments you noted the necessity for some kind of tax provisions for the encouragement of alternative fuels. What is your specific thinking regarding those types of tax incentives? Should they be targeted? Should they be of an imbedded nature in the tax regime of the province so they cannot be immediately dislocated by somebody who doesn't regard renewables as an important element of future energy planning?

Mr Jones: Keith, would you like to respond to that question?

Mr Keith Rawson: I think when we made reference to tax types of instruments, we're putting that position forward as a way to have minimal impact on the marketplace. For example, the federal government has provisions for reduced or changed taxation for certain qualifying facilities, and that's the kind of thing that we're talking about.

Mr Hastings: The recent Martin budget—I haven't looked at the details—has suggested a targeted production tax for wind energy. Any comments there, even though it's outside your ambit in a way?

Mr Rawson: I don't think that's the kind of taxation methodology that we're recommending. We're recommending a methodology that's encouraging but not to the point of specifying what levels people will invest in and therefore take advantage of the mechanism.

Mr Hastings: This morning, we had a group of people in from the Canadian Institute for Environmental Law and Policy and the David Suzuki Foundation. One of the observations made by two of the presenters in that group was that we're missing a magnificent opportunity insofar as turbine manufacturing is concerned.

1410

I hear that you represent a particular type of turbine and that Ontario needs to have some kind of an accelerated tax regime in place to deal with having a greater turbine manufacturing presence. Would you like to comment on that, sir?

Mr Peter Heffernan: I will. Rolls-Royce does manufacture gas turbines in Canada, in Montreal specifically. I am not a tax expert by any means, but my understanding of the current tax regime that's in effect federally is a class 43.1 accelerated depreciation. If you meet certain thermal requirements, you can write off a plant very rapidly, which provides an incentive. We have a number of facilities that have been built by people and have taken advantage of that type of tax incentive.

Additional tax incentives to encourage more gas turbines going into the marketplace—I'm not aware of any. The gas turbines typically are highly efficient and on a pure economic analysis tend to be very competitive. So I'm not aware of any tax incentives proposed. I wasn't privy to their presentation this morning. I'm not sure what they were specifically referring to.

Mr Hastings: They were talking about, I guess, different types of turbines besides gas-generated and that if we don't get into this field, Ontario will, as usual in this whole area, be a net importer of sophisticated equipment, not just in gas-generated turbines but in the whole renewables industry.

Mr Heffernan: Unfortunately, in the manufacturing sector, from my understanding—I'm not familiar with all the different technologies that are manufactured, but other than Pratt and Whitney, Rolls-Royce and Westinghouse, I don't think anyone manufactures gas turbines in Canada that I'm aware of. I don't know if that would encourage people to locate plants here, because the Canadian market for gas turbines is not as big as the American market. I don't know if it would have the desired effect. I'm not an expert. There is some manufacturing here now, but it's not extensive.

Mr Ouellette: A couple of questions. Earlier on this morning we had the Canadian Petroleum Products Institute; I think that's who it was. They made specific comments regarding your particular industry as it relates to automobiles, that it's had a number of years of incentives and yet it fails to mature in any way, shape or form. Can you give us any explanation as to why or how long should any incentives go on for the industry so it can reach maturity?

Mr Jones: Can you clarify something for me? Did you mention transportation fuels?

Mr Ouellette: I think the Canadian Petroleum Products Institute were the ones who spoke about your particular natural gas vehicles.

Mr Jones: Oh, natural gas vehicles.

Mr Ouellette: Yes.

Mr Jones: We don't have a spokesman here today for the natural gas vehicle industry.

Mr Ouellette: Oh, OK.

Mr Jones: There is another alliance called the Canadian Natural Gas Vehicles Alliance, and we could make contact with them for you if you wish and they could reply to a question.

Mr Ouellette: OK. The other question I had was regarding supply and demand. There are studies in Alberta and in the United States that indicate the demand is going to far exceed the supply by the year 2015, and that the pipelines coming down from the territories will effectively only replace the current stocks that are available. What's taking place within your industry to ensure that it's going to be able to meet the demands that are going to be out there by the year 2015?

Mr Jones: I think at a general level this is why we've put stress on the requirement to allow market forces. In recent years there's been a tremendous amount of investment, both in the exploration and development end of the natural gas industry and also in transportation and distribution. So if the market sends the right signals, then the investment takes place.

With regard to the specifics of the pipelines, Jasmine, do you want to add anything?

Ms Jasmine Urisk: I don't have anything to add at this point, Bernie.

Mr Gilchrist: Just very briefly, along the lines of Mr Hastings's question, there certainly are some very significant uses of natural gas in the province today under the current pricing and, in the case of vehicles, tax incentive regimes. There is also no doubt—I don't think there would be any disagreement around this table—that natural gas would be a significant step along the evolutionary scale beyond coal, and this committee certainly should be looking at any steps we could take.

Contrasting the short term from the long term, there are some supply issues that have been raised in regard to natural gas. I guess the biggest question we're wrestling with here is that we categorize the immediate, short-, medium- and long-term proposals we can be putting in our report. Where, realistically, would you have us put any new uses for natural gas, at what cost, and what would the life expectancy be given the supply problems? If, for example, we were to propose to convert all the coal plants to natural gas, what impact would that have on supply and on the cost of natural gas? Obviously, you've got more people bidding in the competitive market.

Mr Jones: That's a hugely complex question.

Mr Gilchrist: Take your time.

Mr Hastings: We want a complete answer.

Mr Jones: Of course, yes.

Again, I go back to reliance on the marketplace. To meet the growing demand for energy generally, we have to make sure we have a competitive marketplace and a truly level playing field so that the options can be tested in the market at market prices and we get the best choices for consumers. Wholesale conversion of any particular power plant to natural gas may not be the best option. It will have to be judged on a case-by-case basis.

I don't think there is a simple answer. You can model these things, you can come up with different results based on different assumptions, but I think in the end there's a limit to the amount of planning you can do, as in central planning. But you leave the development to the marketplace and the energy producers, whether it's electricity or gas, and the distributors and transmitters will do a good job of making sure, if the demand is there and the price is right, that the supply is available.

Mr Gilchrist: I guess the problem we're struggling with here is that we're not proposing necessarily to leave it totally up to a competitive marketplace. In a perfectly competitive model out there, maybe we'd be burning nothing but coal, if that happened to be the cheapest alternative right now. I don't think anyone from an environmental perspective would be too comfortable with seeing locomotives, for example, outfitted to burn coal again instead of diesel. So supply isn't the issue and in some cases, such as the locomotives, even price isn't the issue. I don't think you could ever seduce the railroads into going back.

If the committee and then the government were to act on any of the committee's recommendations to skew the marketplace by imposing other criteria, namely, environmental, what will the impact be in your industry? Using that hypothetical example, would the increased demand for natural gas in our current coal-burning facilities mean that you would be facing supply problems?

You make a simple choice. It's a lot more profitable to ship a whole lot of product to one customer than to ship a little bit of product to a whole bunch of prospective new customers, ie, natural gas vehicles. While I understand your association casts a wide net, would that be a likely scenario, or would we see prices go up because you're going to have more people competing for the same resources being able to funnel through that same-sized pipeline?

Mr Jones: At one level, it's difficult to respond to a hypothetical question that way. That's why I go back to complexity. It really is a very complex issue. There's no question, other things being equal, that if demand increases, then the price could increase—no question of that. But you have to look at the competitive situation of all the alternatives. What are the alternatives for generating the electricity? Under certain circumstances, any number of options could be the best choice.

The difficulty is that in looking at imposing environmental constraints on plants, you need to make sure you have the right kind information to be able to do this, and I'm not sure you have that. I'm not sure how easily it can be gotten at without sitting down with the companies that would be involved and working through the proper scenarios to make sure it's all been taken properly into account. There could be a danger of making blanket decisions, blanket regulations, that are not productive and in fact hurt the public interest rather than advance it.

Mr Parsons: I've been made aware through my interest as a rail fan that there are a number of towns in California that purchased used diesel locomotives and they're now parking them outside the town to generate electricity for that town, burning diesel. It's evidently a fair growth business for one particular company.

I'm not sure whether I'm asking you as your association or leaning on a representative from Rolls-Royce,

but do you envision, with the deregulation, an increased market for turbines to generate electricity for industry or for municipalities?

1420

Mr Heffernan: It's a good question. We believe that the market will respond with gas-fired generation, at least in the short term. It's probably the largest chunk of new capacity that will be built, for a lot of reasons. If you look at the straight economics, the environmental impact, most of them emit low emissions. There are a lot of reasons that it will happen.

It also ties to the question Mr Gilchrist asked. He just left the room, but in terms of the impact of mandating a mass retrofit of an existing large thermal plant to allow the market to respond with smaller chunks of generation closer to the load, you're going to accomplish the environmental objectives by allowing the market to respond with load, because in a decentralized, open market I don't think you will see a lot of very large plants being built, at least in the short term. I think you're going to see smaller chunks of generation. I don't mean one, two or three megawatts, I mean 50 megawatts, 100 megawatts, 150 megawatts, located closer to where the load is.

That has infrastructure benefits as well, in that you're not going to be building large transmission infrastructure to move electricity around. It just makes the whole system more efficient.

We do see a market for gas turbines. Again, we have a number of projects in Ontario. The market has been delayed. People have been sitting on the fence. I just found out last week that one has been delayed by at least another three years because they signed a good contract with an electricity supplier. So their motivation was based on their internal infrastructure, their boilers having about five to eight years left, but also straight economics. They got a good deal on electricity so this project is no longer economical in the short term. Those are the kinds of rational decisions that people make around building new generation and moving forward.

Mr Parsons: But do you see your increased market because you're going to have a product that will be more economical for a large industry to self-generate or because of reliability of supply?

Mr Heffernan: That's another good question, because they are both issues. One of the things driving people—it depends on what an end-use customer needs. If reliability is an issue, then that can be a driver in putting in their own generation. Most of them make rational business decisions based on straight economics, but where you have a thermal house, someone who is requiring steam and electricity, the overall economics and efficiency of that are better than operating a standard boiler and buying electricity from some supplier somewhere else. You just have natural economies. You hear the term "economies of scale." Well, large doesn't necessarily mean that it's the most cost-effective project you can build. It depends on the other synergies that are at the site and it's very site-specific. But we do see—which is why I joined Rolls-Royce when they approached me four years ago—a market when the market opens up for smaller chunks of generation like that, and most of them will be gas-fired turbines.

The Chair: Thanks for coming forward with your presentation. It's very much appreciated.

ONTARIO CORN PRODUCERS' ASSOCIATION

The Chair: Our next delegation is the Ontario Corn Producers' Association, Terry Boland, director of public affairs.

Mr Terry Boland: This was a quick lineup, so we didn't get the opportunity to introduce the actual presenter for our presentation today, who is Doug Eadie, the chairman of the market development committee for the Ontario Corn Producers' Association. He will be making the presentation.

The Chair: OK, thank you. You have 20 minutes. After your presentation, whatever is left over we will divide evenly among the caucuses for questions.

Mr Doug Eadie: Thank you once again for allowing Ontario's 21,000 corn producers to provide input into your committee's development of recommendations on alternative fuel sources for the province of Ontario.

The Ontario Corn Producers' Association appreciates the enormous task the committee has undertaken and their urgency in addressing growing air quality and other environmental issues as indicated in your interim report, and rightly so. The committee has worked hard to provide balance between achieving a sustainable economic, social and environmental balance in policy development. Also, the interim report makes a clear distinction between the short- and long-term recommendations for action in addressing energy efficiency, improved air quality and researching the future potential alternative fuel sources.

The Ontario Corn Producers' Association has been working on the development of renewable fuels for close to two decades now. We feel fortunate that legislators and consumers alike have started to embrace the concept that options do exist beyond the status quo and we can do something about reduced air quality and greenhouse gases caused by vehicle emissions.

Today, ethanol-blended fuels are available in hundreds of locations across Ontario and indeed Canada. It took a leap of faith by retailers like UPI Inc and Sunoco, plus many smaller independent fuel retailers, to get the fuel on the market. But it's just the beginning of a concerted action if where to make the economic, social and environmental benefits long term.

We feel the development of the Ontario ethanol industry is an important success story. Two decades ago we did not have any ethanol production in the province. Today, we have approximately 173 million litres of ethanol being produced in Chatham and Tiverton, Ontario. Two other projects are in development. This represents over $50 million in corn sales alone.

What has it done for this province's corn producers? It has provided a new value-added market for corn, creating jobs and working to provide new economic and social benefits to rural Ontario. The two plants currently in production utilize 17.3 million bushels of corn and have propelled Ontario into the leadership position in ethanol production in Canada. But we cannot take this for granted. It took a lot of hard work to get the industry up and running and it remains fragile.

Government has played an important role. The provincial road tax exemption on alternative fuels and the Ontario ethanol manufacturers' agreements have been important instruments in getting the industry off the ground. But like any new industry, barriers exist and it will take an enormous effort by all parties—feedstock suppliers, processors, retailers, government and consumers—to ensure that we do not slide backwards into the 20th century.

Ethanol-blended fuels are here and now. They are on the market. They are providing economic and environmental benefits now. They are part of the short-term solution, already accepted and provided to vehicle operators at a reasonable price and at many locations. Price and availability are key to consumer acceptance, the test for a change in the alternative fuels market.

We would like to make further comments as we answer some of the questions posed by your report.

Should a provincial strategy in alternative energy and fuel sources be developed? Clearly, yes. If you do not, you are accepting the status quo and a continuation of smog alerts and the continued environmental damage from greenhouse gases. Ethanol has always been part of the solution, short and long term, but it needs expanded support from the Ontario government.

What specific financial incentives or policies are most effective to overcome market barriers for various fuel or energy types? The road tax exemption has been crucial for consumer acceptance, allowing ethanol blends to be sold at prices similar to gasoline. Further public support for constructing plant facilities would help secure the industry's place as a mainstream sector in the minds of financial institutions and investors.

Should Ontario develop alternative fuel/energy procurement targets and requirements for provincial procurement? Governments have become leaders in setting social trends such as buying environmentally beneficial fuels like renewable fuels. The establishment of a procurement policy for ethanol in Ontario ministries and the development of fuel depots for car refuelling would be an enormous positive step forward.

Should the Ontario government consider a lead ministry, interministerial group or special sector group to formulate and coordinate alternative fuel and energy policy? Legislators must set policy and provide direction and interpretation of that policy. An interministerial group would ensure that policy is followed and implemented among all industry partners but must report back to legislators on the progress made.

On the issues of research and financing of projects, we must always strive to improve our performance and support for research projects will allow us to improve the efficiencies and effectiveness of our alternative fuel sources. The Ontario government has provided some financial support for ethanol production projects and the support has had a very positive effect on moving these new energy sectors forward, both through confidence in the project and in the industry.

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Should the Ontario government piggyback with federal programs in the development of alternative fuel energy policies and programs? Yes and no. Many areas, such as fuel components and environmental initiatives, are already joint federal-provincial programs. But Ontario must face its own issues head-on, such as smog alerts in our major cities. Ontario can provide leadership in helping to offer consumers renewable options, and set an example of confidence. But other, more complex issues which have no borders, such as greenhouse gases, need a concerted effort by all levels of government, even if it does take a little longer to reach the objectives. The benefits will be long-lasting.

Should educational curricula be revised to include alternative fuel energy topics? Absolutely. One of the significant issues with renewable fuels is the understanding of the fuels. Apprentice mechanics are a good example of the need for awareness of renewable fuels. In fact, the industry has been trying to get teachers to include renewable fuels in their courses, with limited success due to financial limitations and the inability to reach all of the educators. Many myths have been created, and confusion exists between fuels such as ethanol and methanol. Inclusion of renewable fuels would lift this burden off the industry. Awareness of environmentally beneficial fuels would also help set a mindset among students about their benefits and use.

On alternative fuels, should the Ontario government acquire alternative fuel vehicles where feasible and practical for its vehicle fleet? In fact, the Canadian Senate passed legislation requiring conversion of the federal fleet over several years. The policy also includes the use of ethanol-blended fuels, based on price and availability. The government introduced a sticker program on vehicles to remind employees to purchase low-level ethanol blends. Governments must set an example for the consuming public.

A crucial question: should the Ontario government establish programs to support increased ethanol production from Ontario-based agricultural cellulosic feed stocks? Should enhanced production targets be established in conjunction with federal efforts to boost Canadian ethanol production? Should the use of ethanol in all gasoline sold in Ontario be mandated? Yes, if you want environmental benefits much sooner rather than much later. The federal government has set a production level of one billion litres by 2010 to assist in meeting greenhouse gas reductions. If Ontario is to maintain its industry-leading position in ethanol production and reap

the benefits to the economy, job creation, agriculture, rural municipalities and the environment, it must be proactive and aggressive in supporting its industry. Support through the interministerial committee, with the Ministry of Agriculture, Food and Rural Affairs leading on the ethanol portfolio, would be a major benefit. A renewable fuels standard would ensure ethanol, biodiesel, and other renewable fuels would be included in future energy policy and consumer use in achieving the clean air objective. We should point out that biodiesel and e-diesel—ethanol diesel—are important components of a renewable fuels policy, both providing important economic benefits to Ontario.

In conclusion, we would like to congratulate the Ontario Legislature and the select committee on alternative fuel sources for taking this bold step in moving forward on cleaner fuels, clean air policy, and support for new energy options in the province. But as the old saying goes—and we know this committee believes in it—actions speak louder than words.

Thank you for this opportunity.

The Chair: Thank you for your presentation. We have four minutes per caucus, starting with the—I guess we jumped over there before, so we over here this time. Mr Ouellette.

Mr Ouellette: I met with some mixing people from Sunoco. They expressed some strong concerns regarding the distribution for their mixing plants for ethanol. They had a real problem in getting the actual ethanol to a lot of locations. Do you have any future plans to ensure that ethanol production is going to be around the areas or plants coming up that will be able to produce in areas where it's required? Because they were saying that they had to bring in large numbers—I think it was to the Ottawa area, if I remember correctly—but they had to bring it from Chatham to Ottawa. It was very cost-ineffective for them to do those things.

Mr Eadie: That is the Seaway Valley Farmers' Energy Co-operative. They've had their proposed plant, in the Cornwall area, on the drawing board for approximately nine years. They've been close a number of times. The most recent problem they've run into is their proposed contract for the plant had to be rebonded because of the September 11 issue, where they got into trouble with reinsurance and things like that, so they've had to go back. In the interim they got into some new financing problems. Then, of course, there is the proposed Iogen facility, wherever it's located. For eastern Ontario it would be very important to have that plant up and running. There is the other commercial plant that's going to be built in Quebec, but we would rather see the plant constructed.

Mr Ouellette: I saw this month's corn producers' magazine. It talks about a number of issues, trying to bring the feds on line to get a national policy to reach the levels that are expected out there for ethanol production. What level of crop production would it have to increase to in order to reach the Ontario requirements that were mentioned in the magazine?

Mr Boland: We have to be careful when we're talking about a national policy versus provincial. National policy—we're looking at plants and feedstocks from across the country. We look at barley, we look at wheat; we're looking at the cellulosic option that's taking place in Ottawa. There are a number of renewable fuel feedstocks that will be coming on line. If we're going to meet the criteria of what will be a billion litres for Ontario gasoline consumers, and even maybe a larger amount to meet the Canadian demand, we're going to have to look at all feedstocks. I think we were aware of that and the government's been aware of that since the beginning of the discussions.

Mr Gilchrist: My question was along a similar vein. It's my understanding that already we have far more demand than we have supply, that in fact Ontario is a net importer of ethanol, and that's with the current incentive. Help us out here. What would perpetuating that incentive do, or would you suggest that if we are going to move this thing forward we have got to, again, as was mentioned by one of the previous groups, lead the market and mandate, for example, the use of ethanol to a certain percentage, forcing the oil refineries to do something, presumably?

Mr Boland: That's sometimes the only option when we deal with established industries, to try and get certain changes we'd like to see.

Mr Gilchrist: Is it the most realistic option?

Mr Boland: To be fair, it's not black and white. When we were developing the industry, we had no ethanol, so we had to actually bring some in. Then we got a couple of plants going and we had more ethanol than we needed for the fuel and demand, so we were actually selling it out of province. Now we're back on the other side where the demand is greater than the supply, and we're trying to build plants with Iogen in Ottawa, with Seaway Valley in Cornwall and with CAI in Montreal. We were going to see that going back and forth on an ongoing basis no matter how much production we have. It will all depend on just what we have and how we address it.

The Chair: Mr Hastings, you have less than a minute.

Mr Hastings: Gentlemen, you're trying to get to renewables and corn and the biostuff into the schools, without much luck. I guess they don't have any agriculture teachers left in the rural schools.

Mr Boland: It's a very large job. I'm sure you all appreciate the size of the education system in this province, the number of students, the number of teachers. We're just a small little association trying to get some myths dispelled about ethanol, about what some of our competitors have said about ethanol for 20 years.

Mr Hastings: Do we need to advocate and have a specific course or program at the community colleges and even a degree at a university in all the renewables?

Mr Boland: It needs to be worked into the existing system, because when a mechanic is dealing with cars, they're dealing with all fuels, with all parts of a car. What we need to do, at the least, is to make them aware of the fuels and how they operate. We've had cases where mechanics have come to us and basically said, "We don't

know what the problem is. It has to be ethanol." We're facing that. We also have confusion between ethanol and methanol. We're ethanol. Methanol is a derivative of natural gas. It's a fossil fuel; it's not renewable.

Mr Parsons: Following up on Mr Gilchrist's comments about the demand exceeding supply, as we quite understand is the case, I'm certainly not an expert on this, but we feed cattle and we buy corn. We buy corn because I can buy it far cheaper than I can grow it. Maybe it's just because of the size of my operation, but I couldn't dream of growing it for what I pay. Is that a factor in why there is a shortage in supply or is it in the production equipment itself? Is there a shortage of corn or a shortage of locations to process it?

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Mr Eadie: No, there's no shortage of corn. Realistically, too, any industrial user of corn in Ontario looks at what they call the Great Lakes basin of supply. They look to a ready supply of corn from both the US and Ontario. Some corn producers in Ontario don't like to see, from time to time, American corn coming in, but at the same time, if we didn't have that total supply of corn to draw on, you wouldn't see the industrial users of corn locate in Ontario.

Mr Boland: I should point out and add that Commercial Alcohols has made it quite clear that they would prefer Ontario corn before they had to buy corn elsewhere. But, then again, we're looking at a total year of production, not just one month or a couple of months.

Mr Parsons: At the present time, Sunoco and the others are about 10% ethanol into the mix. My understanding is they could go to 80% or 85%.

Mr Eadie: If you have a flex-fuelled vehicle, yes. Any vehicle manufactured today for the North American market is warranted to run on up to 10% blends.

Mr Parsons: But it could not exceed that.

Mr Eadie: If you exceed that, then you have to go to a flex-fuelled vehicle, which is basically just to switch from within the vehicle, to switch the carburetion procedure.

Mr Boland: There's an intermediary of benefits. If you go over 10% and up to 20%, you can still go with more ethanol. It's just that you don't get the benefits. The automobile companies have been using that to meet CAFÉ standards in the United States. They were not doing it because it was going to clean the air. They had certain requirements by government that they had to meet. Yes, you get past 10% and you don't get quite the longer benefits that they would be able to benefit from CAFÉ standards. They have restricted it, because you always have to remember that ethanol is a little more expensive to produce than gasoline.

Mr Parsons: But the health care costs are offset to the point that there are tax advantages for ethanol.

Mr Boland: The irony is, if you look at things like our road de-icer, we've tried to sell the Ministry of Transportation on that for years, but they've never taken into account bridge damage, vegetation damage or underground parking damage. They won't count that in as part of the cost of producing it, so things like corn-based road de-icer is extremely expensive compared to the production of salt. Yes, you're right. There are things like health costs that need to be taken into account.

Mr Parsons: But your Cornwall expansion is based still on the 10% mix?

Mr Boland: Cornwall sells ethanol. It doesn't tell them how much to put in. That's a decision of the retailer.

Mr Parsons: But if we remained at 10% there would still be a market for everything produced by the Cornwall operation?

Mr Boland: Absolutely.

Mr Bradley: The Canadian Petroleum Products Institute said about four times in their presentation that, "'Alternate' fuels not a panacea." They kept saying that. "Most offer little or no compelling environmental advantage."

Mr Boland: That's a step forward. Before they wouldn't even mention ethanol. And you realize that Sunoco, which is a member, is also a retailer of ethanol-blended fuel. Yes, they also go on to say a few other things in making the fuel choice, which I read in their brief earlier today, and that's about the only thing I can probably agree in total with.

But, yes, I'm not surprised they've said it. It's the same line, but believe it or not, they're changing their tune as well, right down the line of all the companies that are in that association.

Mr Bradley: Would you say that it's public demand and public desire to see environmental benefits driving that? There's nothing else surely that would drive it except they see it as potentially bad public relations if they don't and good public relations if they do.

Mr Boland: I hope that's the case, but I would add that when you look at federal regulation and you see the reduction of sulphur, benzene or other components in gasoline, a lot of the oil companies are actually making those changes to ethanol because they do see a stable component that they can put into gasoline which is an additive, an oxygenate and an enhancer for gasoline, and something that may not have to change for 10 or 20 years while the other components are all being questioned and may be reduced over a period of time.

Mr Bradley: Dispel a myth for those who are watching across the province at this time that when you have an ethanol blend in the fuel you're burning in a car, if you get into these northern climates somehow it's going to adversely impact the performance of the vehicle. Wrong?

Mr Boland: We don't sell winter gas. In fact, we have a natural gas line antifreeze in ethanol.

The Chair: We're going to have to move along. Thanks very much for your presentation. It's much appreciated.

ELECTRIC TRACTOR CORP

The Chair: Our next delegation is Newton Gingerich, founder, the Electric Tractor Corp.

Mr Bradley: The Tories must have arranged this. Wasn't Newt Gingrich your guru at one time? This is Newton Gingerich, not Newt.

Mr Newton Gingerich: First of all, I want to introduce Hal Dickout, who is the general manager and president of SRE Controls, which makes the controller for our electric tractor. Without him, we wouldn't have all the safety features, all the beautiful things I'm going to tell you about that tractor. So we want you to address some of the questions to him.

At home I am known as Newt Gingerich, indeed, but I am not, nor ever was, Speaker of the House. I am not even speaker at my own house.

The Chair: Thank you very much for coming forward. There is a total of 20 minutes. What is left over from your presentation will be divided between the two caucuses for questions.

Mr Gingerich: Thank you, honourable Chairman, committee and guests. It's really a pleasure to be invited here. I get so excited about our electric lawn tractor and the spinoffs from it. For those of you who were at the Detroit auto show, I think the most exciting presentation was that platform which used all our technology that you could put an SUV on, you could put a sports car on, you could put a minivan or a pickup truck on. Just watch us—and watch us on the stock market, because we need your help there.

The first thing I want to look at—do all of you have a copy of this? OK. Let's change the order a little bit.

Mr Bradley: We have this.

Mr Gingerich: I'm really excited to see the number of farm boy backgrounds we have here, because I'm a farm boy too. What I'm going to talk a little bit about is getting out of declining markets and going into growing markets.

I was born on a dairy farm. As a little boy, I always admired the farm machinery dealer who came and sold us these fancy tractors. I thought, "Boy, that's where it's at," and so I went into that market and did very well. We had one of the largest dealerships in Ontario and two car dealerships besides. But I never listened to my own philosophy of getting out of declining markets and going into growing markets. I don't know if you remember when Massey-Ferguson had the whole west end of Kitchener, the whole town of Brampton was White Farm Equipment and Hamilton was all International Harvester. You thought, "Boy, these are establishments like Eaton's. They'll be here forever."

As we got into more and more agricultural recession—those of you who have been politicians for a while know that farmers got free trade long before the rest of us did. To make a long story short, even though all those tractors were produced in Ontario, right now there is not one tractor under 100 horsepower produced in North America. Just remember that. I only learned that $3 million of my family's money too late. You, as a government, don't have to learn it the hard way. But let me tell you one thing: that doesn't mean that you replace an Eaton's with a Wal-Mart.

Mr Bradley: Hear, hear.

Mr Gingerich: I think it's so important, and if you forget everything else I say, I want you to remember that what is emerging technology, things like electronic drive systems—I won't have time to actually do the whole thing I want to do, but I want you to get a clear understanding. Instead of acceleration and power systems, I'm going to talk just about our braking technology—and I'm talking about both of us—and conventional technology. When I was growing up, we used asbestos linings in cars, which was supposed to be bad then. Asbestos linings would go about 135,000 kilometres. Then they said, "OK, use ferro-metallic, because we don't want asbestos in the air." A ferro-metallic lining does 90% more wear on the drum than an asbestos lining. So you have to replace that about every 44,000 to 48,000 kilometres. In the meantime, when you have to have your brakes done, you not only buy the linings like you used to, but you have to get a new rotor or a new drum. And where is all that heavy metal? It's all converted to ground-level ozone that kills vegetation and trees.

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The only reason I'm saying that is that what we're offering in regenerative breaking is an armature. I'm going to talk about the tractor right now, because the other vehicle—I'd just love to, but there are a whole bunch of patents that have to be worked through, and if they're common knowledge you can't patent them, so I have to button my lip on a whole lot. But remember, once you perfect technology, you can make it as big or as small as you like. The idea is to perfect the technology, which we've done, and we have about 13 patents on it.

Let's just talk about stopping a car or, let's say, this tractor. It takes as much energy to stop a car from 100 kilometres an hour to zero as to accelerate to that. We don't realize that, and what we're doing now is really the same as putting your foot out and dragging it on the pavement. You're taking two pieces of metal and putting them together. There's godawful friction there, and it wears the stuff down. On my Saab, the owner's manual says I have to have my brakes blown out every 20,000 kilometres, and they actually have to wear masks and protective gear to do it. The rest of the time I'm putting it on the side of the road and nobody seems to mind that.

With our unit, whenever our drive motor isn't a drive motor it's a generator. You'd be surprised that it's like 50% of the time, because you can only go uphill for so long, and then you've got to go down. So our drive motor is either: whenever it isn't a motor it's a generator.

The other thing is, whenever you're stopping it becomes a bigger and bigger generator, but it never grabs the wheel like a brake. It rotates slowly until it comes to a stop, and if it doesn't come to a stop it rotates the other way. But the microprocessor does not let the disk come on. Mind you, our disks are good for 15 million stops. But they only come on once the vehicle is fully stopped, and then there's a 0.7-second delay. So you don't get any of that brake lining wear.

Let me explain the value of that. You could sit at a stoplight for an hour. That doesn't wear your brake lining. What wears your brake lining is going from 150 kilometres an hour down to a stop. We've eliminated that, because that's done in the armature. The armature becomes bigger and bigger, which is what the microprocessor does. The beautiful thing about that is the safety. For example, we can tell it to do all kinds of things. When they put it in a forklift, when the belly switch hits—normally, the guy has a hand thing, he gets in, it pins him against the wall. What does the Curtis controller do? It stops the unit. But maybe there's nobody else there. The processor puts the unit 18 inches the other way. The higher the forks go up, the slower the unit goes, if the unit tilts. You can build anything into these processors.

The really neat thing we're going to be able to do in this concept car is put in a gyro system that will literally keep it from losing control. It will actually know which way the car is supposed to go, aligned with the steering, and it will do braking on different areas at a thousand times the speed I could do it—maybe at half the speed you could; you know, a lot of people are faster than I am.

This is exciting stuff. Braking doesn't cause the dust that causes ground-level ozone that kills vegetation and trees.

Also, in the greenhouses—remember, electric motors are 90% efficient. A good gasoline engine is 11% efficient at most. If they put a Kubota or a John Deere on one train, first of all they could only pull 12 cars with it instead of 24 like we do. Let me explain why. They have ramps to a second floor. The tractor with an ordinary differential puts all the power to the wheel with the least traction. They get to that ramp, and if there's a banana peel on one side and one wheel spins out, the operator has to actually stop, because it's a gear differential lock. He has to press the differential lock, and then he can't start off the load because he only has one wheel driving, because the other wheel is on the slippery surface.

With our unit, the microprocessor has IR compensation. If that wheel comes loose, it never goes any faster than the other wheel. Then, secondly, in a thousandth of a second, all the power is transferred to the wheel that has the solid footing. So they go scooting up the ramp and they don't even know they ran over a slippery spot, and they've got the 24 carts on them instead of the 12. But the really exciting thing is that because of the efficiency of 95% instead of 11%, we can do two nine-hour shifts using 90 cents' worth of the electricity that everybody here has been talking about—90 cents' worth. For the Kubota or John Deere to do that same two nine-hour shifts it takes $14 worth of gasoline, but besides that, they've got to get the gasoline there. The gasoline is not there at the greenhouse, it's brought in, so there's an additional cost there. The exciting thing about it is all over this place there are receptacles. You just go to the closest receptacle and you plug it in, and 60 cents and five and a half hours later it's back full again.

Safety is our number one concern. By the way, if you're a taxpayer or you're with government, you've actually helped me build this, whether you know it or not. What it means is, each unit has safety built in. Let me give you an example. If you look at the mower there, first of all the mower can be tipped up and washed out.

Secondly, you know how if you turn on a vacuum cleaner and you plug it in the wall, guess what happens? The vacuum cleaner starts. Now, if you have your foot under the mower or something like that—but all we have to tell the processor, is, "Don't start," if there's nothing plugged into it. So you can actually turn the switch on—the reason we got this is, a farmer had his little kid sitting on the seat and it was enough to activate the seat. The kid turned the key on and turned the mower on. The farmer plugged the tractor in and the mower started going. Luckily, it didn't do any damage, but it was a wakeup call for me. I went to our chief engineer and I said, "What would it cost to put a little circuit in there that if there's no resistance at the plug, the mower won't start unless there's a plug in it?" He said, "The parts will be about eight cents and it will take me about two days of programming." But it's really exciting, because you can have a kid on the seat and you can plug it in and it doesn't start. It doesn't start until you turn the switch off and back on again.

The snow blower—you know, I've been on the farm. I used to blow out the neighbour's snow bank, and if I twisted off a sheer bolt in a storm, because I got something in, I headed for home and to the driving shed where I had some light, because you could never get the pin out and the other one back in. Boy, did I ever think this is handy when we just had to have an 80-amp breaker and you just press the button and you could do it right on the job and start the snow blower. Now, you get your newspaper in the snow blower. All you do is get off, pull the newspaper out, turn the key off and back on again and everything is reset. You just have to tell the microprocessor to do that, thanks to this guy and his engineers.

Is that other handout out yet, this guy?

Clerk of the Committee: They are still in the copier because it's such a long document.

Mr Gingerich: I have given away hundreds of these. I call back a month later. It costs me a lot more money than it does you guys to make this and it's on somebody's desk and nobody's looked at it. I wanted to make only as many as would read it, and then I got in trouble with Tonia there. She said everybody's got to have one. You don't have to read it, but I'd like it if you would. We'll come back to that.

How much time have I—

The Chair: You have about another seven minutes.

Mr Gingerich: Pray for that, those of you who do, that those other things will come here. It's really important, because I don't want to leave that.

Maybe what I will do is talk about this just for a minute before they come. The thing that I'm really saddened about now—all of you know that Bill Gates has two of our tractors at his campus at Microsoft. The Hudson River Park at Ground Zero has two now. But the

thing that's really exciting to me is, when I got the cheque from the Hudson River Park, you would think, well, it's from the Hudson River Park. The cheque was from New York state power, and New York state power has three other sales, and most of the time the cheque is from them because their subsidies are so big on electric vehicles in the state of New York and in—wherever Bill Gates is—

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Mr Hal Dickout: In the west.

Mr Gingerich: —in the west. I'm sure Bill Gates would have had enough money to pay for his tractors. As a result, the last time I looked, 93% of our sales are outside Canada. Only 7% of these tractors are sold in Canada, and that's a shame.

In the back of this, when you get this, you'll see a few letters from some different people. There is an article in here—and I only saw this this morning. It says, "Baden Inventor Primed to Tackle the Canadian Market." Isn't that something? Here's a guy from Ontario who—from the article it looks like this is a real job. He's going to tackle the Ontario market. That should be where we are first.

But if you ever come to our plant, go where the tractors are going out and you'll see that 90% of the sales are where the incentive programs are to the retail buyer, to the end user. I'm grateful for all your money and I'll take more if you want to give it to me, but we need to give that money to the doubtful buyer who doesn't have access to the things that Bill Gates or the Hudson River power or Alabama Power or New York state power have. What I put together was a proposal where, in year one and two—and remember, our sales in Canada aren't even 10%; I hope they're higher when we do this—it's 25% federal incentive to the buyer and 25% provincial, in order to jump-start this thing into Canada. That's when our sales are low. Then, in year three, it drops right down to 20%, then to 15%, and then to 10% and 10%.

Those percentages are less than natural gas. My wife bought a new natural gas car, and do you know what? She got a $2,000 incentive for buying it, which she had to send in. The pollution is only reduced slightly on a natural gas car—it is reduced, however—but a $2,000 incentive? We also got an electric lawn tractor on which the subsidy was a grand zero, and it's zero pollution. Remember, a John Deere or Kubota driven for one hour pollutes as much as a car driven 1,000 kilometres. If you forget everything else I've said, just remember that. That's why there's an article in here and the first thing it starts with is, "Don't run your lawn mower." A push mower with a gasoline engine pollutes as much as a car driven 800 kilometres, because there aren't catalytic converters, there aren't all those things. I get really annoyed when I hear government say, "Guess what? We're going to make everyone with a lawn mower tractor put a catalytic converter on their polluting engine." Forget it. Just pass emission laws.

The other thing is, in Parliament in Ottawa their tenders now say that a mower mowing at Parliament Hill can only have 60 decibels of sound and not over, because that's all ours are. If you're 10 feet away, you can't tell if the mower is running or not running.

We're running out of time, aren't we? The other thing is, the pollution is zero. A lot of people say, "Yes, but you have your pollution at the source." Government can control that. The beauty of it is you have no pollution where all the people are.

I think what I'll do is stop, because I know there have got to be questions. Look through here and come up to me afterwards or call up our Web page, or I'll give you Hal's name. I really want to follow through with this. This is really important. This is made-in-Canada technology, and it's high-tech. If you are anywhere in the Kitchener area, call me personally. We don't allow tours in the plant right now but I'll take you to the plant and you can drive this tractor. It's absolutely unbelievable. We have a caster pad we put under the steering and we can drive all over, even on carpet without damaging that carpet, with the wheels in the air that high. That's how perfect that electronic differential works.

The Metro Toronto Convention Centre here—I don't know how far they are from where we are here—has two of them. If you go in there and see them going over, the scoop has brooms built in the bottom and rollers that it runs on. They will pay for that unit in three months. Before that, they were violating a city bylaw, using propane units in food preparation areas. They just love their little outfit. I only have one brochure on the Toronto convention centre, but make sure you look at it. Make sure, if you go to the convention centre, that you see the unit working. It's absolutely phenomenal.

The Chair: Your 20 minutes are up. Thanks very much for coming and presenting to us the intriguing information on electric tractors. Certainly there's a lot of pollution particularly from two-cycle engines in our built-up areas.

Mr Gingerich: There's no question-and-answer?

The Chair: The 20 minutes are up. I'm sorry.

Mr Gingerich: OK, we'll see any of you, or you can call us.

INDEPENDENT POWER PRODUCERS' SOCIETY OF ONTARIO

The Chair: Our next presenter is Jake Brooks, executive director, Independent Power Producers' Society of Ontario. You have a total of 20 minutes here. What's left over from your presentation will be divided among the committee members. Please state your names for Hansard so we get them down accurately.

Mr Jake Brooks: My name is Jake Brooks, executive director of IPPSO, the Independent Power Producers' Society of Ontario. With me is Rob McLeese, past president of IPPSO. I have a PowerPoint presentation, if possible.

Clerk of the Committee: Do you have your computer? You have to have your computer.

Mr Brooks: Oh, I didn't bring the laptop, just this. I guess we will go with the handouts. Did people receive copies of the handouts?

The Chair: That works even better.

Mr Brooks: OK, great. Thank you for inviting us to be here. I'll explain a little bit about IPPSO and then explain what we're here to say.

IPPSO represents many varieties of power producers, both large and small, some using conventional fuels and some using alternative fuels with varying degrees of greenness. IPPSO members have diverse opinions on many subjects but we all agree on the need to improve the conditions for investment and to make the electric system more competitive, more like an open market, as we trust things are moving in that direction in Ontario.

IPPSO represents the interests of many members. We represent in fact most generators in Ontario other than OPG who either have or are contemplating installing generation in Ontario. The views we express today are the views of IPPSO as a consensus of the organization. It may not necessarily represent the views of any individual members but of the group as a whole.

Overall, IPPSO is quite pleased with the movement toward an open market in Ontario and intends to support improvement of the system within the current market design, as put forward in the various consultative processes that have led to plans to open the market on May 1. IPPSO's central focus is on investment, getting investment placed in Ontario in generation capacity and making sure that the investment process is efficient and consistent, of course, with public policies.

Although we've been invited to comment on a wide range of subjects, we have chosen to focus instead on a relatively narrow focus, which is the renewable portfolio standard, perhaps the pre-eminent method we can see at the moment for improving the environmental impact of electrical generation. In short, it's referred to as RPS, and you probably heard a thing or two about that earlier in the committee process.

The first slide I've distributed notes that energy challenges appear very daunting. We have conflicting expectations to deliver low-cost, reliable energy, with increasing expectations for environmentally friendlier options to become more commonplace and, similarly, expectations on industry to meet social responsibility standards without overly encumbering the investment process. These are significant challenges to reconcile but we are pleased to say that we do see solutions. There are options that will allow for both sets of expectations to be met.

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IPPSO tends to emphasize that the investment process is where the most important decisions are made. It's the most important place to focus policy attention. We have been frustrated as consumers and advocates many times in the past by attempts to address energy issues on a short-term basis; they almost always prove frustrating. Investments are a long-term process, and if policy focuses on that, you've got a much better chance of having the policy impact that you intend.

Making investments more efficient is a win-win situation for the producer and the consumer and for society overall. A more efficient investment process is one where there is a higher degree of predictability and more confidence in market conditions not changing precipitously. If the rules stay the same, that lowers the capital cost of the electric generation, which lowers the cost for industry and consumers and makes the economy more competitive. Producers are quite pleased if we can make lower-cost investments. We don't benefit when the costs of investment go up.

So a focus on the investment process is critical, mainly because electricity is highly capital-intensive. It's one of the most capital intensive parts of the economy. The cost of capital is a significant part of the cost of the electricity that we use. Ultimately the cost of power is proportional in large respect to the cost of the capital behind the investments.

Shorter-term, a focus on the investment process can reduce costs as well because the better the environment for investment, the more capacity will be available to bridge through periods of price volatility. In other words, a plentiful supply of capital means a plentiful supply of capacity to produce electricity, which means that during periods of price volatility, the local prices will be less frequently affected.

In any case, I want to move forward to our core advice. This is the same advice we've given many different forums: don't change the rules in the middle of the game. Electricity investments are long-term investments. It's important, therefore, to be able to see five, 10, even 20 years into the future to get a reasonable assessment of what returns are likely to be for a new generation investment. The most beneficial investments are usually those that are made with the longest-term financing. In the end, the lowest cost results from long-term financing, and not just lowest cost but more stable prices result from long-term financing.

One important corollary to this general principal of not changing the rules in the middle of the game is: don't give investors any reason to think you're likely to change the rules of the game; don't give them any reason to doubt that the rules might not stay the same. It would lead to uncertainty, unwillingness to invest and higher costs for consumers and everyone.

IPPSO wants to ensure that any mechanism introduced in Ontario is as close to truly competitive as possible and focuses on addressing issues that may distort the market or impede progress toward a fully open market. The mechanisms we propose are, like many others, based on the concept that we wish to minimize government intervention in the market unless there is an exceptional case, places where the market is not capable of correcting by itself. One of the few examples where the market is not altogether able to look after adjustments by itself is in the area of environmental costs. These are costs that are not normally borne by the producer. They are normally externalized on society, sometimes called "externalities" for that reason.

You may have heard this discussed, so I'm going to skip over this part briefly. Essentially, the sole justifica-

tion for moving away in any degree from a pure market mechanism is to correct for the absence of recognition of environmental costs. To the extent that they are externalized on society, we need to find a mechanism that essentially puts them back in so that they are not imposed on consumers any more than need be and so that investment decisions are made in light of the full costs of electricity.

This is no different in principle than the emission standards that are imposed on power plants. They are set via government agency at the level deemed reasonable for protecting public health, and the costs are therefore internalized into the generation investment. We want to know as far in advance as possible what those environmental costs are likely to be so that we can make the appropriate investment assessments. This is one of the reasons we turn to RPS: because it's very good at providing the long-term certainty in terms of how environmental costs will be recognized and viewed into the future.

The slide you're probably looking at now is called "Major Options for Improving Environmental Characteristics of Electric Generation." Obviously, the first one is emission limits. They've been used for a long time. The problem with that is that one can't plan very precisely on when government is going to decide to tighten the emission limits or, in some cases, loosen them, I suppose. If we knew that in advance, we'd have a better ability to plan investment.

Another major option that is in use in other jurisdictions, and I think is now part of the federal budget, is production incentives for cleaner generation, most commonly associated with wind energy, I think. There are other tax incentives. Capital cost allowance and flow-through mechanisms have been used in Canada to a great extent and are largely effective, although they have not by themselves been able to make a major change in the environmental impact of generation. Obviously, subsidies are a possibility too, but that's not where we want to focus our attention.

Green procurement: that's when governments or other agencies deliberately choose a standard to which they will adhere in terms of the content of their electricity supplies. The city of Toronto, for example, has announced it will procure a certain percentage of its electricity from green power sources. Other governments have done similar things.

The last mechanism mentioned is RPS. It's the one we're hoping to focus the most attention on. Just to give you a quick overview of what is meant by RPS, renewable portfolio standard, it's a content requirement in the supply of electricity that I would liken to the requirements for cleaner gasoline. We have put requirements on gasoline that there be reduced amounts of lead. Effectively, this standard applies to all gasoline sold in the market and does not dictate the price, who manufactures it or where it comes from. It leaves the market to determine everything except the initial standard. RPS is similar to that sort of mechanism, essentially requiring that electricity meets certain standards such as EcoLogo's standard, which is commonly thought of as the definition of green power in Canada. Electricity reaching that standard must comprise, say, 5% or increase by 1% per year, as an example, of our electricity supply. That would be an example of an RPS, moving to increasing percentages of green power, meeting certain definitions.

We have distributed with your handouts a proposed rule. It's at the back of the slides. It starts with the text, "Renewable Portfolio Standard (RPS), Proposed Rule, January 21, 2002."

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This is a rule we put forward for consideration that has been developed in consultation, of course, with our own members, with other stakeholders, with people in government and with other energy organizations. In other words, this is a rule that represents a fair bit of consultation and development. If this were adopted, it essentially would require that retailers in the Ontario electricity sector demonstrate at the end of each year that they have purchased a certain minimum amount of cleaner energy—green or renewable—as defined in the rule and that that percentage increase by reasonable and realistic amounts year by year.

I guess the reason we put an emphasis on the RPS is, as I mentioned before, that it causes the market to look long-term in its investment, to actually anticipate what will need to be done to meet the environmental standards of five and 10 years from now and make purchases on a long-term basis, which is very good, as I mentioned, in the electricity system.

So it stimulates new investment in cleaner technologies. It creates longer-term stability in the green power market. It doesn't determine prices. That's still a market mechanism. It doesn't even determine supply in the end. Pretty well everything that is normally determined by the market continues to be determined by the market with an RPS, with the sole exception of the content standard.

Another important benefit of an RPS is that it creates competition between suppliers. It would be a poorly defined RPS if you had just one supplier in the market able to meet the standard. We have faith that there will be competition and price competition to meet the retailers' needs to source adequate supply to meet their obligations under an RPS.

The other important virtue of an RPS is that it meets overall environmental standards very well. There is measurable change in the environmental impact of generation that is usually quite significant and positive. You can see new investments going in, and the average emissions of the electric system going down. Normally with an RPS, these mechanisms are positively supported by groups outside the electricity sector, because the physical results are so noticeable.

We've included a table that is IPPSO's proposal on RPS recommended RPS values. That's in your handout. These are, I think, a reasonable and modest example of how an RPS might be structured and how high it would

be expected to run in Ontario. The numbers here are designed to absorb a significant amount of the recently installed renewable generation capacity in the first couple of years and gradually stimulate the construction of new renewable generation capacity over the eight or so years the RPS would be anticipated to run. By the end of the RPS, under this proposal, there would be about 940 new megawatts of renewable generation in Ontario. But those are based on projections that assume a number of things about load growth and investment patterns. There are any number of details that are probably worth considering. In other words, there are checks and balances that might cause these numbers to adjust a little bit one way or another.

We're looking forward to some further discussion—perhaps a lot of discussion—and development on mechanisms like this, but we certainly hope this committee and other arms of government can put a strong focus on the RPS as a mechanism to move forward with in the competitive market. With that, I hope I have come pretty close to being on time.

The Chair: You're very close to being on time. I'll give maybe a minute to the official opposition.

Mr Gilchrist: You gave all the time to that party last time.

The Chair: I did?

Mr Parsons: You cannot challenge the Chair.

Mr Gilchrist: I'm not challenging; I'm just educating.

The Chair: I don't recall that happening.

Mr Parsons: You're right, Chair.

A question for you, and maybe it's very simplistic: energy electricity is a North American commodity that will be shipped all over the place. It may, if it comes into Ontario from the US, have passed through three or four different owners at that time. Say I'm committed to green power. How do I know I'm getting green power? Do I count on Enron to tell me? How do I know I'm getting it?

Mr Brooks: There are a number of mechanisms proposed for certification of green power. It's pretty straightforward to certify it at the source, of course. Your question is more about how to make sure that the power the retailer supplies is from the particular source. That requires essentially a system that has a little bit of auditing capability. We've explained some of that in the proposed rule, and it certainly is workable. But you would need to put administrative mechanisms in place that ensure that the power from a given green facility is only sold once by any number of the retailers who may be operating in the market.

Mr Rob McLeese: As long-term contracts come in place.

Mr Brooks: Yes, long-term contracts are very helpful.

The Chair: Thank you very much. Your time is up. We appreciate your presentation.

COMMITTEE FOR SAFE SEWAGE

The Chair: Our next presenter is Karey Shinn, chair of the Committee for Safe Sewage. Thank you very much for coming forward. You have 20 minutes set aside for you. After your presentation, whatever time is left will be divided between the two caucuses. Please state your name for the sake of Hansard.

Ms Karey Shinn: My name is Karey Shinn. I'm the chair of the safe sewage committee.

I'm here today to make some observations based on our 10-year involvement with all aspects of water and sewage treatment in the city of Toronto and to offer you some cautions, ideas and opportunities.

I have three concepts here. One is that water is a hydro resource, and this includes storm water, drinking water, and sewage and effluent as it moves through our communities. Second, the best energy we can create is energy found through conservation. Opportunities exist for many sectors to receive credits for conservation and small-scale innovative applications of solar energy. Third, there are two distinct camps in the environmental movement: there are those who fight toxics such as pollution from incinerators and chemicals that are in our environment, and there are conservationists, who are dedicated to restoration and preservation of habitats, country heritage features and natural environments.

Wind turbines are creating serious siting problems, because the proponents of wind energy do not respect the hard-fought playing field of the conservation movement. The business of wind energy has no right to annex and ruin pieces of habitat that have taken conservationists and naturalists generations to create.

Hydro power from water and sewage sources: every day, 818 million litres of wastewater, roughly one twenty-fifth of Niagara Falls, drops 125 feet to 325 feet down over the old Iroquois shoreline to the Ashbridges Bay sewage treatment plant in Toronto. When it rains, 10 times that volume of storm water runs into the creeks, streams and rivers that flow through Toronto, scouring the riverbanks and flooding the Don Valley Parkway at the mouth of the Don.

No water is a waste. Water is a resource. Hydroelectric power could become an integrated part of the design of our water delivery, sewer and storm water systems. As outfall pipes become deeper and longer, increased opportunities are created to offset capital and operational costs.

In Boston, their 9.5-mile-long new outfall pipe for the new Deer Island sewage treatment plant was designed with Acres consultants. The outfall pipe drops 350 feet directly below the plant before it heads out toward the ocean, generating 700 kilowatts of instantaneous power—that's more than a wind turbine—the equivalent of 500 households per month of power. Boston also collects hydro power when their drinking water is released from their reservoirs and into their aqueduct distribution system. This hydro power produces three megawatts per year, or the equivalent of 2,250 households. This revenue offsets the costs of their infrastructure. For more information contact Sam Baker, Deer Island Treatment Plant, Boston, and there's the number.

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Storm water could also be harnessed for power. At the same time it resolves storm water treatment and reduces flow rates to creeks and streams.

Here in Toronto, the Western Beaches storage tunnel was exempted from the environmental assessment process for no good reason. It is the most energy-inefficient process design. Three 30-metre-diameter shafts will receive up to 85,000 cubic metres of runoff that will plunge 60 metres to the bottom. Solids are not removed at the top; all the solids will have to be pumped and flushed from the bottom. The design provides for no turbines to take advantage of all this water pouring down. We will pay hundreds of thousands of dollars every year to pump out and flush this project.

The North Toronto sewage treatment plant is also ideally situated, in the Don Valley at the bottom of the old shoreline, to generate hydro power, very possibly, especially from combined sewer overflows and storm water. Currently, the problem is trying to slow the water down.

While I'm on sewage, I'd like to speak about biogas. While your document speaks to energy generators, there should be another responsible party, identified as the fuel generator in contrast to the energy generator. In this case, whether it is an industrial scale hog or cattle farm producing manure or municipal organic waste, there should be an obligation on the part of the fuel generator to choose energy generation projects that produce the cleanest use of these fuels for energy. We agree with the comment on page 16 of your report that environmental limits for pollutants should be tightened to promote clean energy technologies. We also agree there should be rewards for clean energy. There should be penalties for choosing to create unnecessary dirty fuels.

This would mean that, taking into account the list of criteria pollutants with adverse health effects, such as nitrogen dioxides, carbon monoxide etc, on page 13 and 14 of your report, producing methane as a fuel from biological waste is preferable to thermal processes that oxidize and increase productions of those criteria pollutants and create many carcinogenic compounds as well.

It might be an advantage to reduce the costs to farmers and increase the revenue for communal sewage works to provide sites for farm animal biogas production in digesters, run alongside sanitary sewage digesters by licensed operators. The farmers could obtain energy credits and the sewage works would have a local energy source. This would create a controlled land application program of both manure and biosolids, where the coliform counts are controlled and tested to prevent runoff or groundwater contamination.

Safe Sewage also maintains that the constituents in sewage sludge after methane has been recovered are nutrient-based soil amendment and not a fuel. It is imperative that nitrogen, carbon and minerals are not converted to air pollution through thermal processes when we are loosing so much topsoil every year and it takes hundreds, if not thousands, of years too regenerate those resources as soil.

We have a policy recommendation: please phase in clean technologies first, not disposal technologies for wastes.

It is imperative to provide the research and development for pilot projects to establish regulations for new and emerging technologies.

Many of us were shocked at a works committee meeting at Toronto city hall a few weeks ago when some company claimed they would provide a gasification process for all the city of Toronto residual waste from garbage processing. No technology can be called "emerging" starting at 400,000 tonnes a year, but this is what they were claiming. Not only was this taking the technology for granted, it was also taking the host community for granted given the long-term problems already inflicted on the South Riverdale community and the port land from 100 years of industrial abuse and pollution.

We support the establishment of a specific alternative fuel/research development program. This would protect large users, such as municipalities, who are not equipped to do research and development from wasting tax dollars on projects that get a hard sell but end up becoming serious financial risks, lacking approval by the province for regulations and monitoring requirements. This happens too often. We have witnessed many regrettable pilot projects and expensive contract buyouts when they fail.

A serious protocol is required to be set up by the province to ensure that emerging technologies emerge at the scale and with the regulations required to ensure that public health is not compromised. The first option that the city should be obliged to look into would be recovering methane from a digestion process. This would reduce the mass significantly while at the same time producing a cleaner fuel.

Criteria for research and development should be designed to prevent municipalities from being exploited by adventurers. Municipalities do not have the in-house knowledge or experience to undertake research and development. This is much better done by industry and technology leaders, coupled with university researchers, to develop the best applications for available resource recovery and fuel development for energy. This also allows time for proper regulations and a monitoring protocol.

(2) Incentives, energy conservation and new energy partners: the very best energy source is conservation. Credits for conservation belong not just to the energy generator but also to the person or corporate body providing and paying for the devices. If Home Depot were to sell and install a solar panel, they and the owner should get some sort of credit, renewable every five years if the panel is still operational. It would be interesting to have computer sales companies or Bell install the computer hardware or services and the solar panel to power it all at the same time.

The beer industry could get energy credits for a "trade in your old beer fridge" replacement program and probably lower the electricity bill in every third house in

the province, including cottage country. The soft drink and beer companies have these fridges with replaceable fronts that look like canned product that they could retail. The beer stores take great pride in their reuse and recycling programs and might find energy credits a good incentive.

Your MUSH sector would be a good market to focus for major conservation because they represent huge energy users under single administrations, paid for in tax dollars. The biggest users on the Toronto grid, for example, are the University of Toronto, with 40,000 people on campus, and the city itself, the sewage treatment plant being its biggest take off the grid.

(3) Wind turbines, alternative energy and the environmental movement: there is a need to bring back the criteria we used to have for projects that might be exempted from the environmental assessment process. Appended to the back of the top eight things I handed in is an extract from the old exemption criteria.

The assumption that all green energy has to be accepted without qualification or impacts is not acceptable. This is what has happened with the siting for wind turbines on the Toronto waterfront. In particular, we take issue with the turbine that has been approved for the Ashbridges Bay sewage treatment plant site. Aside from the fact that it happens to be sited at the intersection of two North American migratory flyways, it also happens to be smack in the middle of the next space available to expand the Ashbridges Bay treatment plant to accommodate the waste water treatment needs for another one million people, according to the new official plan. Wind turbines are sensitive to nearby land uses and structures that create different types of air temperatures or may block the wind.

It is difficult to imagine anything more inefficient to the planning of a sewage treatment plant expansion than to have a huge structure with a deep base that will have to be tunnelled around for pipes and tankage and compromise what can or cannot be built. It is our studied opinion that new energy technologies such as wind turbines, however green they are, must respect the function and efficiency of utilities and not simply assume that all utility sites are available for them.

Research and development is required to find wind turbine technologies other than these huge industrial-scale monsters that may be better suited for urban use. We point out that we already have a lot of tall buildings. Maybe they could go on top, or numbers of smaller turbines could be mounted on the sides of downtown tower blocks like satellite dishes and take advantage of the wind tunnels we have already created at Bay and King.

We understand that NASA has a GIS plan that identifies the best sites for wind generation on the planet. These should be located and addressed first.

The dilemma with wind turbines will require more consideration than is currently being demonstrated. There are two schools of thought on the environmental front. One group is focused on reduction and elimination of toxics in the environment. The other group is dedicated to conservation activities. Conservation includes preserving many aspects of the natural environment, including birds, habitat and countryside.

We realized this dilemma when the Toronto Renewable Energy Co-op conducted what amounted to a pathetic site search in Toronto. Besides the unfortunate and unwindy choice of the Ashbridges Bay plant—it was 11th out of 12 in their sites—they also considered Colonel Sam Smith Park, a small protrusion of land in Etobicoke that had been fought for for over a decade by locals to put back some small piece of habitat in that part of the waterfront. The wind turbine co-op decided it was perfect for them. Fortunately, that did not go forward.

Siting turbines will continue to present problems for communities. Given that one turbine is hardly worth the effort, there is always the fear that one will lead to a dozen more nearby, and who knows what after that—a mess.

It has happened in California that wind generation is basically an unreliable form of energy, requiring backup by another fuel source to guarantee that the energy will always arrive on the grid. Although wind power seems like a very nice idea, it is not a passive land use, physically or visually. So although everybody likes the concept of green power and wind, it is not progressing the way it should at this time.

Emission trading: one problem we wish to point out is that this system has the potential to backfire when a number of industries are located in the same old industrially zoned areas. Some neighbourhoods have had over 100 years of industrial abuse. The land is poisoned, the people have higher rates of morbidity etc, and still the proposals get bigger and continue to grandfather the emissions and health risks. Along with emission trading, there must be some siting criteria that do not allow credits to create unacceptable risks to the environment or to animal and human populations. Any emission credit should be a nominal one-time credit or renewable after a five-year review to prove the initiative is still operational.

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We often come across situations where companies or industries have been given certificates of approval and there is no review done to know if their equipment has been updated or their emission control devices have been upgraded in a way that reduces emissions; they may in fact be creating more. So we have been living with the bad experience in Toronto of a lot of grandfathered land use.

The Chair: Thanks very much for your presentation. We have approximately two minutes per caucus, beginning with the government side.

Mr Hastings: Ms Shinn, I appreciate your concerns over wind energy, particularly with the Etobicoke venture and probably the one at Ashbridges Bay. But we as a committee saw, in my estimation as a layman, a very well-sited, well-mapped-out example producing nearly 300 megawatts of power at Pincher Creek, Alberta, a few days ago. It's the newer technology, computer-based.

The only problem is, as usual, Canada is the net importer here.

My question to you is, given that the siting and mapping in Alberta was done, I believe, under environmental assessment statutes in Alberta, would you still have these strong reservations about wind power if you didn't have your experience with the Ashbridges Bay experience? As well, statistics from StatsCan show—I could stand to be corrected on this as the source—that the number of birds killed in the Pincher Creek situation in southwest Alberta was minimal. I can't remember; it was infinitesimal. One bird, in your estimation, would be one too many, I suspect. But at least they had made a very coherent, strong effort to ensure that wildlife, birds especially, was not a casualty of that new technology. Your comments, please.

Ms Shinn: I'm glad that in Alberta they actually did an environmental assessment. Here it was exempted from the provincial environmental assessment. They conducted a federal EA because it was on the waterfront. This happens to be one of the very few sites, at Ashbridges Bay, where you actually have the intersection of two migratory flyways, one that comes in off the lake from the south along the Leslie Street spit and then the shoreline migration that the raptors use. To us that really stank that they could just put it there and then somehow say, "It's only going to kill one or two birds." There has to be some respect for the airspace, if you like, that is used by migratory birds. We know from records at Ashbridges Bay that the sky used to be black with migratory birds for days on end not even 100 years ago, within a lifetime. We don't have that any more.

If we begin to discredit the validity of preserving these flyways, we are asking for trouble. I do think there are many, many spaces in Canada that would be suitable for turbines. Myself, if I were to look at the sewage plant, I could probably think of a number of ways we could produce as much energy by simply making our sewage plant more efficient, using that property more effectively, rather than siting a turbine on that property. I am concerned about the exemption that this was given; otherwise, the migratory fly routes alone would have identified this as a caution.

The Chair: Thank you very much. We'll move on to the opposition.

Mr Bradley: The proponents of wind power have asked for special consideration under the Environmental Assessment Act dealing with the issue that you have raised with us, saying they shouldn't have to go through the same hoops that perhaps production of other kinds of power would have to go through. Do you believe they should have exactly the same rules as other methods of producing power?

Ms Shinn: I think they should have a lot of similar criteria, especially on the siting issue. The other problem is that if these large, industrial-scale turbines are not redefined in terms of the kinds of communities they're being put in—I think we have not seen the generation of urban turbines that we could have that would integrate in our current land use in the city. These enormous turbines are being imposed on us—the bigger, the better—when in fact I'm not convinced, and I'm a graduate in art and design, these have been thought out in the context in which they want to plonk them down in the city of Toronto, for example. I do think that we are going to have a growing backlash from the conservation movement, the long-standing, hard-working, elderly people in many cases who literally have fought for a generation to get small bits of habitat preserved that are now going to be targeted as sites.

I'm very concerned about what this is doing without some criteria for siting. I wouldn't exempt them from the whole act.

The Chair: Thank you very much for coming forward and presenting to us.

ENSYN TECHNOLOGIES

The Chair: Our next presenter is David Boulard, vice-president of finance, Ensyn Technologies.

Mr David Boulard: Thank you very much, Mr Chairman, and thank you, members, for taking the time to meet with me. I'll start by just reading the mandate that I fit into with respect to this committee to kind of put it into perspective. The committee's mandate was "to investigate, report and recommend ways of supporting the development and application of environmentally friendly, sustainable alternatives to our existing fossil fuel sources."

What I'm going to present today is in fact that: an environmentally friendly, sustainable alternative to an existing fossil fuel. Twenty minutes isn't very long to give good detail as to the progress we've had with this specific technology, but I'll try to focus it quickly.

The first slide in the package I've given you—I've put the slides at the front with some reading material and some technical material—basically outlines the four biomass conversion technologies. I believe three of them have already been presented to this committee. The first technology is direct combustion: that's where you take biomass—being wood, agricultural residues and other renewable types of agricultural products—and you direct burn them in fire; for example, wood in your fireplace.

Biochemical conversion is conversion using enzymes, such as the production of ethanol, where you take a feedstock such as corn and you add enzymes to it to break it down, creating a gas, which is ethanol.

Gasification was mentioned. Gasification is simply the vaporizing and then combusting of biomass products.

Today what our focus is, and what I believe this committee has not heard, is that there's a fourth technology, which is called "pyrolysis." Pyrolysis is effectively the liquefication of biomass.

Quickly, by way of summary, on the second slide, Ensyn Technologies is an Ottawa company. This is an Ontario-grown technology that we're talking about today. The main members, Dr Robert Graham and Barry Freel, were educated at the University of Western Ontario.

They took their background and their Ontario education and applied it to very interesting technology. Through research and development, and a lot of hard work, they commissioned a first plant in 1989. Unfortunately, that plant was commissioned in the United States as a result of different commercial and industrial partnerships they had made.

The technology I'm talking about today is a commercial technology, and I want to make that clear: this is not a research technology, it's a commercial technology. You may ask, "Why haven't we heard about this before?" I trust I'll answer that question later.

Skipping briefly to the technology, what is the technology? Effectively, what we do is a very quick heating of biomass material. What happens is that the biomass—for the purpose of illustration, we'll take sawdust or wood waste residues from forestry companies; we could also take agriwastes, cornstovers etc. What happens in this process is that it is quickly heated and vaporized. The carbon remains behind and the vapours are carried to condensing towers. The condensing towers do what they're supposed to do: they condense the vapours into a liquid.

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It can convert a variety of feedstocks into fuels. Basically the yield of this technology is, for example, that it takes a ton of material and produces three quarters of a ton of liquid. It's a very quick process that has an extremely high liquid yield. The other by-product streams are gas, which is used within the process itself, as well as a carbon material which can be used for either filtration purposes or as an energy supplement as well. This is included in a chart within the material I've handed out.

You may say, "Why the benefit of a bio-oil type of material?" One of the difficulties we've had with renewable types of projects is the ability to adapt conversion or generation equipment to use the material itself. The other thing is that with renewable sources you also have the difficulty of having a mass of material in a remote location that cannot be easily transported to a market where it can be used. What bio-oil does and what our process can do is it's a very modular process. It can be located in varying degrees of size. It can be located on-site where the feedstock is. The feedstock can be processed on location and the bio-oil can be transported. It can be transported in a tanker, whether rail or truck, to facilities that can use the material.

What we've got today are many forestry residue situations where forestry residues are not used, they are landfilled. You don't have to go up into northern Ontario to deal with forestry residues. You can probably go to the city of Toronto and determine what they're doing with city residues such as tree trimmings etc, where they're chipped. There are only so many chips that can be used in city gardens and parks.

The application of what bio-oil can be used for, of course, is in many degrees. What I look at, for example, is in the coal-firing utilities that exist today, high sulphur problems, a high degree of pollution issues. Through the introduction of a bio-oil supplement into these, you get a proportionate reduction in these types of emissions, as well as using a resource that's readily available, renewable and sustainable.

Currently we produce a little over five million gallons of bio-oil a year. A lot of it is used for energy applications. Some of it we've identified as high-value chemicals. So the economics of our process rely on two streams: (1) an energy stream, and (2) we've unlocked a revolutionary raw product stream that hasn't existed in the past. Believe it or not, one of the products that is derived from our system is in fact ingested. It's a grill flavouring for foods. Again, we produce a little over five million gallons of bio-oil a year, and that's a relatively small amount.

You will notice in your handout there is one of our standard facilities as well. It's running 80 green tons of feedstock a day. Again, you'll see its modular size with respect to the individual that's illustrated in the picture.

I've also included barriers and recommendations.

Again, 20 minutes isn't very long to try to introduce a new technology, but what I do want to cast on you is that there is another alternative renewable fuel to ethanol, to gasification, to direct burn, and it's pyrolysis oil. Pyrolysis is a technology that is commercially feasible and commercially proven, and I'd be happy to show you to a facility by which pyrolysis liquids are produced. The economics of a pyrolysis facility—we've been fortunate to be able to drive an energy component as well as a commercial product component. It's real and it's alive today.

The barriers and recommendations I will not voice today, but they are clearly outlined in the presentation. I will note that from the energy perspective it is a challenge. Where petroleum prices are where they are today, where electricity prices are where they are today, it's difficult on a renewable energy component to make the economics work.

I'd like to end my presentation there and thank the members and the honourable Chairman for their time. If there are any questions, I'd be happy to take them.

The Chair: We have approximately two minutes left per caucus.

Mr Bradley: You mentioned that not too many people would be familiar with this. I'll ask you a provocative question so you can give a nice answer.

Mr Boulard: Go for it.

Mr Bradley: Our committee will have a number of people come before it with what I refer to as the magic box that nobody has ever discovered. I can recall in a previous carnation—or incarnation, one of the two—being presented with a number of magic boxes that never really went anywhere. Why would the committee embrace yours? Give us another little plug on why the committee should embrace yours and perhaps include it in final recommendations to the government.

Mr Boulard: That's a good question. The reality is, I can do what I say. I'm not talking about a magic box; I'm

talking about an industrial process that exists that I can show you a 10-year history of. It's a process that has been proven, and we currently have five commercial units in process. I'm currently designing a 120-ton-a-day unit.

Mr Bradley: These are not demonstration, these are commercial—

Mr Boulard: These are commercial units. They have 90% availability etc. I could bring you down to see one. That's the distinction. I'm not talking about a product that I may be able to produce; I'm talking about a product I am producing. The distinction is the different applications. You will notice in your packages that these applications are extremely broad. I'm talking about a petroleum application at the same time. I think to answer your question, that's the distinction. I'm not talking a magic box; I'm talking a proven industrial process that's commercialized.

Mr Bradley: You mentioned that you may be able to use it in conjunction with coal-fired plants. There are a number of recommendations coming before this committee that would involve getting rid of coal-fired plants and replacing them with something else—gas-fired or something else perhaps. Does that eliminate a substantial use of your presentation or does it not?

Mr Boulard: Not at all.

Mr Bradley: Yours is very broad, isn't it?

Mr Boulard: It is very broad. I look at the coal-firing opportunity as being a migratory issue. If in fact it's in the best interests of this committee to recommend the elimination of coal-firing, there will have to be a migratory process in any case. What I'm offering is a solution whereby bio-oil can be utilized to improve the environmental impact of coal-firing facilities. In fact, we have coal-fired, and I've included a report in that regard in your package.

Mr Hastings: Mr Boulard, thank you for coming in. It's a very intriguing type of technology. As Mr Bradley says, you do get presented with things that would need a lot of investment, but here you already have a direct application. Give me a sense of the profile of the customers you already have. Would they be industrial users in a number of areas, large control-process operations in industry?

Mr Boulard: They are. Exactly.

Mr Hastings: Do you see this application of bio-oil being used in the transportation sector? I take it that it's not very widely advanced yet.

Mr Boulard: That's correct.

To answer your first question, yes, we do have industrial applications. What we have in Ontario is a lot of low-value feedstocks available that corporate Ontario and industry Ontario have to recognize and are pursuing ways by which they can add value to their feedstock streams, whether that's an agricultural process or a forestry process. We offer that. We offer the key to unlock that to an energy-efficient, less capital-intensive way to generate power for their industrial needs, whether that's steam or whether that's electricity through turbines.

1600

From your second point, we do foresee a transportation application. We have worked with Natural Resources Canada in this regard to try to develop an emulsion similar to an ethanol-gasoline blend, which would be a diesel/bio-oil blend; again, "bio-oil" used in the "pyrolysis oil" sense. That is still in the development stage at this point.

Mr Hastings: Give us a sense of the type of investment experience you've had to get this company to where it is. What kind of investment incentives do you think are required that this committee ought to recommend to the government to get this type of technology more into operation? Would you also address the emissions concern here?

Mr Boulard: To answer your first point, with respect to how to get this technology out, I think the committee needs to broaden—well, I should be careful there. This technology has application on an energy side beyond electricity generation. There's two fronts: using a low-value feedstock by generating power, power being whether it's steam power used for industrial purposes, a more efficient use of feedstocks or electricity generation.

What's easy to do is recommend and provide incentives based on kilowatt hours. I think a bio-oil type of incentive can go beyond that. It can go beyond that type of application.

Mr Hastings: So it would be a production-type credit.

Mr Boulard: Exactly, a BTU credit. Now, I recognize the pitfalls that exist in that regard with respect to direct-burn types of technology etc.

Mr Hastings: Limited to five years or three years, something like that, not going on forever?

Mr Boulard: Yes, that's right.

Now, with respect to the emissions, the emissions are interesting. We are a sulphur-free fuel; we do not have sulphur. We are also CO_2-neutral in the sense that when the CO_2 is released, it's reconsumed in a natural setting. When bio-oil is burned, there is relatively no particulate. I've also included in your package a more detailed analysis, because I don't profess to be an engineer on the emissions side, on the emissions regarding the bio-oil itself.

The Chair: OK, thank you very much for coming forward and presenting to us. We appreciate your thoughts and comments.

Mr Boulard: Thank you.

JENEL MANAGEMENT CORP

The Chair: Our next presenter is Michael Katz, senior vice-president, Jenel Management. You have a total of 20 minutes. After your presentation, whatever is left will be divided equally. Please state your name for the sake of Hansard. The time is yours.

Mr Michael Katz: My name is Michael Katz. The company I represent is Scientific Utilization Inc, out of

Huntsville, Alabama. The company is a very interesting company. It was actually born out of the old Reagan administration's Star Wars. When they were testing all kinds of entry equipment coming from outer space, they came up with plasmatron technology. As the years went by, it went by the wayside, and someone in Alabama recognized that as a potential. They came up with the study since 1992 and developed the first unit, which right now burns medical waste. From the medical waste, they generate electricity through synthesis gas.

The interesting thing about the synthesis gas is, the way it's produced, you're dealing with temperatures of anywhere from 10,000 to 18,000 degrees Fahrenheit. Basically, any raw material that goes through it at the end of the day comes back to the periodic table. Your main product is your synthesis gas, which really replaces natural gas in the operation of the turbines, as well as steam. So you've got the two generations, both steam and synthesis gas. I feel this is something that should be looked at as a potential technology for an urban society like Ontario.

To me, the most important part of this project is the coal gasification. In my presentation, you have all the technical information that you need. It shows you basically how the plasmatron operates. But more important is the fact that it is capable of producing 30% to 40% more burnable gas from the same amount of coal than conventional methods. But more important is the fact that there are absolutely no emissions to the environment. That is, I think, an important factor.

One of the things we're studying in the United States is replacing the coal-burning unit that exists now in conventional systems with this system. The biggest unit that we have operating currently is a 15-ton-per-day operation. It's a portable system. Right now, it is just burning, as I mentioned before, medical waste, but our coal-cracking operation should be in operation in Huntsville, hopefully within the next three to four months.

Basically, what I wanted to do is come up here and present this project. Rather than going through the technical, because this is all technical—I could bring the engineer here, but I think it's best, if you've got any questions, I'll be more than happy to answer them.

The Chair: Thanks very much. We'll start with the government side. We have roughly eight minutes per caucus. Mr O'Toole.

Mr O'Toole: Thank you very much. This is your presentation here?

Mr Katz: Yes, sir.

Mr O'Toole: I just had a quick flip through. We've all heard the black box comment. The whole idea of incineration has a long road to go. A lot of people basically stop there because when you burn things—and what you're doing is gasifying various things.

Just picking up on Mr Bradley's earlier comment, how would we sell something like this? The words "incineration," "burning" or whatever—and I know it's very technical. They say there are no emissions and all the rest of it, but how come it hasn't been picked up? I know you've got—

Mr Katz: No, it has been picked up.

Mr O'Toole: Yes, it has in the United States.

Mr Katz: Basically, what's really out there today, and it's all over the country, is called DC plasmatron, which is direct current plasmatron. The only thing that makes DC inefficient is just in terms of operating cost. When we came up with the alternating current plasmatron, it made it much more efficient. It brought the efficiency rating up to way up above 70%. It has really become more cost-effective and it's cost-effective that you can go into, say, sewer sludge, municipal waste, medical waste—anything that you can imagine that has some BTU content can go through this process. Just try to imagine: you're burning something at 18,000 degrees Fahrenheit. What's going to be left on the other side? You don't have to be a rocket scientist to understand that. Today, steel plants and coal plants are burning at anywhere from 1,500 degrees Fahrenheit to maybe 4,000 degrees Fahrenheit. Obviously you're going to produce oxygen, you can do the nitrogen and the oxides to the air. This has no oxygen in it at all at 18,000 degrees Fahrenheit. It eliminates any potential for developing any other chemical products. Basically what you're doing is you're reproducing the periodic table in its original element, and then obviously you're recovering that and then you sell that as an item.

Mr O'Toole: Is there any US federal government money in your project? Are there any subsidies of any sort?

Mr Katz: No, there are no subsidies. Basically we're working with some funds from the coal gasification project, the one that's in Long Beach, California. We gave them a hand with the technology they are doing over there. But there are no monies. We haven't asked for any money. So far, all of this has been developed by—I shouldn't say that. Let's face it. This whole technology was financed by the US government during the Reagan administration through their Star War programs. There is of course a lot of technology that's involved in here, but if you look at the names of some of the scientists who are involved in this, they paid their dues by working for the government for many years.

1610

Mr O'Toole: I guess you've got to convince me, not being a scientist myself—actually, the original question was, how do you sell this thing? Do you mean there are no emissions?

Mr Katz: How can there be at 18,000 degrees? It's all enclosed, totally enclosed. Right now we're working on two independent projects: one in Cambodia and one in Pakistan. Ask me why we're going to Third World countries. It's because, first of all, they have a huge amount of coal available to them and they're net importers of oil and are trying to avoid that. They're going to spend the money to generate electricity, which today runs—what is it?—close to $1 million per megawatt, whether you build a power plant by conventional means or even if you go a little bit more exotic.

So they're beginning to recognize this technology. Thank God this technology has been proven and you can see some governmental agencies, with the awards and the recognition and the study, so it should give you a little bit more information as you go further into this.

My intention here was just to present this project to you guys, but I'm hoping that if there is more interest, I will bring the scientists and more people up with me next time and be able to give you a full technical presentation. Today was meant only as a first step.

Mr O'Toole: It's fascinating. We had a sort of similar one from a Canadian company, I think down in your riding—that presentation from the paper company.

The Chair: You're referring to Norampac. I don't think it's quite to this level.

Mr O'Toole: No, not these kinds of temperatures, but it's the same sort of thing.

The Chair: It's how they're destroying their Dombind.

Mr O'Toole: Yes.

The Chair: I think this is the next step, this technology.

Mr Katz: I hate to use the expression "Star Wars," because when I was a kid growing up in those days, 22 years ago, it sounded to me like—it was an absurd statement. But it's reality. The United States government spent a lot of money analyzing all those different potential processes and today they can be applied and are being applied to commercial uses.

Mr O'Toole: Just one, if I may?

The Chair: Certainly.

Mr O'Toole: The whole idea of, for instance, if you change the theory from landfilling and dealing with waste in other ways, that's sort of contradictory to the way we do business today. It's reuse, recycle and the three Rs scenario. This thing here has a dedicated waste stream and that sort of reverses the current methodology. You could take garbage and burn it, from what you're telling me.

Mr Katz: Correct, but you're still going to have the metals. You're going to have the metals, but they're going to be in their atomic state, so you're still going to be able to sell it. You're not totally throwing it out the door. You're still going to have the steels, you're still going to have some of the raw material, but the majority of what you're going to produce is going to be what we call synthesis gas. Synthesis gas is primarily similar to natural gas.

Mr O'Toole: Thank you.

The Chair: We'll move on to the official opposition. Oh, did you have a question? I'm sorry. There's still time left if you want to.

Mr Hastings: My question to you, sir, would be, I guess, what amount of energy do you require, megawatt-wise, to get to 18,000 degrees temperature to destroy these compounds and all the other stuff that you're eliminating—medical waste, that sort of thing?

Mr Katz: If you're going to produce, let's say, a 1,000-megawatt plant, if that's your intention, for that amount of tonnage, you will probably lose about 10% to 12%; 10% to 12% of your full megawatt will go back to operate your plant. But you still have 88% to go out to sell to the grid or to whoever may need it.

Mr Hastings: It was a thought I hadn't given a lot of consideration to, by a professor of renewables at the University of Victoria in British Columbia. He said that one of the things this committee ought to be looking at in terms of energy policy development is how much energy you are utilizing in the development of whatever it is for what you're producing—the end product. The thing he used, and I found it rather startling because I'm a firm believer in them if you can get them right, was photovoltaic panels. He used that as an example. So this to me would be maximizing your energy inputs to get your outputs tenfold, fifteenfold. I'm not saying it's inappropriate, but is it an effective use of capital, I guess?

The Chair: OK, with that statement, I think we have to move on to the official opposition.

Mr Bradley: In its broadest terms, would it be fair to define your area of endeavour as clean coal technology?

Mr Katz: In addition to everything else, yes.

Mr Bradley: Would you say its primary use, at least in the production of electrical power, would be in coal-fired plants?

Mr Katz: A coal-fired plant would be one. Municipal waste would be another. I'd be interested in typical municipal waste. Then we go into industrial waste, but coal would be a very good part of it, sure.

Mr Bradley: If you were to apply it to municipal waste, for instance, would it not have the effect of being a competition, in terms of that waste being a competition, for what Mr O'Toole referred to as reduce, reuse and recycle? In other words, the people who want to burn garbage, it seems to me, want some of those same materials that would ordinarily be reduced in the first place or reused somehow or recycled. So aren't you competing for the same stream?

Mr Katz: Not necessarily, because one of the projects that we have is where we combine coal with municipal waste to increase the BTU content. So if you've got a recycling program, let's say, in the city of Toronto that already takes care of glass and aluminum and paper and so forth, we're talking about the raw material that you're going to dump in the site. If you were to recycle, there's no problem with that. If the BTU content of the garbage that goes into the disposal sites—that's all we're discussing here. We're not discussing any renewables. If you already have a program of renewables, you can continue that.

Mr Bradley: The other questions would be pretty technical, I suppose. I won't get into the technical aspects of it. I guess I'll leave it at that.

The Chair: Thank you for coming forward with your presentation.

It's my understanding the next delegation is going to be a request to go in camera. Prior to going to that, I wonder if we could have a small discussion on tomorrow's schedule. Just before that, I know there was concern a while ago, when I went to the Liberals, on a

single question. It was in the morning. With Enbridge the Liberals had the only question, with Burkhard Wegner the Conservatives had the only question, and so then I rotated back. Is that—

Mr Gilchrist: Obviously I believe you, Chair.

The Chair: OK. Thank you very much.

Mr Gilchrist: An honourable member, always.

The Chair: I just wanted to make sure you understood what I was doing as Chair.

Mr Bradley: I was surprised, frankly, you were being challenged on that.

The Chair: I'm challenged regularly.

Mr O'Toole: Mr Chair, now that we're commenting administratively, I'd just like to draw to the members' attention the IPPSO producers earlier today, Jake Brooks and that group. The January edition of their magazine, IPPSO Facto, is an absolute must-read for the committee. It covers all the issues we've been talking about, and I just thought we could have spent more time with them. They're absolutely paramount reading.

The Chair: I do want to have a second look at that. Thank you very much, Mr O'Toole.

Tomorrow we have laid out from 10 o'clock until 12:20, and in the afternoon, what was originally scheduled is to discuss the possibility of touring other facilities in Ontario, particularly in the Toronto area, what you want to do with the Navigant report and members' briefings. It's my understanding there's a possibility some members may want to get away for a function tomorrow afternoon.

1620

Mr Gilchrist: Not only that. If I could speak to it, Chair, three of us on this side have a conflict that, because we're running late in the morning, poses a great problem for us. I wonder, to provide a more fulsome debate, if we could arrange next week to spend a full day on the three topics that you've raised, or at least allow that much time.

The Chair: There's an issue that Mr O'Toole and myself have with the finance committee. It's meeting for the next nine days straight, which adds to our difficulty.

Mr Gilchrist: That would suggest that any discussion of possible site visits would also be moot.

The Chair: That would have to be moved into March.

Mr Gilchrist: Should we simply schedule a day for the meeting of the committee and allow you to select the first day after your other conflicts are resolved?

The Chair: Would the committee consider tomorrow at 12:30 for addressing the Navigant report for its possible release?

Mr Gilchrist: That's the time we have a problem, though. Three of us already have a conflict starting at noon, actually, so we're already somewhat compromised in terms of our scheduling. We had incorrectly anticipated the morning session would end at noon. Another august body is meeting in this building at that time.

The Chair: I believe Mr O'Toole has a delegation until 10 o'clock tomorrow morning.

Mr O'Toole: Yes, I think I have one with you, don't I?

The Chair: Somebody has made arrangements with you and I'm introducing them.

Mr Hastings: Mr Chairman, I've been very patient, and I think your Vice-Chair has as well. We have some members' reports. I've already submitted mine. I would like to know when they're going to get discussed then—at the end of March, or what? It's already been put off twice. This will be the third time. Are we going to have a fifth time?

The Chair: This is why I'm bringing it up. I'm at the pleasure of the committee.

Mr Hastings: Can we make the members' reports tomorrow morning? That's not possible?

Mr Gilchrist: We have people scheduled all morning.

Mr Hastings: Then it looks like it's going to be late March before this thing is going to be dealt with.

Mr Gilchrist: Might I suggest that anyone who is interested in those reports has the opportunity to read them and digest them.

I'm happy to meet Friday if the committee is so inclined. But we already have, as I say, a problem. If we're starting our other event late at 12:30, it poses a problem of coming back. Plus you've raised the issue—

Mr Bradley: Are we invited to the other event? Is anybody else invited?

Mr Gilchrist: Actually, there are a number of industry folks coming in and making presentations to another committee. So it isn't something that we have the discretion to simply change our—

Mr Bradley: It's not Charlton Heston speaking at a lunch or anything?

Mr Gilchrist: No, it would be the Red Tape Commission.

The Chair: May I make the suggestion that the subcommittee meet as soon as possible to make plans for future meetings?

Mr Gilchrist: Absolutely.

Mr O'Toole: I would only put one last thing on the table, if I may. During the March break, the teaching school break, I'll be away, only because my wife's a teacher and I have to pay some respect. So I wouldn't schedule anything that week if we can avoid it.

Mr Gilchrist: As a member of the subcommittee, I certainly give you an undertaking that we will keep in mind the March break.

The Chair: In view of the problem we're going to have with attendance tomorrow afternoon, the three items on for tomorrow afternoon—tour of facilities in Ontario, release of the Navigant report and members' briefings—we'll direct the subcommittee to arrange for a convenient date. In order?

Mr Hastings: Not subject to further change then?

The Chair: I hope you're right, Mr Hastings.

Mr Hastings: I won't hold my breath.

The Chair: It's my understanding that there may be a request to move in camera. Hearing none, then—

Mr Gilchrist: If you expect it from a member, then I would make that motion, that the committee move in camera for the purposes of hearing the next presentation.

The Chair: Then I think we should know why we have to move in camera, for the benefit of the members.

Mr Gilchrist: Quite simply, because we're being given, to some extent, advance notice on technology that has not been made public yet, in the interest of the committee having as comprehensive an idea of the available technologies out in the marketplace. The alternative would be to defer this presentation potentially to a point beyond which we wouldn't be able to assimilate it in our updating of the draft report.

The Chair: Thank you.

Interjection.

The Chair: Thank you very much. Motion carried.

The committee continued in closed session from 1625 to 1708.

The Chair: Thank you very much. We've now moved out of camera. Is there any report? There's no report. The select committee on alternative fuels now stands adjourned.

The committee adjourned at 1708.

SELECT COMMITTEE ON ALTERNATIVE FUEL SOURCES

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Mr Doug Galt (Northumberland PC)

Vice-Chair / Vice-Présidente
Mrs Marie Bountrogianni (Hamilton Mountain L)

Mrs Marie Bountrogianni (Hamilton Mountain L)
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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)
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