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**Official Report  
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**Tuesday 29 January 2002**

**Journal  
des débats  
(Hansard)**

**Mardi 29 janvier 2002**

**Select committee on  
alternative fuel sources**

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

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LEGISLATIVE ASSEMBLY OF ONTARIO

**SELECT COMMITTEE ON  
ALTERNATIVE FUEL SOURCES**

Tuesday 29 January 2002

ASSEMBLÉE LÉGISLATIVE DE L'ONTARIO

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

Mardi 29 janvier 2002

*The committee met at 1005 in room 151.*

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

BIOX CORP

**The Chair:** Our first presenter for today is Biox Corp, Mr Tim Haig, president and CEO. I see you have your projector all rolling there and warmed up. Maybe just state your name as you begin, and your company for clarity for Hansard. You have a total of 20 minutes. What you don't use in your presentation will be divided between the caucuses for questions and comments.

**Mr Tim Haig:** Thank you, sir. My name is Tim Haig, president and CEO of Biox Corp. About five months ago today, we had the opportunity of speaking to the select committee about biodiesel. Some of the points I'm going to go over quickly, but hopefully my presentation will be short and to the point so that we could have some clarity on some of the issues.

Also, there's a black pack in front of you. On the left-hand side are the slides, if you wanted to follow along. On the right-hand side are some support letters from different people, plus a business plan that was put together by Maple Leaf Foods and Biox about the possibility of a biodiesel plant in Ontario. So I'll just go forward from there.

What I'd like to cover in the briefing is, first, what are we asking from this committee; asking this committee to do for us, in other words? What is biodiesel? I'll recap it again. Is it real? I'll go over the emissions from biodiesel, because there were some questions the last time about the emissions, and I just want to make sure there's some real clarity on that. What are other markets doing with biodiesel and for the biodiesel industry? I'll repeat, what do we want from this committee? I think it's important to cover that again. What does Ontario get in return? Then I'll summarize.

What do we need from this committee? Yesterday, you would have had a presentation from ADM, one of the largest producers of ethanol worldwide and one of the largest producers of biodiesel. Their message was exactly the same. You will hear also later on this afternoon from the Ontario Soybean Growers, and their message is the same. What we need is tax parity for biodiesel. Tax parity with what? Tax parity with ethanol, compressed natural gas and propane. What does that mean? That

means a provincial road tax exemption to the year 2010 on 14.3 cents a litre. That is similar to what is happening right now with ethanol, compressed natural gas and propane.

In the longer term, we hope and expect to get further mandates of volumes, as other jurisdictions are doing, but firstly we feel it's important to create supply before we're able to drive demand, and I think that makes sense as far as the economics are concerned. Federally, just to point this out, the excise tax is being considered presently within Paul Martin's office.

I'll highlight again, what is biodiesel? Firstly, biodiesel is a renewable fuel made from vegetable oils and animal fats. I have some examples of what we have done here as an example. There needs to be no change to the diesel engine. I have to repeat that: there's no change to the diesel engine, unlike other renewable fuels, propane—propane's not a renewable fuel, but other greener fuels, propane and ethanol. At the higher levels, you would have to change the way the engine performs. There is no change to the diesel engine. It is not an energy-intensive process, so it is indeed a clean alternative. This is part of the shameless exploitation of the Biox name. We are here to change the economics of biodiesel and to bring it to market in its fruition.

Is biodiesel real? Firstly, in the year 2001, the European Union produced and used 300 million gallons of biodiesel. In the United States last year, they produced and used 35 million gallons. The projections are as follows: by the year 2016, the US expects to produce in excess of 800 million gallons. The Department of Energy has gone on the record to say they are in support of six billion gallons by the year 2020. That would be 15.5% of the diesel consumed in North America, and that is indeed possible to do. Currently in the United States and in Canada, there are more than 100 fleets using biodiesel and there are more than 65 million kilometres logged. So this is not a fringe fuel; this not something that has not been tested.

When we look at emissions, all of the regulated emissions are significantly reduced: particulate matter, carbon monoxide, sulphur dioxide etc. In some feed stocks, NO<sub>x</sub> is slightly higher, but a lot of them are lower, essentially no sulphur, nitrogen or aromatic compounds. It is 11% by weight oxygen, so it burns more completely, so particulate matter is significantly reduced. When we look at greenhouse gases or global warming, there's an 80% reduction on the same life-cycle costing for the

same volume of diesel. This is a significant saving. When we think about significant reductions in cancer and other birth defects, they have put down that diesel and other aromatics are contributing to that where biodiesel would not.

**1010**

If you look at other driving forces in the States, there are two or three significant bills. I've highlighted a couple of them. I believe yesterday you heard a lot more. There's a bill, the Hutchinson-Dayton bill, which is looking at the tax exemption. Right now in the United States they have a production incentive of \$1.20 per gallon. That works out to 55 cents a litre Canadian. We're asking for a paltry 14.3 cents to help get an industry underway. Again, I want to state for the committee what we're looking for. We're looking for tax parity initially and mandates later on.

What does Ontario get in return?

First and foremost, rural development: you have to think back to when ethanol was coming back into the market. There was a really good study done by economists in Ontario stating that 85% of the revenue that is produced by an ethanol plant is spent within 85 kilometres of that plant. This is the same kind of thing that could be done here.

A more stable agricultural market: you may or may not be aware that the rendering community, the people who process animal fats, is under severe pressure economically. Therefore, getting this stuff back into the market is very important.

I highlighted urban smog reduction, and global warming reduction.

First and foremost, as far as we're concerned, it will help develop a new industry within Ontario and Canada. We are a unique company. We have the newest technology. Our nearest competitor is 35 cents a litre for the production of biodiesel. We are 7.5 cents a litre for the energy and chemicals for producing biodiesel.

This happens to be the picture of a plant which we could put in Ontario. We could have this up as early as the summer. This is a 65-million-litre plant. It would be the world's largest biodiesel plant. If we had the Ontario tax exemption, we could get underway and this could indeed be in place. This plan in the back of the portfolio is a plan highlighted between Rothsay and Biox, going on the record that we'll spend our own 15 million bucks to put this in place if we have the tax exemption. I think that covers that.

In summary, market drivers are perfect for biodiesel right now, economics-wise and environmentally. The Biox process is set to change the economics. It is a Canadian technology, homegrown at the University of Toronto.

Ontario needs tax parity for biodiesel for this industry to stay in Ontario. There are all sorts of reasons why we could be moving this to the States if need be, because they already have the infrastructure in place.

Biox and Rothsay are now on the record as saying that we are ready to build. This committee, as I say, could

help launch a new market, and I'd like to ask that this action could be done immediately.

That's in summary. Thank you for your attention. I think I've left myself some time for a few questions and answers.

**The Chair:** Very adequately. We have about five minutes for each of the two caucuses.

**Mrs Marie Bountrogianni (Hamilton Mountain):** Thank you for coming again. I enjoyed your last presentation as well. I was fine until the last part when you said you may be considering going to the States because of the infrastructure. Besides what you've already stated, is there anything else this committee should consider to keep you here and to keep companies like yours here?

**Mr Haig:** We're ready to go. Maple Leaf Foods is a triple-A-rated company in Ontario, one of the biggest. We're ready to start fabrication. We're ready to get going, but the economics aren't right in Ontario. Without some incentive to make—we are very close to being on par. We are the only technology that could be on par worldwide with biodiesel, with some assistance. We're asking for a provincial road tax reduction of 14.3 cents a litre. I highlight that other fuels like compressed natural gas, ethanol and all these things have it already. I can't understand why such a great fuel would not get the same respect. We'd be ready to get going and I promise you we could have the world's largest biodiesel plant in place in Ontario by the end of the summer. That's as clear and categoric as one can get.

**Mrs Bountrogianni:** Thank you.

**Mr John Hastings (Etobicoke North):** Mr Haig, you present a very seductive case for public policy-making, but let's examine the financials here. You say the plant would cost \$50 million.

**Mr Haig:** Fifteen, one-five.

**Mr Hastings:** Canadian?

**Mr Haig:** Yes.

**Mr Hastings:** If you went to Iowa or Illinois, and any of those two states, as examples, have the tax treatment you're looking for, what would your cost be, approximately?

**Mr Haig:** The cost of the plant?

**Mr Hastings:** These are US dollars.

**Mr Haig:** It would be about the same. We intend to fabricate these in Ontario and deliver them worldwide. If I go quickly back to the picture: we intend and we would like to build that plant in Ontario. It would mean 75 jobs in the Brantford area. We could deliver this worldwide. The plant would be the same price in the States. The difference is, they're getting a \$1.20-a-gallon production incentive.

**Mr Hastings:** Well, offset that with the so-called Canadian dollar, that used to be worth a dollar.

**Mr Haig:** It works out to be 55 cents Canadian per litre. That's what the incentive is presently in the United States—presently.

**Mr Hastings:** OK.

**Mr Haig:** Part of me thinks I'd like to keep this in Canada. We developed it at the University of Toronto. Why not start this here? A simple question.

**Mr Hastings:** I tend to agree with you, but I'm not stampeded. That's not to say we don't need it, but we're international now. Boundaries are nearly meaningless in terms of economics. I still think we would like to have it here, but there is another problem that I think we need to have some numbers on, that you need to submit to the consultants, and that is the efficiency and effectiveness of this fuel compared to what the OTA was here yesterday trumpeting again, that low-sulphur diesel will be just as effective in terms of the emission of pollutants by 2005. What we need to make good sound public policy are numbers from you, from your organization—

**Mr Haig:** I will happily do that.

**Mr Hastings:** —to give to our consultants to challenge the OTA submissions on two occasions—last August and yesterday—that everything would be great if we would just go on the diesel option and not on bio.

**Mr Haig:** I appreciate their position.

**Mr Hastings:** Because they said bio will foul up their capital assets.

**Mr Haig:** All of the engine manufacturers are on the record as giving warranties for biodiesel. I understand what the OTA is saying and I support the OTA—

**Mr Hastings:** I'm not taking their case up per se.

**Mr Haig:** I appreciate that. I appreciate what you're saying, sir. I think what is important is that the OTA would be willing to—as long as they didn't have to pay a premium. Their concern as truckers is, "Am I going to have to pay a premium for this fuel?" I'm saying they will not. All of the engine manufacturers, all of the pumps and the fuel injectors that Stanadyne and Bosch are on the record as warranting—and a couple of them have gone further, to promote the idea of the use, because at low-sulphur diesel the lubricity of that fuel is going to be in bad shape. One of the great things about this fuel is that the lubricity is up.

It's easy. I'll put a set of things together for your consultants—absolutely straightforward. That's an easy challenge. Thank you for the challenge, sir.

**Mr Hastings:** I think you also need to make a submission to the standing committee on finance and economic affairs regarding our budget in 2002.

**Mr Haig:** We have.

**Mr Hastings:** If you already have, very good.

**Mr Haig:** We are there and so doing.

**The Chair:** We're almost to the five minutes. If everybody is comfortable, I could let a couple of the other government members ask some questions or make statements if they would so like to.

**Mr Steve Gilchrist (Scarborough East):** Forgive me for coming in late in your presentation here. We've seen a number of reports from different companies around the world that there are already additives that can be mixed with diesel fuel to allow it to be used with ethanol, otherwise the two products separate.

**Mr Haig:** Yes, that's a good alternative view.

**Mr Gilchrist:** Given that ethanol is just as environmentally benign, do you have any suggestions to the committee in terms of a relative ranking between the merits of an ethanol strategy or a biodiesel strategy?

1020

**Mr Haig:** I actually think they're on a par. I think the ethanol fuel is great, so I'm not poking at my other renewable friends. I think the unfortunate thing is that ethanol is more expensive than biodiesel. It's going to be difficult to be on a cost parity. The maximum you can mix is about 6.5% to 7% in volume before they separate. I think there are going to be some fantastic opportunities for ethanol and biodiesel both to be mixed with diesel and make it an even cleaner fuel. There is absolutely no question that ethanol is a great particulate reducer. It's a great oxygenate, as biodiesel is.

So I think this tax position—it sounds like I'm letting them eat our lunch, so to speak. But I welcome the fact of more renewable fuels mixed with diesel, and I would welcome this committee's saying, "Let's have renewable fuels mixed with diesel." Not just biodiesel; I open it up to renewable fuels mixed with diesel. That would help, because there's already supply in Ontario and that would help us launch it, so I absolutely welcome that. I think it would be encouraging to do so.

**The Chair:** If I can just make a comment, there seems to be, as I talk to some of the industry, a bit of resistance to move in that direction. I understand that vegetable oils will sort of cleanse the system in the tanks and they end up getting filters plugged. Do you have any plans from your side to improve this image? It's really positive out there, but I don't think the current trucking industry feels it's a positive one.

**Mr Haig:** I think the current trucking industry in Canada doesn't feel it's a positive one. I think you'll find in other jurisdictions there are some real reasons for it. Most engine manufacturers, as I said, are promoting it because the engine is cleaner. Yes, the first time you'd use it you may have fouling of the fuel filter. They change those things every couple of weeks anyway, and they change them on the road, so the truckers are not worried about that. Their engines are running cleaner and better. Let's face it, that's stuff that would be going through that filter, getting burned in the engine and we would be breathing it. It's probably better that we clean out those engines with some biodiesel and have less particulates that we collectively are breathing. That's the position we have.

Yes, it does have a solvency effect, and all of the engine manufacturers welcome that solvency effect. It's not something we should be concerned about. It's one of those things that is a good thing about biodiesel.

**The Chair:** It was just the image that I was concerned with.

**Mr Haig:** I appreciate that.

**The Chair:** We've also heard from some others, like the taxi companies yesterday, and I think we're going to hear from them later today, trying to go to a cleaner fuel and not working as we kind of anticipated to begin with. There are some difficulties there.

**Mr Haig:** I appreciate that. They are difficult decisions you have to make.

**The Chair:** Thank you very much for your presentation. It was very concise and informative. I appre-

ciate your coming before the committee to assist us with our deliberations.

GREEN ENERGY COALITION  
TORONTO RENEWABLE ENERGY  
CO-OPERATIVE

**The Chair:** Our next presenter is from the Green Energy Coalition, David Poch, and I need some direction from the committee. Apparently the third presentation, Brian Young, will not be coming, and Mr Poch has asked to do both presentations, which would be a total of 40 minutes rather than 20 minutes. Doing one on each has been the request. I'm in the hands of the committee. It's a variation from what was established.

Do you want to do one presentation and call it 20 minutes, and then the second presentation? I'm in the hands of the committee.

**Mr Gilchrist:** It does set a precedent, Mr Chair. We've limited very large groups to 20 minutes. I would be more comfortable saying we can go 20 minutes. If there are still outstanding questions—but if you can incorporate the salient points from both presentations up front. Given that there are only two parties represented here right now, hopefully we would be able to digest our questions in the appropriate time.

**The Chair:** Other comments?

**Mr Hastings:** How does one differ fundamentally from the other?

**The Chair:** That I don't know. This request has come to me, and I am going back to the committee for direction.

**Mr David Poch:** There should be a slide show and two documents in front of you that I've given the clerk.

**The Chair:** OK. Let's have the first presentation proceed, and we'll see where we're at when we're finished. There's some resistance to giving you a full 40 minutes.

**Mr Poch:** Mr Chairman, if I can be so bold as to suggest, I've tried to integrate the two and in fact downplayed one in the hope that by combining them I could be briefer. I might be a little more than 20, but I wouldn't expect to be 40, assuming I can get this computer to work. There we go.

**The Chair:** State your name for clarity for the sake of Hansard, and away we go.

**Mr Poch:** My name is David Poch. I'm counsel to the Green Energy Coalition and I've also represented the Toronto Renewable Energy Co-operative in a number of matters. I practise law in the energy regulation field, so I'm routinely representing these groups at places like the Ontario Energy Board, and they've asked me to assist in presenting their position to you today.

Let me thank the committee. We were here in the fall, in August, giving an overview, and we greatly appreciate the fact that the committee has put out an interim report with specific questions.

Let me indicate who I'm here for. As I said, I'm going to try to combine this. First of all, the Green Energy

Coalition is comprised of three environmental groups: the Sierra Club, Greenpeace and the Energy Action Council of Toronto. It grew out of a coalition that was formed at the time of Ontario Hydro's demand-supply plan environmental assessment at the end of the 1980s and the beginning of the 1990s. This coalition is predominantly for the sole purpose of combining interventions in the regulatory arena for economies in that sense.

TREC is probably best known to you as the group in Toronto that's setting up a couple of wind turbines on the waterfront in partnership with Toronto Hydro Energy Services. TREC is a co-op. There will be a group of small investors putting in their \$500 and each owning a piece of one or two of those turbines. In fact, the reason Mr Young is not here today is that they are in the throes of the final signing ceremonies, trying to get the signatures on the dotted line this week with Toronto Hydro, with the host site, with the turbine provider and so on, and it's a bit of a scramble.

TREC is already looking at its next project, which will likely be a wind farm or two that will serve Toronto and other communities as well and will be a vehicle for co-ops and small-scale investors to participate in wind development in a more economic fashion.

I have provided you with two documents today. The first one is our responses to the public policy questions you posed in your interim report. There we've done a Q&A format where we respond to the specific questions the committee posed. I'm not going to take you through that; I'll just give you the quick highlights.

Our preferred strategy that we would recommend to the committee is not to do a fuel-by-fuel, technology-by-technology approach and decide, "Let's subsidize this one. Let's tinker with that," although we concede there's a distinction to be made between alternatives to electricity production and other aspects of energy such as transport fuels. But at least in the sphere of electricity, what we're suggesting is that the committee consider a renewable portfolio standard as a simpler, more elegant and, we think, more economically efficient way to inspire a move to renewables.

You will be getting, if you haven't already, a detailed proposal for an RPS from the Wind Power Task Force. I gather they're scheduled to present in the coming weeks to you. They've retained Nancy Rader, who is the foremost architect of such plans in the States, to develop one with Ontario in mind. I won't go into the details. I think you're probably familiar from the earlier presentations with the general idea of an RPS. You basically impose a requirement on the electricity sector to roll in a certain percentage of renewables, ramping up over time. That will create a demand for the product and let the market, let the investors out there, be they co-operative investors like TREC or entrepreneurs, whoever, bid in their renewables, and the cheapest will get taken up by the market and you will have that efficiency of market allocation.

It means you've got an approach which is flexible in the sense that it doesn't tie you to betting on any

particular technology. It's flexible in the sense that the government can change the ramp rate, if you will, of the target over time. If the premium that the market is demanding for those products is too high, you can lower the target, the trajectory. If you've inspired a lot of innovation and inexpensive technology, you can ramp it up. You've got that flexibility. We think it's an ideal mechanism. It is getting, as you've probably heard, picked up in a number of jurisdictions in the States, Texas being the foremost example.

### 1030

The difficult question of what technology is in or out I think can be answered simply by saying rely on the EcoLogo mechanism that's been put in place at the behest of the federal government. It's a certification program which has sorted through all the tough questions about what is clean enough water, power and so on. It seems to me that it's a very elegant package.

We've identified in that document a few other government initiatives. Just very briefly, we think the government's role in R&D should be targeted to those aspects of R&D that industry tends not to do. Industry will do its R&D for smart light bulbs because it's a product; they can patent it, they can make that investment. They tend not to do R&D in things like smarter building shell design because it's not a product that you can package and patent and capture the revenue stream from. We would say that's the distinction the government should have in mind in deciding what, if any, R&D it should sponsor: do things, obviously, that industry won't do on its own.

We of course favour a government role in enhancing education to make the sustainable solution sustainable, as it were, and the procurement role analogous to the federal government's decision to try to obtain 20% of its own electricity needs from renewables. That would be particularly helpful at the beginning of the period, before the RPS has ramped up to create a market for the products.

That's all I really want to say about renewables, because I would like to spend most of the day focusing on the other item that we want to talk about, and that is demand-side management, conservation. We have provided to you another document, entitled *The Role of Ontario's Fastest-Growing Electricity Source: Energy Efficiency*, and the balance of my presentation will focus on that.

Energy efficiency, it turns out, is the fastest-growing source of electricity, or electricity services, more appropriately, in the Ontario economy, at least through the 1990s. From 1990 to 1999, which is the information that was available to us from StatsCan, the Ontario GDP grew 20%, but demand for electricity grew only 4%. Some of that was due to small changes in the makeup of the economy and fuel switching between electricity and gas, for example. But you would ordinarily expect that if the economy grows 20%, all else being equal, we're going to use 20% more electricity. The bulk of that difference was provided by increased productivity with electricity, energy efficiency, and it outstripped all other sources of supply in the 1990s.

If you look at the graph on the slide, the green line, the upper line, is where we would have expected electricity demand in Ontario to go through the 1990s based on where our GDP went. The lower line is the actual electricity demand met. The difference was provided in the main by energy efficiency.

Looking at it another way, for 1990 there's the pie chart of how we got our electricity, and you'll see that coal provides about 18.5%. If we look at the pie chart for 1999 and look at the energy services, the electricity services, including those being met by this increased productivity, we see that productivity slice is about 16.3%, which is approaching the same contribution as coal. That's just new efficiency in that period of just under a decade. So the message to you is that this is the sleeper; this is the big term. It is the option, first and foremost, that gives us the capability to conceive of a future where we start backing out of more polluting sources like coal. In fact, we think it's probably unrealistic to think about a future where our electricity is provided by renewables unless we lay this foundation of enhanced efficiency. It is by far the most cost-effective option, and it's really the only option which could offset the growing demand for electricity, which is part of a growing economy, and make it possible for renewables to then start to ramp down our reliance on non-renewable resources.

The question is, how do we achieve more of this efficiency? We've seen a whole bunch of it happening, as the economists would say, "naturally," although, to be fair, some of that productivity was the hold-over of the programs that Ontario Hydro did earlier in the decade and in the past decade. The question is, what policy options are there for you to consider to enhance this tendency?

I guess you could raise the price of power, which I recognize is perhaps not at the top of a politician's list, and properly so.

You can put in place increased efficiency standards. Of course, we have some efficiency standards in Ontario for various appliances, but efficiency standards tend to be the lowest common denominator that the industry involved can all agree on. It tends to be the way that government looks and says, "We're at a point now where we've achieved for the most part a given standard of efficiency in a given appliance. Let's cement that with a standard so we don't see slippage and we don't see competitors come in with a cheaper, less efficient product and undermine the situation for the producers of that product in Ontario who are meeting the standard." But it's very difficult for government to set a very high standard at the best available technology and impose that on an industry, which then is forced to retool and so on. There actually is a good argument for doing it, because then of course you're keeping the field level, but understandably, government is reluctant to do that in the face of industries that are saying, "You're going to put us out of business." The government is not in an easy position to evaluate whether that is a realistic threat. So

efficiency standards tend to be a good practice, but they're not going to be leading-edge.

The preferred method is demand-side management, which is utility programs to enhance efficiency, utility programs which basically are designed to get past the market barriers that keep people from putting in place all the cost-effective efficiency that is available. The technique that has been developed for this is called performance-based regulation. It's the technique of regulation of utilities in Ontario that's becoming commonplace now. It's basically a carrot-and-stick approach which the OEB has adopted, if for no other reason for them practically, because they have so many entities to regulate, than that it's a simplified method. It works quite well in this instance.

The barriers to efficiency are many, and I just want to touch on this to give you a sense of what DSM tries to overcome. You have things like the difficulty we all face, and we can all relate to this, when we want to go out and put in place a smarter appliance. None of us are experts, or most of us aren't experts. There's a lot of effort involved in educating ourselves about what the best product is: how much is it going to save me; what is the saving over time worth versus the time value of my money, the opportunity cost to my money, what have you? I don't have a spreadsheet in my laptop that I have with me when I go shopping. It's hard enough to figure out whether the financing rates make any sense. So consumers are naturally shy to do that, and they don't have the technical skills to evaluate the options nor to understand what options are reliable and market-proven.

#### 1040

There's a significant cost there that a utility can overcome for people by in effect doing that shopping, narrowing the options and saying, "Here are three ways you can do this which we think are cost-effective and reliable." There are split incentives. The classic example is the landlord who doesn't want to upgrade the furnace because the tenant pays the energy bill. The tenant, on the other hand, doesn't have the capital or the interest in investing in a new furnace for the landlord when he's perhaps not going to be around in a year's time. So utilities can go in and find ways of, say, helping to amortize the cost of the more efficient furnace into the rates the tenant pays and everybody is happy. There are any number of other split incentives, like engineers who spec heating and ventilation systems for buildings and get paid a percentage of the capital costs, which is of course an incentive for them to spend more as opposed to spending smarter.

There are a lot of those kinds of incentives that are working out there that don't work in the interest of efficiency, and clever programs by utilities, with just a small prod in the right direction, can redirect those incentives. Access to capital is an obvious one. If you think about it, if I'm shy to spend the \$10 for the compact fluorescent light bulb rather than the 99-cent incandescent one, I may even understand that it is actually cheaper to spend the \$10 because the bulb is going to last

10 times as long and it's going to use a fifth of the energy, but I've got to come up with the capital, and of course it's a more difficult problem when you're talking about more significant investments.

The alternative is, if the consumer isn't somehow cajoled into doing that or helped in some fashion to do that, that the utility or the supply industry, and in the case of electricity the generating sector, is going to go out and have to invest in new generators which might have a 20- or 40-year payback. So the economics of the generation investment are far worse than the economics of the efficiency investment. We need to find a way to make access to capital equal so that we get more rational investment in the consumer sector. Again, utilities have ways of doing this, on-bill financing, what have you.

Non-diversified risk: if I'm a customer about to make an investment in something, that's it, I have that one investment and it's going to work or it's not going to work. A utility can go out and invest in a range of efficiency items, and if they don't all pan out, that's OK; some do, some don't. There are transaction costs for customers, hassle costs, basically, costs of arranging financing, costs of shopping, all those kinds of hassle costs, which can be overcome.

Lack of market infrastructure: the specialty item may simply be unavailable unless there's a program to get it out there in the market. Ontario Hydro actually transformed the commercial lighting market in the late 1980s and early 1990s in Ontario by bringing T3, the narrower commercial fluorescent lights and efficient ballasts, to the market, and now they have become standard, ahead of a lot of other jurisdictions, without their having to carry on with the program.

There are institutional constraints. You're probably familiar with government departments. They'll have an operating budget, they'll have very great constraints on capital budgets, and they can't swap the two. Even though it may make much more sense to put the capital out and save a lot of operating costs over a great many years, they just don't have that flexibility. So again, third parties need to come in. Of course, customers don't get any benefit from the environmental savings they can create by conservation.

So DSM is the way to do this, the way to inspire such investments. We have it in the gas sector. This is a tremendous success story which is little known. The OEB in about 1993 started a process which has led to a set of regulatory incentives and accounts for the gas utilities. Of course, it doesn't regulate the electricity sector, it's just reasserting that role, but it hasn't through the 1990s, and at this point Enbridge is perhaps the best example because they actually have a shareholder incentive to go out and better the target for efficiency that's given them. For this current year, we're just about to go in front of the board and try to get approval for a negotiated target that would have Enbridge's one-year program, 2002 program, save Ontario customers of Enbridge \$187 million spread over the life of those measures. That's what is called a net present value, so it's real dollars. And if you put a



value on the carbon emissions avoided at \$40 a tonne, it's \$291 million, so a quarter of a billion dollars in savings from this one year's programs.

They've been successful enough. Their DSM program has been growing 25% a year. They have cut their increase in gas sales that they would otherwise have to meet with new supply by 50%, and to achieve that \$180-odd-million in hard cash benefits, their program budget is \$13 million. That's all they need to go out and inspire a whole bunch of efficiency, all of which has to pass the test of being cost-effective. Then they use that to leverage the economy out there to make the investments in this cost-effective efficiency. There's how their program has ramped up with these incentives. You can see that it started off small in 1995; it's up to \$187 million this coming year. Union does not have quite the same regulatory structure in place yet, theirs are about half that, but combined you can see we're now saving Ontarians about \$300 million a year, a third of a billion dollars every year that these programs are going on now, and they're growing, and of course each year is on top of the previous years.

CO<sub>2</sub> reductions: as you would expect, the same shape of curve; dramatic savings. Each of these columns is the tonnes of CO<sub>2</sub> over the life of the conservation measures put in place. I won't bore you with the decimal places there; it's a big number.

So there's the summary. It's a dramatic success story, one that Ontario should be proud of.

What about electricity? We had some conservation programs with Ontario Hydro. They were accused of being gold-plated, they were perhaps not the most efficient at directing them, but even so—these are numbers of the OEB's report—you see that their forecast for 1993 was 350 megawatts of conservation to be put in place. That works out to about half of a Darlington-size reactor—Darlington reactors are about as big as they get—and it would be worth a little under \$2 billion in avoided capital costs if you were going to meet them at the price that Darlington was, not that anybody is suggesting you do that. Of course, it also avoids the operating costs, the fuel costs, the decommissioning costs, the refurbishment costs of centralized supply.

To do that, Hydro was spending \$250 million, and they were leveraging investment in the economy that was all cost-effective, all cheaper than the supply alternative, and was saving a huge amount. But, of course, when the OEB oversight of Ontario Hydro—it wasn't even regulation; it was just oversight—ended in the early 1990s, so too did Hydro's incentive to engage in conservation programs, and they stopped for the most part.

We've taken a shot at estimating what the realistic potential is here. As I said, we're at about a third of a billion dollars per year in gas conservation in Ontario from DSM. There's a much greater potential on the electricity side for a variety of reasons. First of all, the electricity grid gets to everybody in Ontario and the gas grid doesn't. There are a great many more electricity end uses for which conservation technologies exist than there

are for gas. Many of them can save a lot more: the now aged example of a compact fluorescent can save 60% or 80% of the electricity involved in providing a given amount of light. Gas conservation technologies don't come in that high at all.

#### 1050

There are price risk reduction benefits to efficiency, particularly important now that we're moving to a deregulated commodity market. It's in the report; I won't take you through it. But we're going to expect more price volatility in the market. Conservation tends to dampen that, so there are other values to customers as well.

All told, we think it's quite reasonable to expect between half a billion and a billion dollars per year of savings to be available if we engage in electricity conservation. I should make it clear, if I didn't earlier, that those numbers I was talking about on the gas side, the \$187 million, are the net benefit; that's after counting all the costs, including the customer costs, of putting in place those conservation measures. That's how much is actually being saved after counting all those costs. These numbers are the same kinds of numbers. These are the net savings that we're talking about—big numbers. It's the big sleeper.

What are we here asking for? The OEB has started to look at the question. They're scheduling a hearing on the distribution rate. The next hearing on the distribution rules, setting rates for the distribution utilities, will probably be in about a year from now. It's not a main issue for them. They've been, of course, preoccupied with operationalizing the market opening. We think it's time to light a match under this one and get on with it. We expect there will be some resistance from some of the smaller distribution utilities, and perhaps from Hydro One too. We don't really know who we'll be dealing with there, but we'll find out soon enough, I guess. But we think if the OEB insists that they all have to play by this rule and it gives the shareholder incentives so that it becomes a profit centre for these utilities, you'll see the same things happen on the electricity side that we've seen on the gas side. Enbridge is thrilled with this. It's a profit centre for them. It's growing in leaps and bounds. They're co-operating with all the stakeholders and interveners. They're searching for ways to be more effective. We can do the same thing on the electric side. So we're asking the committee to make a recommendation that the OEB make that job one.

There is an ancillary recommendation, and this is my final point. We have these new emissions trading regulations for NO<sub>x</sub> and SO<sub>x</sub> in Ontario. I'm sure you've heard about them. We pushed a little and the ministry agreed to include, I think it's a one-kilotonne set-aside, which if renewables and DSM perform and the t's get crossed and the i's get dotted and whatever, they can apply to get credit for that, and that amount will, in effect, be taken away from the next year's allocation to the generating sector. We think it's an arbitrary cap. We're not sure why it's capped. The potential for set-aside, first of all—why wouldn't you want to encourage all the renewables that

you can? The only way the public will benefit is if every time there's an additional kilowatt-hour of renewable power, there's one less kilowatt-hour of emissions associated with a kilowatt-hour of dirty power allowed. It seems to me that that should be just fundamental, basic, good public policy.

The other thing is that the current regulations are really unworkable. The hoops you'd have to go through to get the set-aside means probably no one is going to bother, especially if you're a grain power producer, because you don't want to get the credit and sell it back to the generating sector, because then you can no longer call yourself a green power producer: you've just enabled more coal to be generated. All you're going to want to do is just retire that.

So it's a very cumbersome approach. We're saying simplify it. In the case of conservation, if the OEB—on the gas side we have an audit process. If the auditors say, "Yes, that conservation occurred," you can give the company its little shareholder incentive reward for having achieved it. If the OEB goes through that process and finds that conservation occurred, that should be good enough for the ministry to say, "OK, we're going to reduce the cap on emissions for the generating sector, lock-step." That's what we suggest.

Thank you. I know I've gone over, and I appreciate that.

**The Chair:** Thank you very much for your presentation. I was quite tolerant. We're up to 29 minutes.

**Mr Poch:** I appreciate that.

**The Chair:** I know you requested from the two groups, but unless there is a general agreement from the committee, we'll move on. Otherwise, I can take questions, if there's general agreement on it.

*Interjections.*

**The Chair:** OK, how be if we give a minute and a half to each caucus, starting with Ms Churley? I can, if you would prefer, start over there.

**Ms Marilyn Churley (Toronto-Danforth):** No, it's OK.

This can be really complex stuff, and I'm pleased to see your emphasis on conservation and efficiency, which is something that's part of our mandate now, to look at that as well. My question would be on your last recommendation. You're talking about getting the Ontario Energy Board to implement this, but I would expect the initiative has to come from the government, that we need to convince the government not to pressure, but to direct the OEB to get this program in place.

**Mr Poch:** There are two things the government needs to say, in our view. First, they should advise the OEB to increase the urgency of this, because there are lots of opportunities. Every time something gets built in Ontario, every time something gets bought in Ontario that's not as efficient as it could be, cost-effectively, that product, house, building, what have you, is there for 10, 15, 20 years. It's a lost opportunity. So the sooner, the better. That's the first recommendation. The OEB is looking at this.

The other point is that it should be mandatory. There should be incentives, it should be mandatory, and there should be a flexible approach where, say, small utilities who don't want to gear up to do this, understandably, can just buy the efficiency services from Hydro One or a third party.

**The Chair:** Mr O'Toole.

**Mr John O'Toole (Durham):** Thank you, Mr Poch. I appreciate it. I totally agree with the idea that demand-side management is really the full—even in the pricing theory of how we pay for what we consume, the price goes down the more you get.

**Interjection:** Reversed.

**Mr O'Toole:** However, I will say this: the money never shows up. I'm going to refute—and I have no expertise in this area at all except to say that during the period where Ontario Hydro was doing all this cost efficiency, that's the very period where they actually became less efficient. In fact, the debt increased during the period when there were those buybacks and all this stuff. They actually grew more debt during that period. I sat on NAOP for 17 weeks. I couldn't believe it. The more money they were able to save, the more wasteful they became.

The second thing is, I agree with that. I just think that with the demand-side thing—Enbridge is a perfect example. During the period when they had the highest savings, there was the most volatile pricing. They've been back to the Ontario Energy Board for price increases on storage and everything else. They've never worked at infrastructure by plowing the money back to actually—I can say to you, as a consumer and not a scientist, that I completely support your idea, but I want to hold the \$187 million that comes out of the operating plan, and they don't get to pass price increases. Otherwise, the actuarial assumptions and the economic forecasting are all BS. Am I permitted to say that? Bachelor of science.

**The Chair:** Thanks very much, Mr O'Toole; you've used up your minute and a half.

**Mr Poch:** I agree, sir, but let me be clear: it's not Enbridge who's saving the money. It's not coming out of their budget. It's all of the customers who get these efficiency measures and aren't having to buy the gas.

**Mr O'Toole:** I understand that, but it's phony accounting.

**The Chair:** Mr O'Toole.

**Mr Poch:** It's audited, sir, and the auditors are saying they're real savings. I can't do better than that.

**The Chair:** Dr Bountrogianni.

**Mrs Bountrogianni:** I would like to donate my time to Mr Poch to answer that properly.

**Mr Poch:** Thank you. The point is not that it affects the price of gas or electricity. In fact, I'm the first to agree that—I was there in those days too, sir, and I agree with you: Hydro was just not efficient. In fact, the whole idea is indeed to let the customer get efficient—the customer, not Hydro—so they don't have to buy so much of this product and have Hydro go out and spend more on

these outrageously cost-overrun plants. Of course, hopefully we're solving that problem through another mechanism. Time will tell.

**Mr O'Toole:** Consume less and pay the same.

**Mr Poch:** Yes. But the point is to make the customer more efficient. We're not talking about making the utility more efficient. That's another problem; let the OEB wrestle with that one. That's what they're trying to do with their performance-based regulation. We'll see how effective they are. It's a problem with all companies, and all monopolies in particular; I appreciate that. But what this is about is saying we have a unique regulatory opportunity to help the customer get around barriers and be more efficient. That's all I'm pitching at you. I don't profess that it's more than that.

**The Chair:** Thank you very much, Mr Poch. We appreciate your coming before the committee with a lot of good information.

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#### ENRG

**The Chair:** We'll now call forward Doug Cameron from ENRG.

*Technical problem.*

**The Chair:** When we have our equipment replaced next time, we'll go to a better yard sale and get it.

**Mr Doug Cameron:** The one I went to wasn't sufficient either. Sorry for the delay.

**The Chair:** Dr Bountrogianni, you may be interested to know that the legislative committee is reviewing this whole area of equipment and how these rooms are moving into the 21st century with technology. But certainly it's difficult right now.

**Mr Cameron:** Sorry about the malfunction here. I don't have anything on my screen, so I'm going to have to read from this screen.

**The Chair:** If you don't mind going ahead, we'd appreciate that. To begin with, Mr Cameron, please state your name for the sake of Hansard. We have 20 minutes for you. What's left over we'll divide between the three caucuses.

**Mr Cameron:** I apologize. I have nothing on my screen, and I can't seem to get beyond this screen. Is it best if I go back to my screen?

**The Chair:** Whatever works for you.

**Mr Cameron:** Here we go. I apologize. One moment, please. I've already used seven minutes. I'll be fast.

Good morning, and thank you for the opportunity to be here today. My name is Doug Cameron. I'm the manager for ENRG, a transportation provider in the natural gas fuelling industry. I have about 20 slides, which I'll go through fairly quickly.

I'll give a little bit of background on our company. We operate over 90 natural gas fuelling stations in Ontario, British Columbia and in a couple of US states. We provide the convenience of a turnkey solution that includes design, construction, ownership, operation and maintenance of state-of-the-art compressed natural gas and

liquid natural gas fuelling stations. The benefit of that to our customers is that we eliminate the need for the customer to come up with the capital to build natural gas fuelling infrastructure. It lets them do their core business and get on with their business. We look after that hurdle for them. It's a huge issue in moving forward with natural gas vehicles.

The situation as it is today is basically an environmental issue. Road vehicles are the largest source of smog and climate-change air pollutants. Since the 1970s, the number of vehicles on the roads has doubled. Vehicle emissions impact health, climate change, ground and water contamination, crops and buildings.

The Windsor-Quebec corridor has some of the highest levels of ozone more often and for longer periods of time than any other part of the country. So, cities along the 401 corridor are well-positioned to improve air quality, but they need some provincial support.

Some of the effects of pollution on health in Canada: 5,000 deaths per year are associated with ambient air pollution, and I think it's something like 1,900 in Ontario. That's from the Canadian Journal of Public Health. There are 9,800 emergency room visits, 13,000 hospital admissions and 47 million fewer workdays of productivity caused by smog and bad air.

There was an interesting survey done in the Star in I think the first part of December. Even in the cold weather, the majority of Toronto residents agreed that the air pollution in the city is terrible.

One in five Canadians has some form of respiratory problem these days. Asthma rates have increased over 60% in the past 10 years, and of course the elderly and younger children are at the highest risk. These are all backed by Canadian sources.

Some of the other costs that people don't really look at are the damaging effects. The estimated societal cost of vehicle emissions is between nine cents and 17 cents per passenger-kilometre travelled. That equates to more than the fuel cost. So, whatever we're paying for vehicle fuel doesn't nearly cover off the damage it causes, and that's for light-duty vehicles.

If you look at heavy-duty vehicles, diesel truck emissions—and I think a lot of us commute on the 400-series highways—it's devastating. The cost of the damage that diesel does is almost 80 cents per mile travelled. It's 30% more than the vehicle fuel cost. These are health cost damages.

Ambient CO increases heart failure and deaths, accounting for almost 6% of heart failure in major cities, North America-wide. Emissions such as benzene and nitrous oxide have shown a six times increase in childhood cancers in households adjacent to heavy traffic. That relates directly to roads that have in excess of 20,000 cars per day, which is pretty typical in a major city like Toronto.

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Why would anybody want to use natural gas as a vehicle fuel anyway? It's supposed to be a household fuel. That's what some people think. But it is abundant,

safe, clean and economical. We have a tremendous resource. A lot of people have been concerned about the price of natural gas going up, but we actually have about 110 years' supply on hand; that's if we had 20% of the fleet in Canada operating on natural gas, and we have about 2%. So we have a huge supply.

Why is it safe? It's lighter than air, it has a higher ignition point than gasoline or propane, and a narrower flammability range. It has a near-perfect safety record. It's odorized, so that any leak is easily detected. The cylinder safety is second to none. The cylinders are constructed of steel and aluminum, and they're reinforced with carbon or glass fibre wrappings.

The refuelling is quick. It has an automatic shutoff. It's self-serve. It has a sealed refuelling system, so there are no evaporative emissions whatsoever. The factory-built natural gas vehicles by the original equipment manufacturers are crash tested, and they have factory-prepped engines. I think it's important to separate factory-built vehicles from a lot of aftermarket vehicles out there that don't reach the credibility level from an emissions standpoint.

It has huge environmental advantages. It has up to 98% less harmful emissions: that's carbon monoxide; greenhouse gas reduction by at least 20%. It eliminates evaporative emissions; near-zero particulate matter. It eliminates transport spills. It's non-toxic. There's no soil pollution. ULEVs and SULEVs are ultra-low-emission and super-ultra-low-emission vehicles. They're almost zero-emission vehicles. If you look at the second-bottom one, most of the dedicated natural gas vehicles are super-ultra-low-emission vehicles, overall producing 92% less emissions than typical gasoline vehicles. The only zero-emission vehicle would be an electric vehicle, but that's only measured in tailpipe emissions, so it's not a true zero-emission vehicle.

The natural gas vehicle solution is that it is the fuel choice of the long-term transition to a more sustainable future. A lot of people think we can move to the hydrogen fuel cell as the ultimate decision, but if you don't have a transition fuel that deals with high pressure and the same kinds of issues that we're dealing with with natural gas, we'll never get to the hydrogen fuel cell level. They do offer distinct advantages over conventionally powered vehicles, as we talked about: reduced pollution; reduced health care costs; net job creation; increased Ontario GDP; and after 9-11 in particular, reduced reliance on a foreign oil supply. Lots of cities in Canada and the US are using natural gas vehicles now to improve their air quality. But they're not mandated to be natural gas. They're just the cleanest vehicles of choice in Toronto, Hamilton, Burlington, Vancouver, and lots of cities in the US.

We feel like we have a role to fulfill here. We actually have established a partnership with Ford Motor Company to promote the use of their alternate fuel vehicles. We have a multi-million dollar, multi-year contract to support labour, marketing and infrastructure development in Ontario. Obviously, our focus is here. Westport Innova-

tions is a part owner of our company. They're a BC-based technology developer. They have developed a direct high-pressure injection system, so that the diesel kind of engine can operate on cleaner burning natural gas. We have an aligned marketing focus on heavy-duty transit, refuse and interstate trucking. So there's a lot of money in our industry.

What we're looking for is some government support. We think the government should be active in reducing the impact of poor air quality caused by vehicle emissions. We also think you should recognize the impact of improved air quality, and the proven cost-effectiveness of natural-gas-powered vehicles. Other technologies are coming, but they're not anywhere near being marketable. Natural gas products are affordable and proven to be clean. How could you do that? You could update today's existing government support; support existing stakeholders who have invested heavily in the Ontario market. That includes the auto manufacturers, station infrastructure people like us, and the utilities, who have all built millions and millions of dollars worth of infrastructure. We need assistance to get the general public more informed and more motivated to buy a clean-burning vehicle. It's kind of like the blue box program. If people don't participate and put in a little extra effort, it'll never work. We think you should implement supportive legislation and regulations, and look at other leaders in the air quality improvement area, so that we don't have to waste time and money on duplicate studies. It also creates a lead-by-example role for the government.

There is existing legislation in place. There's a current provincial sales tax rebate of \$1,000 per natural gas vehicle sold. There's a market development incentive plan, which is actually money from the gas producers, that runs out this year: \$2,000 and \$3,000, respectively, for different classes of vehicles. There's a full provincial sales tax rebate for transit buses. And there's a fairly weak federal fleet policy that hasn't really been implemented very well; there are too many holes in it.

But we think there's an opportunity, particularly along the 400-series highways, where the cities would willingly participate in air quality strategies if they were supported by the government. We also think that specific vehicle types should be targeted to reduce emissions drastically. This isn't for everybody. It has to be targeted fleets such as vehicles that consume large quantities of fuel and emit the most emissions.

Government support could come from penalties on vehicles that don't conform, or funding could come from vehicle licensing fees. The government would be seen as taking an active role in preserving community and health and economics.

So we have some things that we think would make sense for the Ontario government to do. We think that if you lift the current \$1,000 PST maximum—that was actually implemented, I think, back when cars cost about \$10,000 or \$12,000, and it was a full PST rebate in those days. But since vehicle prices have risen to \$30,000 and \$40,000, it doesn't go very far. I think it's 10 or 15 years since that's been updated.

We think the PST rebate should be extended from light-duty to include heavy-duty vehicles, refuse trucks and school buses. Those are the ones that are emitting the most damaging emissions. And introduce some kind of a bus and refuse truck procurement policy that supports only clean vehicles. I know municipalities are always looking for funding to support their transit systems and their refuse systems and things that aren't covered by local costs, but I think it should have a green tinge to it.

Clean-vehicle operators should be rewarded somehow—I don't know whether it could be tax credits or operating in the HOV lanes—with some kind of recognition for being the good citizens, that they're leading by example by doing that.

There are some significant leaders. South Coast Air Quality Management District in California has adopted a bunch of rules around specific vehicle types. Maybe in Ontario we could start with some of the most effective ones: maybe transit fleets or refuse fleets or airport fleets. I have copies of all these rules. The wheel doesn't have to be reinvented to address some of these issues.

There's a huge infrastructure already in Ontario. A lot of people say there aren't enough stations; there are 65 public stations in existence. In the greater Toronto area there are many, many fuelling stations. But for those who think there aren't enough, that's what our company does. We take away that barrier by building the stations that are needed.

All of the Big Three North American auto manufacturers have factory-built natural gas vehicles that run solely on natural gas and reach super-ultra-low-emission standards. There are actually 35, I think now, original equipment vehicle and engine manufacturers building natural gas vehicles. They're not doing that because they like natural gas; they're doing that because they meet emission standards and are marketable today. But we need to get that message clearly to the end user.

So the benefits to Ontario are cleaner air; fewer smog days; a step toward Kyoto compliance; attracting and spending marketing dollars from the US and Canada, which is certainly needed; supporting the production of environmentally friendly vehicles already being manufactured in Ontario—one of the natural gas trucks is manufactured in Oakville, at least for a couple more years, and the natural gas Crown Victoria is manufactured in St Thomas. So there's a lot of Ontario employment that hinges on this business.

Thank you very much for your time, and I welcome any questions or comments.

**The Chair:** We have about a minute and a half per caucus, beginning with the government side.

**Mr Hastings:** Yesterday, sir, we had a presenter who contended that natural gas does not essentially reduce pollutants in the air and that gas itself, what we have, is better. Now, I've seen material, both sides, that—

**Mr Cameron:** I'm going to speculate a little bit and suggest that that was probably coming from the article that appeared in the Globe yesterday. I was surprised to see that Globe; it looked like something that should have

been in the National Enquirer. That's my opinion. I can't believe that the Globe printed an article like that. It's not documented with any backup information. They're talking about 1995 aftermarket vehicle technology. They're talking about a technology issue; it's not a gas issue.

Natural gas is the simplest makeup: it's 95% methane. If natural gas is treated with the same emission technology as gasoline, propane or diesel, natural gas will always be the cleanest, because it's the simplest makeup. You can't change its inherent values. Propane is actually a by-product, sort of the waste, when natural gas is produced, and it's full of lots of toxins that aren't in natural gas.

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**Mr Hastings:** Surely you're not surprised at that kind of an article? The journalism world doesn't have many people trained in science issues to start with.

**Mr Cameron:** I'm not surprised at all. I think any reference to emissions needs to be documented by legitimate sources like Transport Canada or the Environmental Protection Agency. Those are the only approved emission reduction sources that have any value.

**Mrs Bountrogianni:** I'd just like to continue in that vein, because we were surprised as well yesterday and we've asked our ministers to look into that. But they did cite the Drive Clean program, as did the Globe and Mail article. What is your response to the Drive Clean program's results, which indeed show that slightly more natural gas costs didn't pass—

**Mr Cameron:** I think the reason for that, and I can document this information if you'd like me to, is that the natural gas vehicles that were tested, in fact most of the natural gas vehicles that are on the road today, are the result of an after-market conversion. That's like taking any of our gasoline-powered vehicles, taking apart the computer, taking apart the wiring, trying to make it run on another fuel and wondering why it's hard to start and wondering why it doesn't pass a Drive Clean emission test. Those are not factory-produced vehicles. Somebody has been rummaging around with the emission system the manufacturer produced and has then taken it to a Drive Clean to see if it would pass. It doesn't make any sense. Once again, that's a technology they're throwing into the equation that isn't applicable.

Natural gas factory vehicles are certified by the Canadian and American governments to meet and maintain emission standards for seven years. They have to comply to that. Any vehicle will go out of tune if it's not maintained, whether it's gasoline, diesel or propane. But I go back to the same thing. If they're all using the same technology, natural gas will always be the cleanest because it's inherently the cleanest fuel. So my message again there is that they're comparing old technology on a converted vehicle, not a factory-produced vehicle. We do not support after-market conversions. They don't meet emission standards; the OAM vehicles do. That's where all the money is spent, and that's where the value is.

**Ms Churley:** Further to the turn in this conversation because of this article, the Toronto Transit Commission

is saying the same thing, that they were experimenting with it and they're not going to pursue that. So a huge amount of damage has been done as a result of this without the other side.

**Mr Cameron:** I agree. The Toronto Transit Commission has actually said in their own internal report for at least two back-to-back years that their natural gas transit bus fleet is actually less expensive to run than their diesel bus fleet. That's in their own internal report. That's on a cost-per-kilometre basis.

**Ms Churley:** So I guess you'll be dealing with the Globe and trying to get the other side printed.

**Mr Cameron:** Yes.

**Ms Churley:** But just in terms of where your company is going with the newer vehicles, is it taking off? Are there others starting pilot programs and things like that with the newer vehicles?

**Mr Cameron:** Let me back up just one second on the Toronto Transit Commission. I just want to make a comment there. The buses that they have are prototypes. They weren't full production vehicles when they were put on the street. They're still operating. In fact, some of them are the most reliable buses in their fleet.

**Ms Churley:** Is that right?

**Mr Cameron:** Yes. If you talk to staff, they'll—it's in their own report. There's a lot of conflicting information that gets out there.

As far as prototypes are concerned, these are not prototype vehicles. These are full production vehicles. They're manufactured by GM, Ford and Chrysler. They exceed all of the emission standards by many years over gasoline. They have millions and millions of miles on them. The reason that there aren't more of these vehicles on the road is that people are constantly being misled by what I refer to as the conversion technology business versus the original equipment manufactured vehicles.

The other thing is sort of the chicken and egg. People say there aren't enough stations. That's our role. Our role is to build infrastructure, but we can only do that in specific areas. We can't go and build 100 stations and hope somebody comes.

**Ms Churley:** In summary, because I know we have to wrap up, could I just quickly clarify that you're making the distinction between the converted vehicles and the new vehicles that are designed to burn natural gas?

**Mr Cameron:** Absolutely, yes.

**The Chair:** Thank you. We really appreciate your presentation and your coming forward.

#### ENERGY WORLD WIDE INC

**The Chair:** We move on to our next presenter, Energy World Wide Inc, Mr Drucker, CEO.

**Mr Ernest Drucker:** Good morning, ladies and gentlemen.

**The Chair:** Good morning. For the record, please state your name so that Hansard gets it accurately.

**Mr Drucker:** Drucker.

**The Chair:** You have 20 minutes. Anything left over will be divided among the three caucuses.

**Mr Drucker:** I represent Energy World Wide.

To Mr Doug Galt's, MPP, Chair of the select committee on alternative fuel sources, and all the members' attention: the secretary is going to distribute a memo which includes quite a lot of information. Also, we have presented an additional one and a copy of the world patent which we received just last week.

If I may start with my presentation, our company was formed about 10 years ago. It utilizes mostly warm air, which it converts into wind. Now, as we all know, warm air rises. When the tower in which it's converted is high enough, the wind into which it is being converted reaches a velocity which doubles each 100 metres. So, for instance, if you have a velocity starting at 10 or 15 kilometres an hour at the bottom, by the time it reaches 400 metres high, it will be about 60 to 70 kilometres per hour.

The problem today was still, how do we generate sufficient warm air in order to be able to produce sufficient velocity and a sufficient amount of air which would turn a turbine? We have produced for the first time a warm-air module; you have a copy of it in our submission. A warm-air module produces on average about 3,700 cubic metres. We only have to warm the air in the module by six or seven degrees in order to have this warm-air module go up.

The warm-air module in our new technology is located around the tower, which has a diameter of about 25 metres. You have all that in the schedule. Around it we have between 30 and 32 such warm-air modules. Every one and a half or two minutes, depending on the temperature, the air from these warm-air modules is being let into the tower. Before it reaches the turbine, it goes through a venturi. I don't know if many of you know what a venturi is. A venturi is a system which increases the speed of the air by reducing the amount of the circumference. By the time the 7,000 or 8,000 cubic metres from two of the warm-air modules reach the turbine, the velocity has been increased from zero to about 15 to 20 kilometres per hour.

The design of the turbine by our technology department has been specific. We found, to our regret, that nobody in Canada or the United States can build a turbine which we have designed. The only country which could build the turbine is Germany, and we have received a quotation from Germany for our design.

#### 1130

Our design is specific since it includes a carbon plastic and specially designed zircon steel. The carbon plastic and the zircon steel enable us to generate electricity even from only 20 kilometres per hour, but it can go up to 175 kilometres per hour. Then, from that turbine it goes through the tower, which in our proposal is 400 metres high, and when it comes to the top, of course, as I mentioned before, the velocity has generated three or four times every 100 metres. Thus, the increased velocity pulls the turbine to about an average of 100 kilometres per hour. We have not only made the calculation; we

have produced experiments. Each experiment was verified by three engineers. One of the major helps for this was a chief of aerodynamic industries who is on Dufferin Street, Mr Grossman. We found many other things which I won't talk about.

The 100- to 110-kilometres-per-hour speed generates within 24 hours anywhere between 40 megawatts to 70 megawatts. According to calculations provided to us by Ontario Hydro, whose part of energy is being generated by water, one megawatt of cost, for instance, from water is judged today at \$1.5 million. That means the cost of our plant only with one tower, which will generate between 35 megawatts to 50 megawatts, depending on the location of the tower, because we have in Canada areas which are very windy, like the Gaspé, where the speed would be higher by the outside air. But let's say an average thing like we have in Toronto or in Kingston or around the lake would be between 70 kilometres and 100 kilometres per hour. This 100 kilometres per hour would generate about 70 megawatts to 100 megawatts. By the calculation of Ontario Hydro, this would be worth between \$70 million to \$100 million.

We have been in touch with the Ministry of Natural Resources, asking them to approve for us the issue of flow-through shares so we can construct a pilot plant made of two towers. Until last week we were told by the Ministry of Natural Resources that unfortunately they have no guidelines for our technology. They have only guidelines for windmills. But they were intrigued by the technology we submitted to them in detail and they were in touch, as a matter of fact a couple of days ago, with the Ministry of Finance, the science council of the Ministry of Finance, and they decided with our assistance to develop guidelines which then will be guidelines for our technology, so we can get the necessary funding to issue flow-through shares. It all happened only last week so it's not included in this design.

The complete details of our technology I left in a book like this for your reference. In my little thing, I'm highlighting the major amounts under the process description, which tells you exactly how the technology works starting from the bottom to the top, and also the technology and the experiments we did.

We have done something else. It appears to us, from reports in the press and from known determinants, that the present utilities, which are mostly producing electricity generated by firing coal, are the top 15 polluters in Canada. You have a list, on that page here which I included.

Ours is the first technology which uses only warm air and speed. It's completely clean—no gas, no hot water, no atomic energy; just warm air and speed. We are the first in the world. As soon as the world patent was approved last week—you have a copy in here—we had not less than six questions, from the United States, from the German government, from Brazil, and from two other governments. If you are willing to consider a joint venture for the generation of electricity, we reply to everybody very politely, "Yes, we are willing, but first

we have to build a pilot plant to take out all the bugs which are normal in new technology."

Although we have spent, to date, over \$280,000 of our own money to conduct the experiments and to arrive at the technologies we have now, and we have secured an option on land in Napanee that has the right zoning, where we can go up to 400 metres high, we are now waiting to receive a call from the Ministry of Finance so we can, together with them, create a list of technologies which will be then approved by the government so we can get the issue of the flow-through shares.

If you have any questions, ladies and gentlemen, I'll be quite willing to answer. It's not that easy a technology. We've worked on it for the last 10 years—various experiments, always with at least three engineers witnessing our experiments. It was only about six months ago that we arrived at the stage where we can say, "Yes, it is feasible, it works, and it is unique." Thank you very much.

**The Chair:** Thank you very much. We have about two minutes left for each of the caucuses to ask questions.

**Mrs Bountrogianni:** Thank you very much—a very interesting presentation and concept. I'm assuming, then, that this has not been applied anywhere yet? No.

**Mr Drucker:** Not yet anywhere, because our technology is first in the world. All we've got is the world patent, the first one in the whole world.

**Mrs Bountrogianni:** OK. My second question, sir: are you presently attached to a research institution or a university—I do see some references of your publications—or was this in your past?

**Mr Drucker:** No. Our company has six people working at the moment. One is a mechanical engineer, here with me, Mr Adam Switzky. We have an economist, we have an accountant, and we have another engineer who is not here. I have only three diplomas, which unfortunately do not include electricity, but I learned electricity on the side. However, most of the technology has been developed by our people. We asked for assistance and we asked for a university, and they said, "We don't know if it's going to work. After it's going to work, approach us." So we didn't approach anybody yet. Now that we have the world patent, now that we can prove that it works, everybody is arguably after us.

1140

**Mrs Bountrogianni:** I think some PhD students lost some opportunities here. Thank you for an excellent presentation.

**Ms Churley:** I just want to clarify: I believe your presentation has now been updated. You say here that because of the lengthy process that would be involved with the science council, you would have to accept the invitation by the German government to build a suitable pilot in Germany. But now, since you gave us this—

**Mr Drucker:** Which page are you on?

**Ms Churley:** I'm on page 3, point 6, where you talk about the fact you mentioned that there were no rules around this. You mentioned in your presentation that it

would take so long to get relevant guidelines established by the science council that you would have to go ahead and do the pilot in Germany.

**Mr Drucker:** If we don't get it. But in the meantime, last week, before this was printed, the Ministry of Finance phoned us.

**Ms Churley:** So, it looks like now you will be able to do your pilot here in Canada.

**Mr Drucker:** Yes, I hope so.

**Ms Churley:** But failing that—and this is what I want to clarify—you do have a firm invitation from the German government to do this.

**Mr Drucker:** Yes, we do. The German government has written us a letter. They have 20 atomic reactors that they have to put to sleep within 10 years, and our technology is the only one they would accept in doing that.

**Ms Churley:** What do they have?

**Mr Drucker:** Twenty atomic reactors that they want to put to sleep.

**Ms Churley:** I see. And they look at your technology as a way to help them do that.

**Mr Drucker:** Our technology is the only one.

**Ms Churley:** Interesting. Thank you very much.

**Mr Jerry J. Ouellette (Oshawa):** Can you not use current infrastructure that might be available, such as abandoned smoke stacks or something along those lines?

**Mr Drucker:** No.

**Mr Ouellette:** Can't they be modified at all in order to decrease costs?

**Mr Drucker:** No, they can't be modified, because our high towers also include software which we developed in connection with our technology. The software will be operated by two computer people. They open and close, and they take the temperature every 10 metres. There is a circular or slower turbine—if the turbine goes over 130 kilometres per hour, it would collapse or disintegrate. All that is controlled by the software. I didn't mention that here, but we have developed complete software with Quantech Electrical, one of the major electrical and software companies in Toronto. We also obtained a complete estimate of costs by one of the major companies, Eastern Construction Co Ltd, that we worked with before in Toronto. We have the complete cost of the elevators, of most of the things that we need.

For instance, our warm-air module has to be calculated, and we had to go four times until we got it right. One warm-air module is almost three times as high as a normal house. It generates the sunlight. In addition to that, we have sun mirrors. So when the sun comes from the east, we have mirrors in the west, putting it on the west view of the copy of the mirrors—it's in your schedule. There are many more. I've left the reference here for whoever is interested.

Our technology is not only working to produce electricity. For instance, as we went along we were able to produce a system whereby we can almost eliminate forest fires. We can also eliminate landfills, which are terrible. Landfills are the worst thing that can happen. When you

pass by a landfill, you don't see it but you smell it. The worst comes when it rains or when it snows. The water that comes through the landfill is worse than the air we breathe, because all that goes down and comes to our lakes and rivers and produces terrible disfigurement of fish and all the other things.

**The Chair:** Thank you very much. We're out of time. We really appreciate you coming forward and presenting a different technology to the committee.

**Mr Drucker:** Thank you for seeing me.

**Mr O'Toole:** May I just ask a question? Sir, are you related to Peter Drucker?

**Mr Drucker:** Yes, indirectly.

**Mr O'Toole:** He's a renowned expert, that's all.

**Mr Drucker:** I just want to tell you: Peter Drucker comes from parents who were in Germany. The Drucker family as such comes from Holland and is called Drucker because they assisted Gutenberg in his printing of the first book. In Dutch and in German, "drucker" means "printer," and that's how it happened. My grandfather and the father of Peter Drucker were brothers.

#### BRUCE ECOLOGY CENTRE LTD

**The Chair:** We'll now call on Gary Gurbin of Bruce Ecology Centre Ltd. Thanks very much for coming forward. If you both don't mind, state your names for the sake of Hansard so we can get them accurately.

**Dr Gary Gurbin:** Thank you very much, Mr Chairman. I'm very pleased to be able to come forward to the committee today with my colleague on behalf of Bruce Ecology, which is an Ontario company. I'm Gary Gurbin, a director, and Mr Sam MacGregor is our president. We're a company that has some roots historically in energy in a number of ways. Indeed this company has historical roots.

I'd like to divide my presentation to you today into three parts: a brief introduction; secondly, a tape that I would like to ask the committee's indulgence with; and thirdly, some comments to finish.

I think people have copies. I apologize for not having enough copies. I'm used to these meetings not having very many members, so I actually have to commend everyone on their attendance; it's pretty impressive.

Bruce Ecology Centre Ltd is a privately held Ontario corporation whose interests are in the commercial application of energy strategies and technologies that are environmentally superior and sustainable. Methanol, produced in an environmentally beneficial way from Ontario technology, is one of our main interests.

The history of our interest is steeped in activities that have embraced several decades of provincial and federal efforts to effectively manage energy challenges. Specifically, these include Energy Alternatives, which was commissioned by the federal government in 1980; changes to the Ontario Power Corporation Act in the mid-1980s, in keeping with some of our comments later; and Hydrogen, a National Mission, which was commissioned by the federal government in 1984.



BECL would like to commend the chair and the members of the committee on alternative fuel sources on their efforts to date and the practical nature of the questions they pose on behalf of Ontarians.

At the same time, there seems to be the risk we all run of producing a sort of déjà-vu-all-over-again set of circumstances in a populist report while we struggle to put clarity to terms like “green energy,” “alternative energy” and “sustainable development,” and our opportunities just keep going by while we’re struggling with these. There seems, at the same time, to be many opportunities that are out there for us still to capture, and I hope we can reflect on these with you today.

I would now appreciate the committee’s indulgence in viewing a videotape produced by the Methanol Institute in Washington, DC. This December 2001 release takes us very quickly through much of what I hope to communicate today, and then we’ll follow with explanations and comments that I hope the committee may find useful.

*Video presentation.*

**Dr Gurbin:** The messages that I hope have been carried to the committee by this videotape are really two. The first is that methanol simply is a liquid carrier of hydrogen, and that’s key. We now have a form—pretty well described on that tape, I think—of carrying hydrogen if we can produce it.

Secondly, the single carbon atom in methanol, which is the same as the single carbon atom in your natural gas, is arguably the least likely of any carbon fuel to do harm to our environment.

I’m happy to leave this tape with the committee to do with as they choose. There are certainly others available from the Methanol Institute.

**1200**

To complete the presentation, I would like to carry to the committee two other primary messages: the first is that the electricity system in Ontario, particularly in its deregulated form, represents many exciting opportunities for Ontario to achieve its transportation energy needs; and secondly, that hydrogen produced from existing Ontario electricity and technology can be used as a basis to produce a synthetic methanol, with enormous environmental and economic benefits to Ontarians.

BECL sincerely believes that consideration of the above premise is very consistent with the broad objectives that it has established for a future policy framework. While making specific comments on specific questions, we will limit ourselves to those areas we feel are most appropriate to our experience and our interests.

Our Ontario energy needs have been met historically by a system of generation, transmission and uses that has evolved, very often, with limited accountability for our activities. One of the few examples of full cost accounting today and over time is in real estate. The drive for our environmental improvement is really health-driven, with a growing appreciation for our clean air, clean water and clean soil. A translation of this to real costs, whether it is E coli, smog or the consequences of flood and severe storm with climate instabilities, is ultimately a conse-

quence of our polluting activities, many of which are energy-driven. Smog in Ontario is responsible for \$1 billion of additional direct health costs per year, perhaps as much as another \$9 billion in secondary costs. Carbon credits reflecting CO<sub>2</sub> emissions are on their way to impacting our energy production and use.

The electricity system: energy systems, specifically Ontario’s electricity system, from generation to transforming into transportation fuel, can mitigate not only the environmental impacts, but also economic consequences. Canada at present is disadvantaged in the world of carbon trading because of the current relatively limited dependence we have on fossil fuel generation of electricity. So we have a problem, a problem that’s not well recognized at the present time.

The production of hydrogen from Ontario’s electricity system has a unique historical footnote. In the early 1900s—1905 to be exact—the Stuart cell was the forerunner of electrolysis, right here in Ontario. A critical decision was made at that time committing us to a path to involve us in the century of electricity and all the competing technologies, like light bulbs, streetcars, telephones and now e-mail, which keep driving electricity’s extended use.

Hydrogen use in this century will similarly be technology-driven. The world will not run solely on hydrogen, but a combination of electricity and hydrogen technologies took us to the moon. The efficiencies that are already available from new and distributed electricity generation should lead us away from electricity produced by traditional higher-carbon sources.

Hydrogen production: the beauty of hydrogen production is in its compatibility with the present and any future electricity and energy system in Ontario. Intrinsicly, the electrolysis units are capable of being started and stopped in a moment to ensure system integrity and economy. Hydrogen can also be produced at the generation site in a set of very economically attractive ways.

The issue today is how to utilize the hydrogen and continue to accrue the environmental benefit without losing the economies. The infrastructure is not yet here. Methanol is a carbon and oxygen molecule with four hydrogen atoms. If you produce methanol from the traditional processes, there is a significant environmental cost. Fuel cells convert hydrogen to electricity. Methanol produced from hydrogen and oxygen from Ontario’s electricity system through electrolysis and the carbon from carbon dioxide can fuel fuel cells.

Our recommendations include, first of all, a strategy: to recognize the Ontario energy system as an electricity distribution system positioned well to underpin an evolution of cleaner generation and end-use technologies utilizing increased electricity and hydrogen. Public policy can be affected through this system to encourage generating activity and end-use technologies and practices with the least environmental consequences, ensuring future generations can live even better. The existing infrastructure, technological and industrial base can be harnessed to meet Ontario’s needs and provide world leadership in environmental protection. The application

of general principles represented by incorporating some of the following comments can be helpful in effectively implementing this strategy.

**Full cost accounting:** this important consideration is strongly supported as a means of levelling the playing field, with particular reference to carbon credits and trading, as well as the definition of "green." The traditional "renewable" labels are already vulnerable, as forests, fish and fresh water are under pressure. No single defined source should necessarily receive preferential consideration.

**The process:** a secretariat headed by the Ministry of Energy, Science and Technology should take responsibility for implementing the strategy. It should access existing programs for basic research; direct an energy centre for excellence dedicated to transportation fuels; and, finally, direct funds to appropriate demonstration projects with commercial applications in energy.

**Fuel cells:** fuel cell technology is integral to the energy strategy and can be compared in importance to this century to the microchip in the last century. Both have electricity flow as a common denominator. A fuel cell policy should be a first order of action, with funding, specific alliances and projects initiated as quickly as possible.

**The Ontario Energy Board:** Ontario's Electricity Act of 1998 has given the Ontario Energy Board a mandate to implement public policy. This would be as defined by the strategy outline.

**Ontario Power Generation Inc:** it seems imprudent to us to direct Ontario Power Generation Inc except as government policy generally will affect any generating activity and through the Ontario Energy Board, together with the independent market operator, especially to ensure system integrity and applications for the use of off-peak electricity generation capacity. We say this because Ontario Power Generation Inc has been changed from a crown corporation to a business supposedly operating under the Business Corporations Act now. Secondly, management practices and the evolution of business practices at the old Ontario Hydro are still a major question reflecting the monopoly position of the old Ontario Hydro.

Finally, several specific proposals, first on biogas. Atmospheric methane levels and nutrient management practices are public issues of major importance. Ontario could be well served by investigation and intervention.

ITER represents to us an opportunity for Canada and Ontario to rebuild credibility and a valuable position in the nuclear renaissance which is now underway.

I thank the committee for its indulgence and would certainly welcome any questions.

**The Chair:** Unfortunately, we are up to 21 minutes and we've run out of time. Thanks very much for your presentation. We appreciate your coming forward.

#### UNARIUS CANADA

**The Chair:** Our next presenter is Unarius Canada, Clifford Holland, if you would come forward. If you

have someone else with you for presentation, they can come forward as well. You have 20 minutes in total. After your presentation, if there's anything left of the 20 minutes, it will be divided for questions among the three caucuses. If for the sake of Hansard both of you would state your names clearly so they can get it recorded.

**Mr Clifford Holland:** My name is Clifford Holland.

**Mrs Shirley Holland:** My name is Shirley Holland.

**Mr Holland:** Nikola Tesla is the man who invented the 20th century. He's the man who gave us the alternating current. When he did so, he also was working on another energy system. When the people found out what he was working on, they decided to pull the financing because they were making so much money on the alternating current, so the tower that Nikola Tesla was building was left to ruin. But the work didn't stop there.

We have presented before you, and I hope you have them in hand, dissertations from Nikola Tesla and from the greatest scientists who have ever lived, including Oppenheimer, who gave us the atomic bomb.

Oppenheimer held back the secrets of atomic energy for a number of years before he was finally coerced into divulging what he had been working on. He now feels there is a tremendous danger. Atomic energy, as it is currently in use—by bombarding the atom with high frequencies, it releases the isotope, which is the fourth-dimensional counterpart of the atom, into the third dimension. That causes malformations, it causes disease, it causes all kinds of problems, and it's going to get worse. So he has a grave concern which he has enumerated here.

#### 1210

The suggestion is that, first of all, there has to be a recognition that there is a better system, a far better system, than atomic energy. Instead of bombarding the atom with high frequencies, what you do is raise the frequencies to a higher level and draw down the power from the isotope. The isotope is the fourth-dimensional counterpart of the atom. If you reach the isotope, what happens is that you tap into the vortex of the energy that's flowing into the isotope. When you tune into that vortex, you have an unlimited source of energy and you don't have any pollution; you have no problems with it whatsoever. Once it is set up, it runs continuously, with no maintenance, forever. It produces enough power for the entire world, not just for a local area.

The offshoots of this particular system are staggering. It provides a method whereby transportation systems would go through a complete revolution. For those who are traversing the land, they would again have unlimited power.

When this energy was being experimented with by Tesla, Edison and Henry Ford attempted to install it in automobiles. Unfortunately they didn't have the technology to complete the work. But it is possible to install it in an automobile, and it would be perhaps the size of a small radio. It would give you all the power to run the automobile, because it would be harmonically attuned to the tower itself.

The tower also produces a hollow beam. In the hollow beam that it produces, any aircraft would sit in the middle of this hollow beam and they would control the beam from the aircraft. So as they shoot the energy or the instructions back to the hollow beam, it swings through the sky like a flashlight. You can imagine the tremendous speeds that can be attained with that kind of technology.

It will allow individuals to produce entirely new chemicals, new elements, far beyond the 101 elements that are currently in existence. With the new elements, they will be able to produce a compound which will be soft to the touch, but it will be translucent. It will look similar to a crystal. It will be used to build homes. The actual walls and ceilings of the homes will be harmonically attuned to the tower, and through the process of hysteresis, as this energy is incepted, you would have two dials perhaps, one that you turn would control the warmth in the house or the cooling; the other one would change the colour of the walls to any colour you wish, depending on what you want to express.

The details for building this tower are enclosed in here. I've extracted this from 100 volumes of books, so it is not just what's in here. It's very, very detailed. What's being brought to your attention at this moment are collectively the greatest scientists who have ever lived. As you read this material, it is irrefutable. It is going to happen. There is no way in the world that it is not going to happen, but it's a matter of who is going to take the lead. Hopefully, we would do this in Canada.

The tower provides other resources: (1) it has no pollution whatsoever; (2) by virtue of developing this system, you will establish the base playing frequency of every single pollutant that's in existence. Because you have the base playing frequency and because you're dealing with high frequencies, you can radiate any pollutant you wish with these high frequencies and put them out of phase. You will cancel them out, so you eliminate pollution in its entirety.

The equipment also is harmonically attuned to healing equipment. The healing equipment would be capable of introspecting the supporting structure of the atoms of the physical body. All disease, irrespective of what that disease is, originates in the supporting structure of the atoms, which normally is not known to exist, but it comes in in vortexal patterns. The intelligence of the atoms of the physical body, as is true with all atomic structures, comes in that vortex.

Now, cancer, for example, is explained in great detail in this. Cancer is caused by a malformation in the vortex that's flowing into the atomic structure. This equipment provides the capability of scanning the supporting structure, the high-frequency structure, of the atomic body, and it will pinpoint anything that is out of balance, anything that is incorrect in that supporting structure. Once it has been pinpointed, there is another piece of equipment that's hooked into this, whereby when an individual is taken into another room, they can focus right in on the malformation. When they focus in on it, they are also able to tune in to the mental structure of the individual

and produce a picture of the originating cause of the problem. The moment that the person incepts the originating cause of any problem, it cancels it out, so there is nothing that will not be cancelled out. Disease as you know it will cease to exist. All the malformations of the mind and of the body and everything else are taken care of with this. It may seem a reach, but read the material. It's true. We have worked with these energies for over 30 years, and we know that it's valid. What we have learned to do is to do this with our minds, which is the next step, but right now you can do it with this equipment.

Now, this material could not be brought before the normal person until the year 2001. The reason for that was that we are passing through a line of force from the sun. That line of force that we're passing through is causing all of the weather disturbances that we're running into. It's not caused by pollution at all. Pollution is terrible, but it is not the cause of global warming. Global warming is caused by this transition. As we moved through this line of force or the reciprocal of it 12,000 years ago, there was an ice age that was set in place. As we move 12,000 years into the future, we move from the negative to the positive side of those lines of force. So there has been a very, very slow, gradual warming that's been taking place during this entire transition until we hit the zenith point. At the zenith point, which is now, we then pass through the line of force. The only beauty of this is that we're moving from negative to positive, not from positive to negative as we did before. So at this point, it's appropriate that now that we are pretty well through the transition, this material could be brought to light.

I'd welcome any questions. There's a lot more material, instructions on how to build it. I'd like to reiterate that there is no maintenance for this whatsoever once it's set up. If there are any questions, I'd be happy to discuss it with you.

**The Chair:** Certainly. Thank you very much for the presentation. We have approximately two and a half minutes per caucus.

**Ms Churley:** Thank you very much for your presentation. I'm quite curious about who wrote this document, whose voices are speaking for all these scientists.

**Mr Holland:** It's very difficult to believe, but the man who authored this was their teacher. When you read the material, you'll come to understand exactly who he was. He was a very, very highly evolved scientist and being. His name was Dr Ernest Norman and he is revered.

**The Chair:** Any other questions, Ms Churley?

**Ms Churley:** No.

**The Chair:** The government side?

**Mr Hastings:** Is Tesla taught in physics today, do you know? Is Tesla and his ideas taught in our curriculum today?

**Mr Holland:** Are they in here? They're all embedded in this.

**Interjection:** No, in the school curriculum.

**Mr Hastings:** In the school system.

**Mr Holland:** No. Tesla was above—people have attempted for years to try to penetrate the information that Tesla made available. He was the man who built the generating station at Niagara Falls. He offered to build this tower, which would prevent any enemy aircraft from coming into the States because it can automatically repel anything coming toward it. But they pulled the financing, so it wasn't completed.

A lot of people have been trying for many, many years to understand Tesla. It's his words that are in here, and you can read them yourselves.

**Mr Hastings:** What's your best-cost estimation of how much it would take to build one of these towers?

**Mr Holland:** I have no idea. I do know what you would need. You would need, first of all, an administrative staff. You would need a group of nuclear physicists and scientists of different persuasions to come together as one mind to work on this project. I would say that if the people are prepared, apparently—they'd be prepared mentally in order to incept this information. It's a matter of putting the word out and letting it happen. And I think you would find that they would just come out of everywhere, that the people would respond to this, especially once they've read the material. These people are very, very well known.

See, right now it is generally believed that light is caused by the interaction between magnetism and electricity. Where the two come together at a nodal point, it creates light. But what they're informing us here is that's not true. What happens is that at those points where they come together, you have to have a third factor, and that third factor is a fourth-dimensional energy pattern, a vortex, that strikes the nodal points, and when it strikes the nodal points, that's your light. But they're saying if you want this kind of power, you have to get up to the frequencies where you bypass that particular point where it produces light, and you actually tap into the nodal point at the higher level. When you tap into that point at the higher level, you're into the isotope, or the demodulation point, from the fourth to the third dimension.

**The Chair:** Dr Bountrogianni?

**Mrs Bountrogianni:** I don't have any questions. Thank you for your presentation.

**The Chair:** In the extra time, anything? No.

OK. Thank you very much for your presentation. Intriguing information that you brought to light for us.

**Mr Holland:** I hope you take it seriously, I really do, because I couldn't be more serious. I've spent a lifetime studying this and I know that it's valid, totally.

**The Chair:** Thank you.

**Mr Holland:** Thank you very much for the opportunity to speak to you.

**The Chair:** Our clerk would like to check with committee members in connection with travel. Tomorrow's travel to Ottawa is in order. I believe there shouldn't be any complications there. The other one has to do with the price for travel next week, a significant difference if people are committed ahead of time.

Is that basically what you were looking for?

**Clerk of the Committee (Ms Tonia Grannum):** No. I need to know what people are doing so I can actually book tickets for the out-west trip. I can talk to people separately, but we need to book tomorrow.

**Mr Gilchrist:** Over the lunch hour is much easier.

**The Chair:** I think there's some flexibility in the committee. There was some desire to travel as a unit, but not absolutely necessary. Maybe there can be some private discussions, and we'll take it up at 4 o'clock as we move to adjournment prior to moving to Ottawa?

Hearing nothing further, the committee now stands recessed until 2 o'clock.

*The committee recessed from 1224 to 1400.*

#### ASSOCIATED TORONTO TAXICAB CO-OPERATIVE

**The Chair:** We will call to order the select committee on alternative fuels for the afternoon session. Starting at 2 o'clock, we have Co-Op taxis, and it's Peter Zahakos, operations manager. Would you please come forward. As you start, just restate your name for the sake of Hansard. You have 20 minutes in total. What you don't use in presentation will be divided among the three caucuses for questions and statements.

**Mr Peter Zahakos:** I hope you have lots of questions because I can give you many answers, on natural gas, anyway.

**The Chair:** For your interest—and you may have been following—we had a presentation yesterday from a concerned taxi person and then again today we had some people from natural gas speaking about it. So we look forward to your comments.

**Mr Zahakos:** I want to take the opportunity to thank the members of the select committee on alternative fuels for allowing me to make a presentation to you today. My name is Peter Zahakos and I'm the general manager of Associated Toronto TaxiCab Co-Operative Ltd, commonly known as Co-Op Cabs, the red-and-yellow cabs in the city of Toronto. I'm here to speak to you today on a very important issue, which is the environment. In the city of Toronto we have serious problems in the summer with smog and pollution. Those are the issues which I thought were very paramount to the people in Toronto.

In about 1998, the city of Toronto went through the reform bylaw concerning taxicabs, and they wanted to get newer cabs, better cabs on the road. At the time, they wrestled with how to get better cabs on the road. The one thing they did was they gave an extension for natural gas cars. If you bought or purchased a natural gas car, you were able to keep the car on the road for two years longer than a normal cab, from five years to seven years.

We have talked to many people about the issues of natural gas, and you see, you have to be practical. You have to look at what's available for the environment. At that time we did some research, and we found that natural gas does not have sulphur in it, for example, so it's a cleaner fuel. We thought that we could do our small bit to help the environment in Toronto. We started by con-

verting some of our older vehicles, the 1997s, and then we started a program of purchasing brand new OEMs. We bought some 1999, 2000 and 2001 vehicles, and we're in the process of buying new vehicles again this year.

We found that the natural gas is a controversial fuel in terms of the use. When you start a new project there are always problems that occur in the beginning. There are always break-in periods. Basically our experience has been, especially with the OEMs, that the vehicles from the factory, which are factory-built natural gas, seem to be all right. There were some minor problems that were well taken care of by Ford. You balance it. It's a Crown Victoria. It's a big, roomy car. It's good for the taxi industry. It's the type of vehicle that's heavy-duty equipped; it's built to be on the road.

The more I started studying about natural gas and the environment, I found out that there's a lot of technology coming for the future. For example, they talk about fuel cells. Maybe it's a good technology—I would hope that it would be—but to get to that level of fuel cells, you have to have some kind of infrastructure. What many people forget is that natural gas and the technology that's being incorporated today for natural gas and the vehicles is providing a bridge to that fuel cell technology. Hopefully in about five or 10 years we would have that being introduced in the city of Toronto.

Basically that's what I wanted to say. We have developed a policy at Co-Op Cabs as being an environmentally friendly company. We wanted to be first off the mark to have a green cab company. We've invested lots of money in buying these vehicles. We also invested some money in becoming a filling station. We have the most recent technology that fills our cabs with natural gas. It's so efficient that nothing leaks out into the environment, or there's no spillover effect on the pollution and that. So we're committed to the policy.

When we started in 1999, the price of natural gas was much cheaper than gasoline and the incentives that were offered to us at the time were appropriate. Basically it made us equal. You could buy a one-year-old vehicle used as a taxi cab on gasoline or you could buy a brand new OEM, and with the existing incentives it came equal.

Today, things have changed; the price of natural gas and the price of gasoline are about the same. So there is not that incentive there any longer in terms of making it more economically viable for the drivers. That's why I would suggest, if you had it in your heart, that a simple thing like eliminating the provincial sales tax on OEM vehicles would maintain the program, would promote the program, and really I don't think would cost the provincial government much money for something as minor as that.

As more and more of these cars are being used, the technology is being improved. For example, in the 2003 model year the tanks are a bit bigger, so you have a greater range, and the more they're being used—it's like what comes first, the chicken or the egg? You get more technology being improved. Hopefully, when we look toward the future, this technology will be the basis for

even better technology in the future to address the environmental concerns. That's it.

**The Chair:** Thanks very much. We have about four minutes per caucus.

**Mrs Bountrogianni:** Thank you and welcome, Mr Zahakos. This has become an issue ever since yesterday for us. There's been a controversy—I'm sure you've heard about it—

**Mr Zahakos:** Oh, yes.

**Mrs Bountrogianni:**—based on the Globe and Mail report, and also one of your colleagues yesterday tried to dispel the efficiency of natural gas in the cabs. Today we had a gentleman who gave an explanation for that discrepancy. I'd like your explanation. Why are there people out there who are saying that the Drive Clean program shows that it's not environmentally better to go with natural gas in cabs?

**Mr Zahakos:** The Drive Clean program studies gasoline emissions and studies the emissions that are coming out of the tailpipe. It doesn't take into consideration the type of fuel. Granted, maybe five years ago when you converted an old car that was burning oil—don't expect, because you're converting to natural gas, to turn it into a brand new car. So the expectations that some people had, saying, "Well, you know, it's burning oil"—it doesn't matter. It shouldn't be on the road anyway.

Further to that, as I said, we started with 1997. These cars have not had vehicle emissions done yet; they're just starting because of the rules for getting the licences renewed. Personally, I've renewed about six licences in the past month—natural gas, 1997s. Four of them passed; one failed the vehicle emission. The reason it failed the vehicle emission is the O<sub>2</sub> sensor, which has nothing to do with the fuel; it has to do with the maintenance. What the vehicle emission testing does is test the maintenance of a vehicle, not the actual fuel. So if you have sloppy maintenance, of course you're going to have a sloppy car regardless of the type of fuel. One of the recommendations I made to the city of Toronto last year was that if you're concerned about that, have a vehicle emission done on a yearly basis in the city of Toronto, and then you will catch these maintenance problems.

Further to that, I renewed our brand new OEM 1999. That passed with no problem, flying colours, the vehicle emission.

All the 2000s that we bought have not reached the point that they have to be tested yet. So in what has been tested so far, you're looking at data that's five or six years old, that is based on really outdated technology that has no bearing on today or the future.

**Mrs Bountrogianni:** That was an explanation, so thank you very much.

**Ms Churley:** Thanks for coming before us today. I see you're actually quoted in this story.

**Mr Zahakos:** Oh, yes. I gave a very good interview.

**Ms Churley:** We got a small piece of that interview, I'll bet.

**Mr Zahakos:** I'm sort of surprised with the Globe and Mail. Usually the Globe and Mail is very balanced and objective. I guess in this case they forgot that.

**Ms Churley:** You ask politicians, any of us from any party, about any of the media and we'll tell you how balanced we think the media are all the time.

Asked whether you'd buy another \$35,000 natural gas car if the city took away the two-year extension, it said your reaction was swift.

**Mr Zahakos:** That's correct. It was very swift.

**Ms Churley:** You said, "No. It wouldn't be economically viable at all. With the two-year extension, what it's done is made it a level playing field."

**Mr Zahakos:** That's correct.

**Ms Churley:** So you stand by that. What you're saying here to us is that in order for this to move forward, incentives need to be put in place to make it viable.

**Mr Zahakos:** Definitely. You've got to remember now, if we compare a brand new OEM that's about \$37,000, natural gas from the factory, to the same vehicle, a 2002 Crown Victoria, on gasoline, you're talking about a \$7,000 to \$8,000 difference.

**Ms Churley:** Right, \$17,000. Wow.

**Mr Zahakos:** It's \$7,000 to \$8,000, just the difference, OK? The price of gasoline today has no bearing, so if I were going to buy one of the two cars and just look at it from an economic point of view, I'd say, "Why spend that extra money?" It is not economically viable. If you have the incentives in there and you make it equal, then you can make a decision and say, "They're both economically viable. Why can't I do the proper environmental thing? Why can't I do what's good for business in the city, have a social conscience and do what's good for the environment?" because they're both economically viable. Then I would choose the environmentally sensitive one.

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**Ms Churley:** Which is why you're asking this committee to recommend some incentive from the provincial government.

**Mr Zahakos:** That's correct.

**Ms Churley:** The other thing I wanted to ask you, then: from the same article, councillor Howard Moscoe, chairman of the subcommittee that deals with cab licensing and also the transit commission, has said that their TTC testing has caused all kinds of problems with buses and things. He seems to be implying that the city of Toronto is going to give up on the natural gas thing. As he put it—he called it a boondoggle—it's collapsing.

From what we heard this morning, from what you're saying, my sense is that there's a bit of throwing the baby out with the bathwater here, that we're talking about almost two different animals here: the converted vehicle, which had a whole host of problems associated with it, and new vehicles that are designed to burn natural gas. Perhaps they're making a mistake. Would that be—

**Mr Zahakos:** I would think they're making a mistake. You used to be on city council and I'm sure—

**Ms Churley:** You've done your homework. Yes, that's right.

**Mr Zahakos:** You probably know how Mr Moscoe is and how he takes positions.

**Ms Churley:** This is all on the record, so I'll be careful here.

**Mr Zahakos:** I'll say this in front of Howard; I don't care. He has something to say. He does not want cars to be on the road more than five years. He really does not like the two-year extension. However, Jack Layton endorsed the extension.

**Ms Churley:** So he has endorsed it?

**Mr Zahakos:** Definitely. Not only that, we also got funding initially from the Toronto Atmospheric Fund to proceed with this.

**Ms Churley:** Which, as you know, I had a hand in establishing.

**Mr Zahakos:** Yes, I know. So if you look at the environmentalists on council, they're for it. They're saying, "Why not?" This exists today—

**Ms Churley:** So I've got to go and beat up Howard Moscoe, in other words.

**Mr Zahakos:** Yes. If you'd like a hand, I'd gladly help you.

**Ms Churley:** That's on the record too.

**Mr Zahakos:** That could be on the record. But like I said, the environmentalists on council say this is a good idea. It's a start. It's something. It's a start and we're working on it. Why not? Why throw out everything? This is one thing that this group can do, is give us that sales tax rebate. It's a minor thing—a thousand bucks—but that helps with the car. As I said, as you develop more technology, it'll go toward the future.

A lot is being made about the fuel cell technology, but what is the fuel cell technology going to work on? Either electricity or hydrogen. Where are you going to get the hydrogen from? You get it from natural gas. If you want all these cars to be proper and use the new technology 10 years from now, you're going to have to have an infrastructure. We've already got a filling station that's on natural gas. I would assume it would be easy to convert it to selling hydrogen. We're in a downtown location. It's a step-by-step approach. We all grow up, but we start as babies and we learn how to walk. It's the same thing with technology. I wish we had a green technology that was available today where I could buy cars tomorrow and be completely clean, but it doesn't exist.

**Ms Churley:** We appreciate your ongoing commitment to this project. Thank you. We'll do what we can.

**The Chair:** We really should move on, but just a very neutral observation. It's a very special day. You disagreed with Mr Moscoe and earlier agreed with Mr O'Toole. That's just something I couldn't help but observe.

**Ms Churley:** Just for the record, I have often disagreed with Mr Moscoe.

**Mr Zahakos:** You're in a good group.

**Mr O'Toole:** It's kind of the Chair to acknowledge that I do try to work with all parties and all groups to move forward.

That being said, thank you, Mr Zahakos. I apologize for not being here, but I did catch part of it on television.

The reason I came down was because we had a presentation—I may have missed the thrust of yours—from Mr Manley yesterday, and his position, as I understand it, was basically to stop the artificial subsidy of natural gas cars for all of the above reasons: first of all, with Drive Clean, they fail higher, blah, blah, blah. Your position is you want to keep them?

**Mr Zahakos:** Definitely. To respond to Mr Manley's position, yes, there were some Drive Clean tests that were done five years ago and the older cars did fail, but what is being tested in that is not the actual fuel. Whether we like it or not, natural gas has no sulphur in it and of course there aren't going to be those kinds of emissions. Mr Manley talked about cars that failed that were 1995s and older. Yes, you cannot take an old car that's burning oil, convert it to natural gas and expect it to be a new car. That's the reality. The cars I own are just being tested now.

**Mr O'Toole:** I just want to get to a couple of questions.

**Mr Zahakos:** Sure.

**Mr O'Toole:** "Emissions: the natural gas industry's claim of huge reductions in emissions were and are untrue." He basically accused them of lying. He went on to say, and I kind of agreed with this point, that the Drive Clean test should be the definitive test. If they can't pass it, giving a vehicle, as a right of existence, an extra year or two isn't a proper mechanism at all. If it fails, it should be taken off the road—bingo—because there are no punitive measures other than the hundred bucks or whatever that it costs to get a provisional pass.

Don't you think we've gone to a lot of trouble to make sure all cars, regardless of the fuel, should pass the Drive Clean test to the manufacturer's standards, and that should be the test, not how old the car is? I know there's a lot of money involved in a taxi and all that kind of stuff.

**Mr Zahakos:** One of the things I've talked to city council about is exactly that. If you're going to do a test, it should be a fair test and you should know what you're testing. You should be testing the fuel and all those things. One of the recommendations we made in front of council was that you do a scientific test and a proper test.

There's a lot of debate about whether Drive Clean tests natural gas or alternate fuels. Yes, it tests what comes out of the fuel pipe, but that's what's coming out of the fuel pipe. It doesn't test the actual fuel itself.

Further to this, we just started testing our natural gas cars. The 1997s have to be renewed this year and are starting to be tested—they were not tested before—and they're passing.

**Mr O'Toole:** I have one more point I want to make. On fuel savings he says, "The natural gas industry claims"—and he felt there is collusion with the industry itself—"that there would be as much as 40% fuel savings in the usage of their product. A chart included in my May 16, 2000 report clearly showed that was untrue."

There are charts here. They actually use more gas, more fuel. They fail more frequently, and they use more

fuel. Toronto had better get to the bottom of it. It sounds good. Everybody thinks they're friendlier and less polluting. It sounds to me like a lot of methanol, or alternative fuel. It does. It's ridiculous.

**Mr Zahakos:** OK. I'll talk in a very practical sense. In 1999, when we converted our vehicles to natural gas, our drivers were saving \$10 to \$12 a shift on fuel. Over a week they would save \$60 to \$70. They would save—

**Mr O'Toole:** If that's the case—

**The Chair:** Please let him finish, Mr O'Toole. Your time is up.

**Mr O'Toole:** —the marketplace will decide.

**Mr Zahakos:** That's right, and they did. In 1999 and 2000, they did. Obviously, they did. At that time more cars were being converted—that's correct—because drivers were saving money. The market has changed today. Today, the price of gasoline and the price of natural gas is almost the same, so because of that—we do not dictate the price of natural gas or gasoline. We sell both products in our station. All I'm saying to you is that there are international reasons why the price of gas goes up or down. Today the climate is really warm, so natural gas is lower. There might be a war somewhere in Africa, and all of a sudden the price of gas goes up. Those are things we don't know.

But we have to develop a long-term plan, and our long-term plan was based on what existed in 1999 and 2000. At that time, the price of gas was high. We were lucky. We had to sign a contract with Direct Energy to get a low price for natural gas, and we were able to carry that on. I can't forecast what the price of gasoline will be three years from now. When I buy vehicles they're for five to seven years. We have a 10-year commitment on our dispensing station. Sure, I wish I knew what the price would be.

I can't change my policy on a day-to-day basis either. I have to take a long-term look and say OK, regardless of what you say, at least 100 or so cabs that I have on the road today are spewing less pollution on the whole.

**The Chair:** Thank you very much. We really appreciate you coming forward and giving us a different view than we were hearing yesterday.

**Mr Zahakos:** We put our money where our mouth is and we've done it.

**The Chair:** Thanks very much.

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#### ONTARIO SOYBEAN GROWERS

**The Chair:** The next presentation is from the Ontario Soybean Growers, Mr Matt McLean, board secretary, if you and anyone else in your delegation would come forward.

**Mr Matt McLean:** Just myself. I'll be making a PowerPoint presentation today.

**Mr O'Toole:** Except you can't get the computer to work.

**Mr McLean:** You've got my presentation in a hand-out there, so—

**The Chair:** That's all we need. We can handle paper technology.

**Mr McLean:** I think I'm ready here. As you mentioned, my name is Matt McLean and I am board secretary for the Ontario Soybean Growers. I would first of all like to thank the committee for providing the opportunity for me to come and speak with you again today. I spoke with you back in August of last year, and at that time basically gave you kind of a background on what biodiesel is, its characteristics and some of the benefits of the fuel.

Today I want to change gears a little bit and focus a little bit more on biodiesel's use and maybe make some recommendations as far as getting the biodiesel industry up and going here in Ontario. As you'll see, my presentation is Biodiesel: Cleaner Air from Canadian Farmers.

I'll start off with just a little bit about the Ontario Soybean Growers. Our organization is a commodity marketing board representing the province's 25,000 soybean producers. The Ontario Soybean Growers' interest in biodiesel is that we see it as an opportunity to create new market opportunities for soybean oil while also providing a cleaner-burning alternative to fossil fuels.

To start off, I just want to introduce this by saying that biodiesel is not a fad fuel. It's not developed here in Canada per se to a certain extent, but I think if you look worldwide you can see that it's in use to a great extent.

I just wanted to go through some of this for you so you get a better understanding. In 2001, the European Union produced and used approximately 300 million gallons of biodiesel. In the US last year, they produced and used approximately 35 million gallons of biodiesel. So as you can see, both in Europe and the US this is not just a small fad fuel. It is expected that by 2016 US production will grow to 809 million gallons. That is assuming a renewable standard, which is currently being looked at as far as legislation being implemented. Currently in the US, there are over 100 major fleets using biodiesel and over 65 million kilometres logged.

I want to talk a little bit about what is the driving force behind this both in Europe and the US. In the European Union, several countries have in place systems of tax incentives and specific legislation that both promotes and regulates the use of biodiesel. I've listed here basically the five main leaders in the European Union as far as the use of biodiesel, those being Austria, France, Germany, Italy and Sweden. The benefits of biodiesel are also being recognized through the work of the European Commission's climate change program. They are looking at implementing strategies and programs to address some of the things outlined in the Kyoto Protocol as far as reducing some greenhouse gases.

As far as some of the main driving forces behind biodiesel's rapid uptake and use in the United States, the main one is probably the Energy Policy Act of 1992, or EPAct. This act was amended in 1998 to include biodiesel as an option for covered fleets to meet a portion of their annual alternative fuel vehicle acquisition requirements. Basically, EPAct was put in place requiring large

fleets to purchase and use a certain amount of alternative fuels. It was amended in 1988 to add biodiesel as an alternative so that a large fleet, instead of having to go out and buy an alternative fuel vehicle, as long as they used a certain portion, and that being 450 gallons of biodiesel a year, got a vehicle acquisition credit for using the fuel.

Another main driving force in the US has been the US Department of Agriculture's commodity credit program. This is essentially a subsidy program which makes payments to producers of biodiesel to offset part of the cost of buying commodities to make biodiesel. I think last year this amounted to about a \$1.20-a-gallon subsidy for biodiesel production in the US, and that was biodiesel being produced from soybeans. Last year, the CCC program just covered soybeans. For 2002, they've expanded that program to include other feedstocks such as recycled oils and animal fats.

In addition, in the US there are several states working on renewable fuel mandates. I think the total is about 16 or 17 states have pending legislation right now looking at a renewable fuel mandate in their states. This is also going on at the national level. There's a Senate Bill 1006 by Hagel and Johnson looking at setting up a renewable fuel mandate. In addition, there's also Senate Bill 1058 by Hutchinson and Dayton, which is calling for a national-level exemption on the federal diesel excise tax for diesel fuel blended with biodiesel.

Switching gears a little bit, I want to talk to you about what are some of the developments going on here in Canada as far as biodiesel. I understand Tim Haig spoke to you a little bit this morning. He's from Biox Corp. As you're probably well aware, they have constructed a million-litre-per-year demonstration plant in Oakville, Ontario. It looks like quite a promising new technology, developed right here in Ontario. I think it's just waiting, on the verge of getting some things going up commercially here in Ontario.

Another big development is in the province of Quebec. Montreal transit in March 2002 will be beginning a biodiesel pilot study using 140 of their Montreal transit buses. They'll be testing and running their buses on blends ranging from 5% to 20%. This study, once underway, will be the largest biodiesel test study in North America. The fuel used for this is being derived from both soybean oil and rendered animal fats.

Another interesting development right here in Toronto, as I'm sure some of you are aware, is that in October, Toronto Hydro announced that they're going to be running this winter, or are running right now, 100 of their diesel vehicles on a 20% biodiesel blend. They're testing this right now, and if testing is successful, they intend on expanding the use of biodiesel to their full fleet of approximately 500 vehicles and also increase the level of biodiesel to 100% this summer. So that's a very interesting development right here in Toronto.

Other things going on: there are efforts currently underway through the middle distillate fuels committee of the Canadian General Standards Board. They're look-



ing at developing a Canadian standard for biodiesel. This will be developed very much similar to a standard in the US that has just passed this past summer, the ASTM standard for biodiesel. The development of a standard like this will greatly ease the introduction of biodiesel into the Canadian fuel market and, I think, probably give some reassurance to customers of the quality of fuel being developed.

I want to shift a little bit and just give you a few policy recommendations from the Ontario Soybean Growers' point of view on maybe some directions that this committee can recommend and carry on through to government. The first one and, from my point of view, a very critical one: I think it's essential that biodiesel have tax parity with the other alternative fuels in Ontario. Currently ethanol, propane and compressed natural gas have a tax exemption for the provincial on-road fuel tax. I think this is a very critical thing to put in place for biodiesel. I think it would just put it on par with some of the other fuels and make it a little bit more economically attractive to some companies as far as putting up commercial production facilities and selling the fuel right here in Ontario.

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The second recommendation is to look at the establishment of a renewable fuels mandate, and that that be a mandate requiring that all on-road transportation fuels contain a certain percentage of renewable content. In the US right now there's a big drive for this, both at the state level, as I mentioned, and the national level. Basically, driving this has a lot to do with cutting back emissions, environmental reasons, as well as fuel security issues as far as using more fuel that's produced domestically and renewable on top of that.

The third policy recommendation I have is to establish a government renewable fuels procurement policy. I think this could very much tie in with a mandate as well. This would be the government taking a bit of a lead as far as using and promoting the use of some of the renewable fuels such as biodiesel here in Ontario and maybe taking it a step further and procuring fuel at a higher level than what would be mandated through that mandate. I think this is the kind of policy that should very much show a leadership role as far as moving toward renewable fuel sources.

Just to summarize a bit, I think the timing couldn't be better for Ontario to lead the way in developing the markets and the use of biodiesel here in Canada. As you can see, worldwide—in Europe and the US—there is very much a push to getting these fuels on the market. Right here in Canada I think there's a perfect opportunity for Ontario to lead the way for Canadians as far as promoting use and getting renewable fuels on the market.

Through the implementation of effective incentives and policies, such as the tax exemption, the renewable fuels mandate and the government procurement policy will encourage the production and use of biodiesel fuel in Ontario, which will benefit not only the environment but public health, agriculture and economic development.

That's all I have, and I welcome any questions.

**The Chair:** We have about three and a half minutes for each caucus.

**Ms Churley:** Thank you for coming back again. Did you read our report?

**Mr McLean:** Yes, I did.

**Ms Churley:** What did you think?

**Mr McLean:** A good report.

**Ms Churley:** A good first step.

**Mr McLean:** Yes. I think a lot of it was bringing in the comments of a lot of people.

**Ms Churley:** Were you happy enough with our comments around alternative fuels specifically?

**Mr McLean:** Yes. Like you say, I think it's a good first step and heading in the right direction.

**Ms Churley:** Certainly the first report was to tell people what we heard. In the next, we need to have more specific recommendations to the government, which is why your coming back and talking to us again today is important as we try to determine what those recommendations are.

I'm interested in a couple of things in your presentation. You said, "If testing is successful." I'm just wondering what kinds of problems they will be looking for in the testing of biodiesel.

**Mr McLean:** It probably wasn't great wording for me. I don't foresee that there would be any problems. Like anything new, they're trying it out to see if it works for them. In any talking I've been doing with them, so far it has been working great and they're very keen on it. I didn't say that foreseeing that there would be any problems with it.

**Ms Churley:** I understand that, but whenever you hear it's hydro and Montreal—I hadn't realized that Montreal was—is it Montreal Transportation?

**Mr McLean:** Yes.

**Ms Churley:** They're paying for this?

**Mr McLean:** Yes.

**Ms Churley:** What's required for this? Is it a special conversion of the existing buses?

**Mr McLean:** No. That's the nice thing about biodiesel: there's no conversion necessary at all. It's strictly pour it in the tank and go. I think part of their testing will be looking at it as far as what their fuel mileage is compared to using straight diesel, looking at the emissions and stuff; just basically looking at the fuel and seeing that it's meeting their requirement of reducing emissions.

**Ms Churley:** Who determines and how is it determined what proportion to use?

**Mr McLean:** A lot of the testing that has been done in the US has predominantly been on a 20% blend.

**Ms Churley:** You probably told us all this before.

**Mr McLean:** It was the best trade-off as far as getting the best environmental punch for the economics. The 20% blend is a standard blend.

**Ms Churley:** I believe you said that in the US there is a big push to get transportation fuels containing a certain

percentage of renewable content but it hasn't happened yet in any state, as far as you know.

**Mr McLean:** No state has officially passed legislation, but a lot of them are very close. Minnesota is the big one leading the way. I think if you see something go there, the rest are going to follow.

**Ms Churley:** Because that'll help?

**Mr McLean:** Yes.

**Ms Churley:** If it happens somewhere, then it can push others into doing it. That's great. OK, thank you.

**Mr Hastings:** Mr McLean, has the Toronto Transit Commission or any other transit commission in Ontario approached the Ontario Soybean Growers Association or vice versa in terms of trying to get them to look at biodiesel?

**Mr McLean:** We have in the past. Actually, before I started with the board, probably back about four or five years ago, the soybean growers sponsored a bit of a study using biodiesel in Toronto Transit Commission subway utility vehicles.

**Mr Hastings:** Shocking. They actually tried it?

**Mr McLean:** Yes, they used it. I think there were some problems with their testing at the time due to the ventilation system. So it's not that they didn't get the results they wanted, but the ventilation system at the time of testing wasn't working properly, so I don't think they were backing some of the results in the tests. But they were looking good as far as reducing some of the emissions associated with—

**Mr Hastings:** If you had a better tax treatment for biodiesel in Ontario, how would that affect the subsidies they're now getting for soybean production, or how would it reduce the existing subsidy compared to the one you mentioned in the US, where in some states it's \$1.20?

**Mr McLean:** In soybean production—I don't know how much you know as far as the subsidy programs. A lot of them are based on the market value of soybeans. Once they drop below a certain point, it kicks in. We see the opportunity in soybeans as far as biodiesel increasing the market for soybean oil. Right now in Ontario, 65% of the soybeans are crushed in the crushing industry for soybean meal, which goes to the livestock industry, and soybean oil, which predominantly goes to the food industry. Basically the limiting factor on how much is crushed right here in Ontario is getting rid of the soybean oil. It's in excess. If we could find another value-added market for the soybean oil, we'd be able to crush more soybeans here in Ontario as opposed to importing. Right now we import approximately 800 million metric tonnes of soybean meal from the US for livestock feed. So if we can get a market for the oil, we can increase crushed, decrease some of the reliance on imports, bring the value of soybeans up and therefore some of those subsidies wouldn't have to kick in. You'd have a higher value for the soybean crop.

**Mr Hastings:** Hence the tax treatment you're advocating?

**Mr McLean:** Yes.

**Mr O'Toole:** I just wanted to acknowledge how important it is. I represent primarily an agricultural riding and, of course, soybeans. I'm very familiar with their pressure to recognize it as a viable alternative to the carbon-based fuels. I just want to be on record as saying I support them and the initiatives to educate the rest of us. Is there anything specifically the government can do, or should this be a case of the tax? The tax today, if it was treated the same as some of the others that are supported, is that the approach you want?

**Mr McLean:** I think it's an approach that is somewhat critical as far as getting the industry up and developed here in Ontario. It has been a benefit on the ethanol end of things as far as getting that industry kick-started and up and going. I think that's really what we need on the diesel fuel end of things so that it's put on a par with some of the other alternative fuels to get the industry up and going. If you put something in place, there are people out there who will take that opportunity and run with it.

**The Chair:** Thank you very much. We appreciate your presentation and the content.

1440

## KINECTRICS

**The Chair:** Our next presenter is Kinectrics, Mr Robert Stasko, director of business development. As you begin, state your name for the sake of Hansard.

**Mr Robert Stasko:** Good Afternoon. My name is Bob Stasko, and I'm here representing Kinectrics, a company that some of you may recall was formerly Ontario Hydro Technologies. These days we are diverting a significant amount of our activity and resources toward the development of emerging energy technologies.

I thank you for letting me speak to the committee yet again, having done that once before in August. Today I will be responding to the report, and I will comment that I found the report to be a very useful compilation of the witness presentations up to that point, and presumably of most of the other findings you've accumulated as a result of your deliberations.

It's tempting to respond to the report in general. But I note that there were 60 policy questions, and I'm not going to try to answer all of those 60 policy questions. I'm going to limit my response today to basically two areas: Summary A, the section that talks about programs and measures for green or renewable energy—I'd like to look at the policy options that were suggested there. Secondly, I'd like to respond to some of the specific energy technologies in Summary B, and those would be ones that we have a particularly strong interest in developing or, in some cases, things that we felt didn't get sufficient witness submissions for a proper evaluation.

If we could flip to the first page—I should mention that I was tempted to bring my laptop computer, but after the misadventure I had last time, I thought we would stick to paper.

Basically, there were four approaches mentioned for programs and measures for renewable energy: a renewable portfolio standard, a public benefit fund or system charge, net metering for distributed energy sources and, finally, energy efficiency standards. I added “for energy utilization in the 21st century.” I wanted to address that specifically.

Talking about the renewable portfolio standard, I just want to comment that clearly this is a policy approach that has worked in other jurisdictions and has the opportunity to complement the development of green power generation here in Ontario. This will allow one standard for all major suppliers and will level the playing field if implemented correctly.

I should mention, though, that defining what constitutes a major supplier in Ontario in the present developing market will be a challenge. I presume that will be a task of the OEB, although it could be with government direction. Finally, defining the appropriate renewables mix for Ontario and which technologies are green will also be a challenge.

Flipping to system benefit charges, again there’s ample experience in other jurisdictions to draw from, and there has been some success elsewhere using this approach. I’m thinking particularly of California, although that might not be the best example to use right now. But 10 years ago they had a system charge that worked very well. The problem with that, of course, is that there was not a market-opening issue that coincided somewhat with that. I feel there would be quite a resistance to adding yet another system charge here in Ontario when there’s sufficient concern right now about the price of electricity when the market opens.

I would suggest that rather than a new system, we re-examine the issue of the debt recovery charge and perhaps examine ways of looking at a differential debt recovery charge that could be used to flow funds to developing new energy technologies. This could be either by advantaging those technologies by a lower DRC or by flowing some of the DRC collected through to development of those technologies.

About net metering and green power—I was a little puzzled by this, and maybe it’s my understanding. My understanding of the present regulations regarding small generators of green power is that they will be on “must run status” from the IMO as long there is a market for green energy in this province. I think you’ve all heard, and I presume I’m not the only one who will suggest, that there is in fact less green power in Ontario right now, and projected into the near future, than the demand we’ve polled for that, to the tune of where Ontario Power Generation, I think, is trying to get 500 megawatts in place. I could be wrong here, but I believe they’re up to 125 right now.

I guess what I’m saying is that with some care, and using existing structures, this issue of net metering may be somewhat moot. Nonetheless, there are certain technologies which are not necessarily renewable that might still require some differential treatment. I’m

thinking again of small, distributed, more environmentally benign technologies that presently have to compete with large traditional generators.

I can’t help but mention the irony that green power will be sold at a premium in this province—that’s the expectation—even though it adds the least to the externalities in environmental costs that presently are off the balance sheet.

Finally, enhanced energy efficiency—what I call triple-E—is no doubt one of the most cost-effective ways to generate megawatts in Ontario. Ontario has been a jurisdiction that in the past and up to the present has actually been very good at generating new standards and regulations to ensure energy-efficient products on the utilization side. I can cite some examples later if we have time for questions.

However, what I’d like to address today is that there is a whole new class of technologies that are presently overwhelming us, and people may not be aware of what they’re doing. I’m going to talk about computers, business machines, Internet infrastructure and information transmission for cellphones. I might mention that we all have these technologies or Palm Pilots, but they all hook up to transmitters or huge servers elsewhere and use up a lot of power; in fact, an inordinate amount of power for the amount of utilization we have right now.

When you consider that one server farm takes 80 megawatts—a 60-megawatt server farm just located in Ottawa is going to cause the distribution company there some distress. So I’m suggesting that the government should look seriously at how to address this new issue of inefficient Internet and communication infrastructure. My final example is that in the United States at present it’s estimated that 15% of all new load growth is directed at this sector.

I want to talk a little bit about those technologies I mentioned earlier: fuel cells and future fuels. While fuel cells may not necessarily be green at their early stage of development, the stated goal of the futurists who are involved in the development of this technology is that they basically feel renewable hydrogen, methanol and biogas will be the source of energy for these technologies in the future, later in the 21st century.

I just want to stress that although fuel cells may not be classified as renewable right now, they will be if they burn renewable fuels, and that is in fact a goal. I would ask that the government address the issue of accelerating this trend for both fixed and transportation application of fuel cells.

Next I’d like to talk about biogas from agricultural waste. We believe this is a huge untapped resource in Ontario. While other jurisdictions are harvesting this new energy source, there is not at this time a single working pilot facility in Ontario, although I should mention that Cold Spring Farms and OMAFRA are working together to launch what hopefully will be the first pilot of this nature here in Ontario, and we are supporting them in that endeavour.

We sense that part of the reason this hasn’t been developed to its potential is the confusion and

controversy about jurisdiction, which has impeded the timely development of this. By that I mean, is this an agricultural jurisdiction, a municipal jurisdiction or an energy jurisdiction? I ask the government to address this in trying to get a uniform partnership moving in this direction.

One of the great benefits of biogas, as you probably know, is that in addition to generating green power it addresses the issue of animal manure treatment and the policies surrounding that, the pathogens in groundwater resulting from that. It will also create a whole new class of renewable fertilizers, which will offset the production of artificial fertilizers.

**1450**

The next technology I'd like to talk about briefly is district heating. Again, I thought it didn't get enough witness submissions. I want to talk about the combined heat and power opportunities and efficiencies associated with cogeneration, which essentially, as they are now, are usually sized by their heat loads, not electrical loads. When I look at the amount of natural gas burned in Ontario for space heating—and you realize that someday our future generations will look back and say that this was a very inefficient use of this non-renewable resource; that we should, in fact, be incrementally using that natural gas to produce both electricity and power in a combined facility. What I ask the government to address is the way of looking at incentivizing the infrastructure costs of piping that will enable more of these kinds of technologies to be taken up.

Finally, something of an orphan: the ITER project. I thought I'd address the ITER project on fusion to try and contextualize it. I want to position the ITER project not really as something that is an energy project in the near term but, rather, something that will generate scientific knowledge and economic development: scientific knowledge for the world and economic development for Ontario. It's highly unlikely that fusion will impact energy use until the middle of this century. I'll just give a sidebar here. It's like so many things; the example I can think of is that the fundamental theory of computing and computers was actually developed in the 19th century, with some latter developments in the early part of the 20th century. But it wasn't until the transistor was invented in the 1960s that the technology actually allowed for the enabling of computers and computing as we know it. Fusion is one of those things. It still requires a fundamental scientific basis before we can harvest it for energy. So I look at this as an economic development opportunity also, where billions of dollars of economic activity here in Ontario, funded for the most part by the international community and the scientific community, would generate tax revenues far in excess of what the government contributions would be.

Finally, my summary: I think now is the time to craft a winning strategy where the government can enable new, efficient and/or renewable forms of energy that will address environmental concerns, promote new technologies, and also provide energy supply options for the

province. Also, while much can be learned from policy successes in other jurisdictions, the new energy paradigms of the 21st century will present significant innovative opportunities that are unique to Ontario. I ask the committee to address that uniqueness.

**The Chair:** Thank you for your presentation. We have about three minutes per caucus, beginning with the government side.

**Mr O'Toole:** Thank you very much. That was quite a good review of options, choices, policy and practical—I just want to concentrate on two.

We heard earlier this morning about the renewable portfolio standard. I sort of made the case—at least, I don't think I made it, but I stated it. The argument is that if we invest a lot of money, we'll have a payback. We always hear that if we put more money into health care, we'll save a lot. We've been pouring it in like we're hemorrhaging, and there's just more demand. I had a good response, though, from the presenter this morning. I'm asking for a response on this. What could we do to engage the consumer on this renewable portfolio?—not so that Enbridge or OPG gets a big kickback and then they just jack up rates so their revenue doesn't change. Do you understand? That's what they do.

**Mr Stasko:** Yes, I understand.

**Mr O'Toole:** Their revenue never changes. They just sell less electricity and charge you more for it, so the consumer's just out there hanging by the thumbs. How could you really incentivize the consumer to cut down the use, go to off-peak use, and all that?

**Mr Stasko:** Once time-of-use rates percolate down to the end user as a result of the open electricity market, I think incentives that presently don't exist will exist.

**Mr O'Toole:** Time-of-use rates. That'll help in hydro-ge, if we could store it.

**Mr Stasko:** No, it will actually help with electricity. If in fact people elect to buy off the spot market rather than getting a retailer, there will be strong incentives to use power off-peak. And there may be other incentives. I'm thinking of the Sacramento Municipal Utility District, which has been very innovative. I'm sure you've heard of SMUD. They did some very clever things to incentivize the use of renewable technologies, even among people who are quite happy to put up facilities in their own homes at their own expense.

**Mr O'Toole:** I've got a couple more questions. The net metering: I've heard there are some municipal utilities that allow, through technical changes, net metering, which deals with off-load stuff, peaking?

**Mr Stasko:** Yes, and in fact, as I understand it, the new energy marketplace in Ontario will enable that very thing. There will still be some procedural and technical barriers, but, in theory, as long as there's a market for your power you can send it back into the system.

**Mr O'Toole:** That's good. The last one was—

**The Chair:** Thank you very much. We move on to Ms Churley.

**Ms Churley:** If you're quick, I'll give you part of my time.

**Mr O'Toole:** The last one I had was the triple E, the efficiency ones. I wasn't really clear on that, if you had a response. It's a good point. Efficiency—is that appliances?

**Mr Stasko:** That's mostly appliances. I guess I was asking that you focus on all of the information and communications technologies. Just to give you an example, office buildings in downtown Toronto now require three times the electrical power that they were originally designed for because of desktop computers, Xerox machines and servers. No one is addressing the efficiency of these devices, and they are driving up the loads of many jurisdictions.

**Ms Churley:** In fact, that was where I was going to go. That's quite fascinating and disturbing, what you said about this new kind of technology. I've got my cellphone with me, my PalmPilot with me. I think we almost take it for granted. We hold these little things in our hands; they're there. We recharge the batteries. You don't think about the amount of electricity used. You mentioned the US is starting to deal with this. How do we approach this problem?

**Mr Stasko:** I have no easy answers. The only anecdote I can give you is that in California, of course, this became critical during their last energy crisis when they realized that in San Jose most of the power was going to these server farms I mentioned. These server farms are what's at the other end. Whenever you get on the Internet, chances are the server farm is in California, or it might be in some other high-tech jurisdiction like Kanata, but there aren't that many there yet. They suck up a lot of power because it's never been a criteria for design.

**Ms Churley:** But are there those looking at design now, trying to change the—

**Mr Stasko:** Indeed.

**Ms Churley:** Who? Where might we get information about that?

**Mr Stasko:** I would suggest California right now, but I must confess ignorance. I can't give you any more guidance.

**Ms Churley:** But there might be others.

**Mr Stasko:** I could get back to you if necessary.

**Ms Churley:** Those are my questions.

**Mr O'Toole:** I just wanted to make one comment. We could actually build these computer servers—

**Ms Churley:** I'll give you permission to take a little more of my time to make a comment.

**Mr O'Toole:** It's humorous, really—with your indulgence.

**The Chair:** I hope so.

**Mr O'Toole:** We could build these servers—you have to get this—beside a manure pile. Not that they create manure—

**Mr Stasko:** Not so outlandish. I know, there's some irony there.

**Mr O'Toole:** Because there's biomass.

**The Chair:** Thank you very much. We appreciate your coming before us, especially some of the thoughts you had for us on where some of this power is going. I

think it's a bit of a surprise to some of the committee members.

#### CITIZENS FOR RENEWABLE ENERGY

**The Chair:** Our next presenter is Citizens for Renewable Energy, Ziggy Kleinau, coordinator. Please come forward, Ziggy. There's a total of 20 minutes for each presenter. What you don't use in presentation we'll divide between the two caucuses that are here. Please start by stating your name and away we go.

**Mr Siegfried Kleinau:** Honourable Chair and members of the committee, my name is Siegfried Kleinau but I'm known as Ziggy. I thank you for the opportunity to make this presentation today on behalf of the directors and members of Citizens for Renewable Energy. I am the coordinator for this non-profit organization incorporated in Ontario six years ago, originally founded by organic farmers concerned about the effect from polluting energy generation on their crops. CFRE now encompasses well over 1,000 members from all walks of life, but we can still call ourselves a true grassroots organization with financial support solely from its members. Our concern for the sustainability of the country's natural resources has set our goals on promoting energy conservation, as well as the use of clean and safe renewable fuel sources for electricity generation.

#### 1500

Having participated in the public comment forum of the Advisory Committee on Competition in Ontario's Electricity System, the Macdonald committee report reflected our contention that, "The process of restructuring must be accompanied by consideration of the most appropriate regulation or other instruments to secure the protection of the environment and, specifically, to support energy efficiency and the introduction of renewable energy technologies." There was emphasis added to this quote from page 91 of the report, which now dates back almost six years.

A little over a year previous, in February 1995, our public utility came out with a document titled Renewable Energy Technologies: Strategy and Program for Sustainable Energy Development. I just happen to have a few copies here for distribution. I might have enough for everybody here. It's such an important study that I had to comment on it. In it, Allan Kupcis, then president and CEO of Ontario Hydro, states: "Renewable energy technologies are the wave of the future. Ontario Hydro will be a leader in addressing market barriers to these technologies, and to opening the door to a cleaner, more cost-effective future."

So where are we now, seven years later? Yes, one wind turbine at the Bruce nuclear visitor centre has produced thousands of megawatts since its commissioning in 1995 and, yes, Ontario Power Generation just spent a couple of million dollars on the largest wind turbine in North America, located at the Pickering nuclear plant. But what they don't publicize widely is the \$1.3 billion of ratepayers' money invested in bringing

back 30-year-old reactors, which still do not have the full emergency shutdown capability that all other reactors have. Will they be producing electricity for another 10 years? Not very likely. With that huge investment, they could have installed photovoltaic solar panels on every unshaded south-facing roof in the city of Toronto. These clean and safe energy-generating devices are guaranteed for 25 years not to lose more than 10% of their efficiency. That kind of alternative fuel would easily have produced the same amount of power as those old, dangerous reactors, without power loss by long-distance transmission.

Sure, there is no electricity generated at night from these panels, but that's where the net billing potential comes in. Feed any surplus into the grid during the daytime and supplement power needs from the wires at night. Apparently, this plausible option has been deleted, thanks to pressure from large generators. Here we go. The barriers are still being put up to thwart small competitors. It is high time the government came clean when talking about a fair marketplace in a deregulated electricity era.

As pointed out in this forward-looking hydro strategy document, "Competition to supply energy services is on the increase. In recent years, a trend toward 'open access' has developed, that will likely see a more distributed electricity system with smaller decentralized generation, and increased private sector participation."

Then on page 10 it details some of this vision by outlining a utility rental-leasing plan where Hydro installs solar water heating, photovoltaics or wind equipment for their customers which would remain their property and be maintained by the utility. The other option is even more appealing, with Ontario Hydro helping customers purchase their own equipment of that kind by paying for it through their utility bills. This would be a win-win solution, with co-operation between utility and customer instead of the determined customer going it alone, as I did eight years ago when I asked Ontario Hydro to disconnect me from the grid because I was able to generate electricity from clean and safe renewable sources in a solar-wind hybrid system.

In our submission to the standing committee on resources development on Bill 35 in August 1998, we touched on the great opportunity for job creation by supporting the establishment of a manufacturing sector for solar and wind turbine components which up until now is virtually non-existent here, and even in Canada. We mentioned Denmark as an example where the manufacturing of wind turbines has created employment that has more than doubled and has overtaken the fishing industry as the largest employer of that country. Last year I received the latest statistics from Germany, where wind turbines now have an annual output of 6,900 megawatts and where there are almost twice as many workers employed in the wind energy industry as in the nuclear industry. Several offshore wind farms are in the planning stage. The power produced from this new, clean and safe renewable source would be enough to completely displace the output of all of Germany's nuclear plants.

There have been several projects proposed in the Great Lakes region to drill for oil offshore. What an insanity, to endanger the drinking water supply of 40 million people in such a risky undertaking. If we really need more energy supplies, can't we do what Denmark and Germany have done, what Ireland and now even the United Kingdom are doing: catch the free fuel that leaves no waste or pollution by placing wind turbines onshore or offshore on our windy lakes?

I haven't been able to get the time to put in something else on statistics in regard to energy conservation, because a number of studies were done. One study said there would be enough energy supplied by Niagara Falls and the small hydro generators if all the existing homes and buildings were retrofitted and if all the new buildings were energy efficient.

The other thing I'd like to mention here, and I've mentioned it before, is that conventional energy generation is so inefficient because about 70% of the power in the fuel goes out as heat; actually less than 30% is reaped in the energy generation process. We lose about another 8% to 10% in the process of transmitting it through the high-voltage lines, with those ugly towers.

So energy efficiency is one of the biggest things in anything the government should be looking at. Also, net metering should definitely be in any of the OEB regulations.

**1510**

The systems benefit charge: we recommend that it be done the same as with the natural gas industry, that there be a regulation that sets aside a certain amount of money to be able to bring this energy efficiency to fruition. If it can be done for the natural gas sector, why not for the electricity sector? In other words, there are a lot of good things that the government can do, and definitely remove the barriers that exist now.

Isn't that the logical choice, to get off the conventional fuel generation to try and mitigate climate change and give hope for a livable future for our children and grandchildren? That's our call, from the Citizens for Renewable Energy. Thank you very much for giving us the opportunity.

**The Chair:** We have about two and a half to three minutes per caucus.

**Mr Ouellette:** I'm interested in when you went off the grid. You said that it's a combination of solar and wind that you're utilizing in your house.

**Mr Kleinau:** That's right, yes.

**Mr Ouellette:** What sort of generator are you using for the wind? What do you generate from that?

**Mr Kleinau:** We have a 400-watt unit which was manufactured in Flagstaff, Arizona. It's a very compact unit. The good thing about these units is that they're modular. You can add to them if you need more electricity.

**Mr Ouellette:** How long would the blades be and how tall would it be?

**Mr Kleinau:** I should have brought pictures. The blades are about this long. Actually, this industry is

coming out with a new model that's a lot quieter than what I've got now and it can be used in urban locations. It can be put on a residence.

**Mr Ouellette:** If and when net metering takes place, would this be to your benefit? Would you be able to sell back? Do you produce an excess capacity?

**Mr Kleinau:** In my case, I'm disconnected from the grid. I haven't paid an electricity bill for eight years now. It sure is a powerful feeling.

**The Chair:** No pun intended.

**Mr Ouellette:** But if you were to reconnect, would you be able to? Do you use natural gas for any other purposes?

**Mr Kleinau:** No.

**Mr Ouellette:** So your principal for water, heat, is electricity etc?

**Mr Kleinau:** I heat with wood. I'm in the lucky position to have a 50-acre woodlot, so that helps, with a lot of trees dying there from climate change. We've had three-month droughts there several years in a row, except for the one previous, in 2000. But last year was terrible: three months and not a drop of rain. The river nearby dried up.

**Mr O'Toole:** Just a quick one.

**The Chair:** If you can do it in a minute, Mr O'Toole.

**Mr O'Toole:** In the quote you made from Mr Kupcis, I think there's a small typing error. "Ontario Hydro will be a leader in creating barriers for market"—no, no, "addressing market barriers." I think they've got the wrong word in there.

Do you think Ontario Hydro should actually be involved in demonstration projects creating wind generation, or should it be other entrepreneurs? Aren't we trying to divest them of this generating capacity somehow and to let other people get into it who really don't want to protect all these assets?

**Mr Kleinau:** Our problem is that they are still spending billions in ratepayers' money to bring back reactors that haven't really been needed for over three years, like in the Pickering case, the old Pickering reactors. Where is the logic there? This is something where they could have really gone to this program here, which was abandoned two years later, in 1997. I've got a letter from Rod Taylor—

**Mr O'Toole:** But should they be involved in these alternate generation projects directly, OPG?

**Mr Kleinau:** Yes.

**Mr O'Toole:** Should they?

**Mr Kleinau:** They should.

**Mr O'Toole:** Directly?

**Mr Kleinau:** This is a perfect example of how they can help the homeowners. You see, that's the beauty of alternative energy, or, better, renewable energy. These fuel sources are everywhere and we just have to catch them. That's why we need help in that regard, because right now all these components have to be imported and this is the big problem. It actually doubles the price. I could have got these wind turbines for \$500 if I went south of the border. Up here they cost twice as much—

\$1,000. Photovoltaic panels are practically twice as much here too, with duty on top of it, taxes. We've been after the federal government to at least rebate the GST, and I believe the provincial government could come around and rebate the PST, the provincial sales tax, just to put their money where their mouth is.

**Ms Churley:** Ziggy, it's nice to see you again. I think the last time I saw you, we were in the same room with Irene Kock.

**Mr Kleinau:** Exactly.

**Ms Churley:** Who unfortunately was killed in a car crash on New Year's Eve. She was an incredible human being who was very involved in the anti-nuclear movement, the peace movement and was at several meetings around our committee. A very big loss, no matter what side of the equation you're on in this. Anyway, I thought it was a good opportunity to pay a little tribute to Irene; an incredible loss for our community. That's the last time I saw you, and we were talking about this committee and its work.

I want to take this opportunity to promote you and all the work that you've done and the Citizens for Renewable Energy. There's a booklet. What this group does is try to help people keep their electricity bills down, to learn about energy efficiency and conservation. They have done a tremendous amount of work for free—I know you have, Ziggy—over the years and I think we all want to thank you for that and thank you for coming forward today. People should get this little booklet. There are really good tips in there.

I just have one quick question about nuclear power. Specifically you talked about the wind turbines in Germany and the annual output of 6,900 megawatts, where there are twice as many workers employed in the wind energy industry as in nuclear energy and if you built enough of these, it could replace the output of all of Germany's nuclear plants. Is Germany in the process of phasing out those plants? Do they have a deadline? Is that part of their goal?

**Mr Kleinau:** They do have a deadline. They had a lot of negotiations with the nuclear industry because of the long-term contracts that they have with suppliers of their fuel. But there is a deadline that within 25 years the last nuclear reactor will be phased out, will be taken out of service. Also, by 2005 there will be no more reprocessed fuel used in these reactors, which is called the MOX fuel, made from plutonium reprocessed.

**Ms Churley:** So that's by 2005?

**Mr Kleinau:** Yes.

**Ms Churley:** And 25 years as of when?

**Mr Kleinau:** That was actually last year when this agreement was signed by the government and the industry.

**Ms Churley:** That's what I thought, yes. So that would mean there must be an incredible amount of innovation going on in Germany, knowing that they've got 25 years to completely phase out nuclear power. I bet there is some really interesting stuff we can learn that's going on over there.

**Mr Kleinau:** As you can see, they are in the process of really widening the projects on wind turbines and wind-generated electricity. They also have enlarged the big solar roof program. They originally had a 10,000-house solar roof program that's now going to be like one million rooftops outfitted with photovoltaic panels.

1520

**Ms Churley:** That's somewhere else, the million—California.

Can I ask another quick question. I don't usually do this, but I wanted to ask about their energy efficiency and conservation programs. I assume that they've really been beefed up too since they decided to phase out nuclear power. Do you know?

**Mr Kleinau:** I'm really glad you mentioned that, because the appliances in Europe are really so much more efficient compared to ours here that we should really take a look at it and bring them over here. Just to take a washing machine, their washing machines take only about one third of the water that our washing machines take, and the laundry comes out clean, maybe even cleaner than in these washing machines here on the North American market. That's just one example. Efficiency in the appliances goes a long way on cutting down on electricity use.

Just to mention in regard to Irene Kock, I was working very close together with her on the green energy task force that I co-chaired, the Great Lakes United coalition. It's an international coalition. She was putting together a new energy policy for the Great Lakes basin. As I say, it's a terrible loss. I don't think she can ever be replaced. So it was not a good start for the new year with regard to renewable energy, but maybe the government can really recognize that there's a way to go.

**The Chair:** Thank you very much for coming forward with your presentation. As always, we have enjoyed it and it's been very informative.

#### MEA TECHNOLOGIES

**The Chair:** Our next presenter is MEA Technologies, Brian Docherty. As you begin, for the sake of Hansard, please state your name. There's a total of 20 minutes designated for you. What you don't use in presentation will be divided equally among the caucuses.

**Mr Brian Docherty:** Good afternoon, ladies and gentlemen. My name is Brian Docherty. I have a company in Hamilton, Ontario, called MEA Technologies. We are the Canadian distributor of a product called the Ferox combustion catalyst. We have been in business since about 1993 in the Hamilton area, and Ferox is an advanced combustion fuel catalyst that, when added to any type of gasoline or diesel fuel, will complete the combustion process significantly, thereby reducing significant numbers of the polluting emissions coming out of the exhaust stacks or whatever it's used in.

We reviewed your interim report of November last year, and after reading it from front to back and back to front we feel that we're a little late maybe getting here,

because we've actually been around and been involved with both the federal government and a lot of municipal governments across Ontario who have taken a look at our technology and found it to be rather intriguing, something they hadn't really ever seen before and how it works.

When you come out with a product like this, there's always a lot of skepticism, and unfortunately we're kind of looked upon as a used car salesman or something like a Canadian Tire aftermarket product, so to speak. But I want to assure you that the roots of this product are rather significant in that this technology was originally developed by a team of PhD chemists down in Utah who were under contract with the US military and the US aerospace program in regard to finding technologies that would make solid rocket fuels burn as completely as possible with as little waste as possible.

The team of PhD chemists down in the States who did this are world-renowned chemical engineers. They are all, as I said, PhDs. They are all graduates of Brigham Young University, which is regarded as the top chemical engineering university in the world. What happened, basically, is that the technology and the research that was done in respect to these solid rocket propellants was then transferred over to another group—actually, the same group with a few changes—to apply this same technology to basic liquid fossil fuels; in other words, being able to make them burn as completely as possible with little waste.

Now, there's a standard scientific fact that this air pollution problem that we have today is caused by one thing, and one thing only, when it comes to pollutants from engine exhaust, and that is that it's simply the by-product of incomplete combustion. The fuel simply doesn't burn 100%. You thereby get a list of poisons as long as your arm. If you take any volume of gasoline or diesel fuel, and you really can't do this unless under laboratory conditions, if you burn that volume of fuel 100%, you only have two things left over, and that's carbon dioxide—CO<sub>2</sub>—and water. Anything less than 100%, you get a tremendous number of poisons created.

Basically how the Ferox technology works in that respect is that it is a liquid and it's added to the fuel in a 1-to-5,000 concentration. It acts in two ways. The first thing it does is it modifies the fuel so that it will burn at a lower temperature. The problem with the fuels on the market today is that they require very high temperatures in order to combust. Ferox lowers the amount of energy required to activate that fuel, thereby giving the fuel more time to combust. Subsequently, because it has more time and it burns more completely, you get these major reductions in these polluting emissions.

In the beginning, when we first introduce the technology here, obviously that's just talk. Now you need specific data to prove what you're saying. After a couple of years doing some public sector testing down in the Hamilton area—for example, the Hamilton fire department were the very first people to try it. Fire trucks, for example, have a very unique situation in that they are



very large, heavy-duty diesel vehicles that do very, very small trips and may have to run for a large number of hours at a time at a scene. They are very high up on the list of vehicles that are susceptible for heavy diesel smoke because of that.

We approached them with this product. They said, “We have one problem and one problem only, like every fire department probably in North America: we have a lot of particulate problems because we start these vehicles up inside the engine house. You get these big clouds of black smoke that are being emitted right off because they could have been shut off for hours or days, for that matter.” What they are basically looking for is for us to eliminate that. To make a long story short, there is a report in—does everybody have one of these, by the way? OK, good. They have a report in there on what their results were. The product has shown virtually a complete elimination of particulate smoke in these trucks.

That got the attention of the municipal fleet in Hamilton, who then did their own testing at Mohawk College in Hamilton, using some of their emission facilities. Then there was a change in the federal government. Sheila Copps was good enough to meet with me, had taken a look at quite a bit of the data that had been accumulated at that point, and authorized the Environment Canada labs in Ottawa back in 1996 to do an in-depth study on this product and this technology and to see, under the most stringent circumstances that they could throw at it, how it would come out. Again, to make a long story short, this product was tested over about a nine-month period on a series of urban transit buses. By the way, this is the top testing lab. For any type of testing for emissions and for fuel consumption, testing is done by the Environment Canada labs in Gloucester. It cost \$150,000 to do, by the way, and that money has already been spent, so nobody is looking for anything there in that respect.

We got back a report stating that as per all the information we supplied before that, the product did indeed show an average fuel consumption reduction of 7% and on top of that some tremendous reductions in some of the nastiest things that are coming out of an exhaust stream, and not just the normal ones that you would be familiar with like CO, CO<sub>2</sub>, nitrogen oxide, hydrocarbons and such. We went a lot further than that and did a lot of non-regulated emissions, things like PAH compounds, carbonyls—formaldehyde, acetaldehyde—and of course on top of that, the fuel consumption testing. That report is included in the handout you have.

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This has also gotten us a lot of attention across Canada with other municipal fleets. For example, down in the Hamilton area, just because the fire department was using it didn't mean that Hydro was going to use it. There were fleet managers responsible for each separate fleet who in turn were not going to purchase this product just on the hearsay of another one of their counterparts. They wanted to see it on their own fleet. Over the last five or six years, that's basically what we've been doing, allowing muni-

icipalities to test it, and we've gotten golden report cards right across the board on every single test. We have never had any municipality try the product and not get a positive result. By the way, I want to point out that this has been all public sector testing. It's not like I've got some trucking company out in Cambridge with four trucks who swear by it type of thing. These are municipalities here in Ontario.

If I could also just point out, as you will see in the report, the city of Oakville is using Ontario Drive Clean program standards. You'll notice that how these numbers work is that each vehicle—and I'm sure you're all familiar—has a standard set for it as far as emissions when it's going in for its Drive Clean program, and that's basically a pass. What these numbers here represent is that not only did we pass—passing is a C minus basically—but these numbers are extraordinary in that they take the report cards on these vehicles to an A plus. Not only do they meet the standards, they exceeded them by some tremendous amounts. You will see, for example, that carbon dioxide is 74% less than what the province is mandating for these vehicles.

One of the ones we're particularly proud of, and we see this all the time, is the opacity, the diesel smoke. All diesels, heavy-duty trucks, are tested for that yearly in this province, diesel particulate. You can see that not only do we meet the standard, but it's 60% less than allowed.

In a lot of the material I was reading in your report—and I can appreciate where you're coming from—the way this was written, there's a desire out there to almost think that we have to find an alternative for fossil-based fuels, which I agree with. Eventually down the road we're going to run out of the stuff, maybe not in our lifetimes, but we're still facing the same problem. What I'm saying is that I have a technology that's already gone through the federal government of this country, and all kinds of municipalities that state that this product does what we say it does. We've spent the last nine years basically proving our case, and we've done it very convincingly, I think, with a lot of these fleets. We feel we can address a tremendous number of your objectives in this report and start giving them to you immediately, as opposed to testing this new technology or that new one. We've been around. The taxpayers' dollars have already been spent in significant amounts, not only at the federal level but at the municipal level across this province, to prove that this product is the real thing.

Again with respect to your report, there are some recommendations that were made on page 48 with respect to incentives that should be looked upon—a lot of them, I notice, are from the Ontario Trucking Association—such as that consideration be given to fuel tax reduction, to various fuels that achieve significant environmental health benefits; that winners of provincial government tenders should be required to take a look at a technology like this; school bus programs; your own GO Transit, for example. As far as tax credits, I'll leave that. That's a little beyond me as far as that goes.

Just to give you an idea of numbers, of how much money we're saving some of these municipalities, basically you're looking at about \$30,000 per million litres consumed, based on today's fuel prices for gasoline or diesel; it's kind of a blended price. That's a net figure. That's with me paid for.

It costs less than one cent a litre to use this product. It's mixed at a 1:5,000 ratio, again. We have reports in there that basically say it's a very simple product to use. These are large fuel users, as you'll see, all my customers. They have their own in-house fuelling, they have their own fuel pumps and their own underground tanks. That's basically how we treat the fuel, so it's already in the gas or the diesel as it's being pumped out. You have a 10,000-litre tank underground; 10,000 litres of fuel is delivered. You open it up, you pour two litres of Ferox in, close the lid, end of story. That engine is now receiving the benefits of this technology.

Just to give you an idea of other municipalities, we're in discussions with London, Ontario. We've been dealing with London, Guelph, Cambridge. Also, just to let you know, because this is a provincial meeting, we've just come to an agreement with Hydro One. We will be treating several of their large yards here in the south-western Ontario area, beginning probably in the next 30 days. We are just signing a contract with the new amalgamated city of Hamilton. We used to just have the city, and then the outlying areas were amalgamated, so now the fleet is substantially larger. We will now be treating the transit down in Hamilton, the Hamilton street and rail, which consumes in the area of somewhere around 8 million litres of fuel a year alone.

The Hamilton fleet uses a total of about 12 million litres of fuel a year. We have estimated on a cost analysis that we'll be saving them approximately \$360,000 a year in fuel. I don't think that public entity is any different from any other public entity in that all these fleet managers have a gun pointed at their heads to try to reduce their fuel consumption, reduce costs and at the same time be more environmentally friendly.

I get quite a few comments from these fleet managers that I have made life a lot easier for them because I address both: they have their entire fleet breezing right through Drive Clean, and they're showing less money that they're paying out every year for fuel costs. Another thing is that their complaints from citizens about diesel exhaust fumes, for example, have virtually disappeared, except for things like the Hamilton buses, which were not on it for quite a few years but which are now going to be on it.

So we feel we've got a pretty strong technology here that I think warrants this committee's attention.

**The Chair:** Thank you very much. We have about a minute and a half per caucus.

**Ms Churley:** Thank you. Could I ask you perhaps to be a little bit more specific on what you would like this committee to do in relation to your product, which you're out there selling already.

**Mr Docherty:** I was particularly looking at—for example, in your report there was mention of having the

province own fleets, setting the example in-house, so to speak. There are mentions in here with respect to—the province, for example, is a huge contributor to public transit across this province.

**Ms Churley:** Well, it isn't really any more—used to be.

**Mr Docherty:** Well, it is and it isn't, so to speak.

**Ms Churley:** Isn't.

**Mr Docherty:** Yes.

**Ms Churley:** But continue.

**Mr Docherty:** There are ramifications there. Also, for example, we're all jumping up saying we've got this massive air pollution problem, and we do, that we can point fingers at whomever, but we're all responsible for it. The bigger the fuel user, the bigger the problem you are. It's as simple as that.

I don't know if it's something you can mandate, but at the same time I think if there's an incentive to use a product like this that has gone through all of the most rigorous testing that something like this could possibly go through and come through with a positive result, I think it's something that warrants a good look.

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**The Chair:** Thank you. Mr Hastings.

**Mr Hastings:** Mr Docherty, why hasn't the highly innovative TTC or the city of Toronto implemented this program? Have they approached you, or have you approached them?

**Mr Docherty:** I have approached them, sir.

**Mr Hastings:** And they turned you down, I assume?

**Mr Docherty:** No, not really. Basically, this was just before the city amalgamated a few years ago.

**Mr Hastings:** OK. What about the new city?

**Mr Docherty:** To be honest with you, I have not had an opportunity to get back in here yet, because I was a little put off by the way I was handled prior—I was kind of tossed around like a beach ball, if you know what I mean.

**Mr Gilchrist:** A follow-up, then—the first question a little jocular and the next one serious.

Apropos of that, did I hear you correctly: was it your submission, now that Hamilton has been amalgamated with the suburbs, that the previously reluctant fleet managers in the surrounding environments and all the citizens in those parts of the province will now be the beneficiaries of more efficient and cleaner operation of a broader range of municipal services?

**Mr Docherty:** It's certainly my hope, sir.

**Mr Gilchrist:** It is indeed. And you would characterize your company as a beneficiary of the amalgamation?

**Mr Docherty:** Absolutely, sir.

**Mr Gilchrist:** Thank you very much.

My serious question to you: does the use of your product void any manufacturer's warranty?

**Mr Docherty:** Absolutely not.

**Mr Gilchrist:** OK. Talking about large groups where we could derive maximum benefit, have you approached the OTA? What's the reaction of the trucking industry to your product?

**Mr Docherty:** The problem with the trucking association is that you have to have a central fuelling source for a technology like this. In other words, trucking companies that make a short trip would fill the vehicle at their site from their own underground tanks, and the Ferox would be in there. The truck goes out on its run. If it has to stop for fuel at any fuel source other than its home spot, then we're kind of defeating the whole purpose. You must have Ferox in the fuel continuously in order for it to be properly working all the time.

**Mr Gilchrist:** But a fleet like FedEx or Purolator presumably would have short runs and go back to the home yard every night.

**Mr Docherty:** Yes. I'll come back to you on that. The problem is, I'm sort of like a one-man show and I can only spread myself so far. I have been concentrating strictly on the public sector, to be honest with you, because I have to devote my resources to the one area that I'm finding is most responsive, and a lot of it has to do with that federal government tax. That really has got me in a lot of doors, because it kind of gets rid of a lot of the nonsense; it separates me from all the other additives on the market.

Basically, I haven't really had too much success at this point, but then I haven't really put out a great amount of effort. I can tell you that in Hamilton with Dofasco and Stelco, which are two of the biggest polluters in this province, I've been tossed around like a beach ball, just like some of the situations I've been involved in. I go from one department to another department to another department: "What the heck's going on here? Are you interested, yes or no? It's up to you."

For example, I could save a company like Dofasco close to \$400,000 a year in fuel. I said, "It's up to you. Do you want to keep it, or do you want to give it to the oil companies? They're more than happy to take it from you; I can guarantee you that."

So it's just been a matter of where they've been most receptive.

**The Chair:** Thank you very much. We appreciate your coming forward with some new and different information.

**Mr Docherty:** I appreciate your time.

#### GAIA ENERGY INTERNATIONAL

**The Chair:** Our next presenter is GAIA Energy International, Greg Binions, chairman. If you have others in your delegation, please bring them forward with you. As you start, please state your names so they all get properly recorded in Hansard.

**Mr Greg Binions:** My name is Greg Binions. I'm chairman of GAIA Energy International.

**Mr Ross Blaine:** I'm Ross Blaine, project manager for GAIA Energy International.

**Dr Raymond Colledge:** I'm Raymond Colledge, a consultant to GAIA Energy International.

**Mr Binions:** GAIA fuel helps. It's an immediate solution to near-term pollution reduction.

I'd like to start off by thanking you for the opportunity to speak again. We realize that until GAIA is able to develop its market, it will have limited availability to the consumer marketplace. We are planning to see its major penetration initially in the municipal and private fleets. We would like your support to see GAIA fuel used in municipal and provincial fleets as quickly as possible. We would like to see GAIA fuel given the same tax considerations, as a low-polluting alternative, as the other alternative fuels. By doing this, you can show a cost-effective, proactive initiative on Ontario's part to reduce pollution now.

Now I'll explain why we want Ontario's support. GAIA fuel is a liquid fuel that can replace gasoline totally, or it can be used in conjunction with it. The technology was obtained during the Canada-Japan trade mission in 1999. GAIA fuel benefits the environment and consumers by burning cleaner than gasoline. GAIA fuel is more environmentally beneficial than propane and gasoline in head-to-head testing. Environment Canada, which has done extensive testing, says our fuel shows statistically significant reductions in major automotive pollutants. The University of Hong Kong has also done testing which corroborates Environment Canada's tests. GAIA fuel corresponds with the World-Wide Fuel Charter categories TLEV and ULEV, which we'll go into a little bit later. Basically, GAIA fuel helps by providing consumers with a high-efficiency, lower-polluting and safe-to-use fuel.

The benefits of GAIA fuel: lower emissions when compared to regular gasoline. Testing has demonstrated reductions of up to 88.1% in carbon monoxide, 83.3% in hydrocarbons and 9.7% in carbon dioxide. These are all results obtained by Environment Canada. Because GAIA fuel burns cleaner than regular gasoline, it should provide potentially lower maintenance costs.

Improved fuel consumption: compared to regular gasoline, tests have shown that GAIA fuel improves fuel consumption by up to 10.8%. Again, that was done by Environment Canada.

GAIA fuel can be mixed with gasoline to ensure reduction in emissions and increase octane.

Current experience has demonstrated that no modifications are required to vehicle OEM parts or operating settings. GAIA fuel requires no changes in retail tanks and pumps or distribution facilities.

**Dr Colledge:** I'd just like to say something about the product testing and the results that have been obtained. Extensive emission testing has been done in Canada on this fuel. Environment Canada has a fully certified world-class automotive testing centre in Ottawa that specializes in the testing of all vehicles that use some form of combustible fuel. In tests on a number of different vehicle types and ages, significant reductions in emissions, as we've just referred to, have been obtained compared with gasoline. These are detailed in appendix A.

In addition, we've seen a significant improvement in fuel consumption. In one particular exercise, the vehicles tested were a 1997 RCMP propane and a 1998 GAIA

fuel Ford Crown Victoria. Using Environment Canada's UDDS emission cycle, which corresponds to urban driving, we were able to get a direct comparison of GAIA fuel and cold propane, each of them relative to gasoline in what is generally considered to be a vehicle that represents the largest proportion of the police vehicle fleet in North America.

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The results show that whereas propane in properly tuned cars contributes to an improvement in smog formation through a reduction in hydrocarbons, it doesn't really do anything for carbon monoxide emissions, whereas GAIA fuel not only has a beneficial effect on smog formation but very dramatically reduces carbon monoxide emissions.

I'd like to put that in perspective, because although the problems associated with smog have been well publicized, the hazards associated with carbon monoxide emissions have not. Yet carbon monoxide is probably the most insidious of all the emission pollutants from vehicles as it is totally invisible and has no smell. In addition, 95% of all the carbon monoxide produced in urban areas can be attributed to motor vehicles. The table shows this comparison, and you can see that whereas propane had little effect—actually, it increased the carbon monoxide slightly—GAIA fuel reduced the carbon monoxide very substantially. Carbon dioxide and total hydrocarbons were more or less the same for the two fuels. These results are given in more detail in appendix B, along with some Ontario government Drive Clean testing results, all of which show consistent reductions in major emissions.

So all the current testing has shown that GAIA oxygenated fuel reduces emissions, particularly carbon monoxide and hydrocarbons and so on, but also reduces carbon dioxide, which, as you know, contributes to global warming. The situation is not quite so clear on NO<sub>x</sub>, but in some instances we have seen a reduction in NO<sub>x</sub> in highway driving simulation conditions.

In recent years, as I'm sure this committee well knows, an increasing amount of attention has been given to the need to lower the sulphur content of gasoline, not only to reduce the formation of sulphur dioxide in exhaust emissions, but also to address the concerns of the vehicle manufacturers that sulphur poisons catalytic converters, thereby reducing their effectiveness to deal with all exhaust emissions. We feel this is another area where GAIA fuel can make an important contribution to the environment, because whereas Ontario gasoline contains anything from 200 to 790 parts per million of sulphur, GAIA fuel has a sulphur content of less than 10 parts per million.

Testing data from Environment Canada, Drive Clean, independent labs and the University of Hong Kong are all included with this information package, and the results cover a wide range of new and old vehicles, various makes and different engine types. All the tests were done on the basis of comparing GAIA fuel with gasoline.

The following data demonstrates GAIA fuel's improvement over gasoline in tests conducted by Environ-

ment Canada both on an old vehicle—a Plymouth Acclaim—and a 1998 Crown Victoria. In the case of the Plymouth Acclaim, the vehicle actually didn't pass Ontario Drive Clean testing using regular gasoline but did once GAIA fuel was used. Also, laboratory tests commissioned by fuel licensees in Japan and in Canada have not indicated any corrosion problems with the GAIA fuel blend.

As part of the HELPS initiative—and we'll go into that shortly—a comprehensive test program is being conducted in Canada by GAIA Energy, and we're proposing to work with the University of Toronto and the University of Windsor, the Canadian Vehicle Manufacturers' Association and individual auto manufacturers to develop further information on the materials compatibility of this fuel for compliance with North American vehicles. As well, this will confirm GAIA fuel under the World-Wide Fuel Charter category 2, which corresponds to the California TLEV category, and also as category 3, which corresponds to the ultra-low-emission California standard. An overview of the applicability of this fuel to the World-Wide Fuel Charter can be found in appendix C.

The next two pages cover some of the results in detail. Now I would like to pass you to our associate, Ross Blaine.

**Mr Blaine:** As you can see from the pages that Raymond just skipped over, GAIA has shown significant reductions in pollution over gasoline. Further, we are entering into a program called GAIA HELPS. Through that program, GAIA International is in the process of launching, first in Ontario and then to the rest of North America.

We know that GAIA fuel is a high-efficiency, low-polluting and safe oxygenated fuel. As I said, in HELPS, "HE" stands for high efficiency. Laboratory testing on dynamometers at Environment Canada in Ottawa has proven that GAIA fuel improves mileage by up to 10.8%. Thus, when the consumer is purchasing this product, they will get a better value.

Higher efficiency: a further proposition will be shown through on-road testing, which will be happening in the spring of 2000. This on-road testing is intended to prove that properly manufactured GAIA will also reduce maintenance costs as well as fuel costs. Tied to the on-road testing that will be undertaken with an initial fleet of 30 police vehicles, averaging about 100,000 kilometres a year, GAIA will also be submitting the fuel for materials testing with Canada's National Research Council. These tests, again, will be supervised by Dr Colledge, a world-renowned expert on oxygenated fuels, and Mr Carl Wintermeyer, retired director of R&D and new business development for General Motors.

The "LP" of HELPS stands for lower polluting. GAIA has well-documented information that our product is lower polluting. You have seen it in the previous presentation and we have included other information with this package. Copies of all that information are available, and it works.

The “S” factor in HELPS stands for safety. Through the testing conducted at the Universities of Windsor and Toronto, GAIA Energy will assure consumers that GAIA fuel is of the highest quality, provides exceptional performance and is more environmentally friendly than gasoline. High efficiency and low pollution are important, but safety is paramount for any new fuel, and GAIA International is proving that.

The test team at GAIA International believes that the use of this fuel will assist in achieving many of the objectives set out in the Kyoto accord and in the World-Wide Fuel Charter. As Raymond mentioned earlier, discussions are now underway with the Canadian Vehicle Manufacturers’ Association, supported by engineers of the Big Three automakers. This testing is scheduled for the spring of 2002, and our purpose is to prove that GAIA does help. It is an immediate solution to the near-term reduction of pollution.

Without further ado, I will turn it back to Greg to talk a little bit more about the sulphur content.

**Mr Binions:** Air pollution affects everyone. Every day, the average adult breathes over 12,000 litres of air. Children breathe more air per unit weight and are thus more susceptible to air pollution. The majority of people in North America live in areas where urban smog, carbon monoxide and other toxic pollutants pose serious health problems. These concerns can stem from either short-term or long-term exposure to air pollution.

Although significant reductions in exhaust emissions have been achieved by the auto industry in recent years, vehicles continue to be a major source of the pollutants that affect air quality. Two factors contribute to this situation, the first being that the reduction in emissions for each individual vehicle has to be weighed against the continuous increase in the vehicle population. The second factor, which you may not be aware of, is that emission control systems seldom last the life of a vehicle, and 80% of vehicle emissions are thought to result from the 20% of the vehicle population that is old. Our fuel resolves many of these problems.

**1600**

The major pollutants by volume are carbon monoxide, hydrocarbons, nitrogen oxides and carbon dioxides. In addition, some of the other pollutants: sulphur dioxide, benzene—which is a known carcinogen which is found in gasoline—toluene and xylene; for every one of these components, GAIA’s emissions are lower than gasoline.

GAIA fuel is a clean-burning alternative to gasoline and consists of a blend of naphtha and various oxygenates. It was developed in Japan and is sold there in over 300 stations; it has been for two to three years. It will shortly be marketed in other countries as well.

GAIA fuel is a liquid fuel, and unlike other alternative fuels, it can be used just like gasoline, as I mentioned before.

All of the pollutants that we’ve talked about above, such as sulphur, benzene, toluene and xylene, which are present in gasoline, are much lower in GAIA. One of the reasons is that GAIA fuel contains a very special blend of

naphtha. We’ve taken great care within our formulations to select a grade of naphtha that is relatively free of these products. In a typical case, gasoline has aromatics of 30% to 40%; our aromatics are under 10%.

**Mr Blaine:** In closing, we realize that GAIA, because it’s an oxygenated fuel, will take a long time to mature in the consumer market. We do believe, however, that it can get major penetration in the fleet market. In particular, we would like to see it going into marketplaces such as governmental fleets where environmental pollution reduction initiatives are looked for. It is cost-effective. It gives Ontario and our municipalities an opportunity to have a cost-effective, proactive initiative on Ontario’s part to reduce pollution now.

Thank you for your interest. We very much appreciate it. We welcome your questions.

**The Chair:** We have about a minute left. There’s hardly time for either caucus. Do you want to make a quick comment?

**Ms Churley:** It’s a question. Thanks for coming back again. Has your company approached any of the major oil companies to have discussions about perhaps injecting the fuel at the refinery? Would that add to the cost at the pump?

**Mr Binions:** To manufacture our product is slightly more than, say, regular gasoline, but it gives a 10% better fuel consumption. In addition, it’s a premium gasoline. But our goal, in co-operation with the Ontario government, is to be able to market it at the regular price rather than at a premium price, at which it currently markets.

Some of the oil companies, because we would be a major competitor to them, aren’t being the most helpful, whereas some of the larger players on the oxygenate alcohol side are actually being quite helpful.

**The Chair:** Thank you very much. We appreciate your presentation and coming forward talking about a relatively new product.

#### SKY GENERATION INC

**The Chair:** Our next presenter isn’t on the schedule; they accidentally got off the list. It’s Sky Generation Inc, Glen Estill.

For the committee’s benefit, Canwindpower, Chris Kuntz has been delayed. I’m not sure if he’ll make it in time while the committee is sitting.

You have a total of 20 minutes for your presentation. What’s left over of your actual delivery will be divided between the caucuses. For the sake of Hansard, please just state your name clearly. The time’s all yours.

**Mr Glen Estill:** I’m Glen Estill. I’m with Sky Generation Inc. I’m a wind power developer looking at building windmills in Ontario to generate electricity for sale.

Here’s just a little bit on my background: I am the co-founder of a computer distribution company. I co-founded it 20 years ago. It’s EMJ Data Systems, which is a publicly listed Toronto Stock Exchange company. I left that 18 months ago to pursue my interest in starting a wind power business because I see parallels to the

computer business in 1980, when I joined the computer business. The wind business seems to me to be a very similar condition, about to take off, much like the computer business did in 1980. In the last year and a half, I've been very active on the Ontario Wind Power Task Force. I know that you've had a presentation from David Boileau and other members of that task force, as well as members of the Canadian Wind Energy Association. I know that you're going to have a presentation from them at some point in the future and see the copy of their final report. I can only suggest that you look at that very seriously. That would certainly be, I think, the number one thing that you could do for the wind business in Ontario.

I was also elected as the vice-president of the Canadian Wind Energy Association in November, so I'm new on that. I have a bachelor of economics and a master of business administration.

The work of the committee is absolutely, incredibly important. I know that we're all aware of the environmental issues, the climate change, the air quality issues, and so on. I'm sure that's a good part of the reason that the committee was struck. But the committee is also quite possibly going to be responsible for the economic viability of the province in the future. I'll draw your attention to a few things.

One, there's a book that I think should be required reading for members of the committee. It's called *Hubbert's Peak: The Impending World Oil Shortage*. Hubbert is a geologist who, in 1956, predicted that the production of oil in the United States would peak in the year 1970. Well, production of oil in the United States peaked in the year 1970. This book goes through, in layman's terms, and talks a lot about why it is that you can predict that. It's basically all geology. You can take a look at all the land that has already been drilled, the land that they know has certain geologies, that just is not going to have oil in it, the percentage of oil that's already been removed from the areas that are already there, and it becomes a reasonably predictable thing to do. Kenneth Deffeyes is the author of this book. He took Hubbert's principles and applied them to the world oil situation, and concluded that world oil production will peak in the year 2006. This may not come to pass. We don't know for sure that's the case, but it might. If it does, then the work of this committee is all the more important, and goes much beyond just environmental issues.

I've also handed out a couple of articles to you. One is called "Methane Madness." It's about the impact of the rush to set up gas generating plants in the US, and the impact that will have on the natural gas marketplace. Also, I've handed out a couple of articles that I picked out of the *Globe* just a couple of weeks ago. One says the gas grid needs huge investment by 2015. It says that the demand for gas should rise from 23.3 trillion cubic feet to 31.3 trillion cubic feet by the year 2015. The thing I've always heard is, "Where are you going to get this extra gas? It's going to come from the Arctic, right?" The other article was about the Mackenzie Valley pipeline. The

Mackenzie Valley pipeline that they're proposing is going to carry 1.9 trillion cubic feet a year. So it's carrying about 25% of the increase in demand, and is not accommodating any of the decreasing production that we're seeing in the western basin and in the lower 48 states as the natural gas reserves are depleted. So I think it's a real issue that needs to be considered and that we need to prepare for—and that we need to think about moving toward a more sustainable energy environment, particularly for a province like Ontario, which does not have its own reserves of fossil fuels.

#### 1610

Deregulation of the electricity market is a tremendous opportunity to move Ontario to a more sustainable energy environment. In the market rules that were designed, there were two very good policies that were put in place. The one is they've defined wind as a must-run generator. That means that the grid will always accept all of the power that is generated by a windmill. Other generators will have to bid their price in. If they don't have the price at the right level, the grid may decide they don't want their power for that hour or that half day or whatever, whereas windmills, if they're generating, and the same would apply to water power, and must generate, then the grid will accept it. So that's an important rule that was put in place.

The other one is perhaps less important but also significant, and that's the ability to market green power. I do think we need to be cautious about green power. It is a voluntary means whereby the consumer can elect to pay more to buy power from a non-emitting source. In most jurisdictions where this has been tried, you typically have an uptake of between 1% and 3% of the population, but most of the population is not buying all of their power from green, so you're not getting anywhere near 1% to 3% of the load. You're getting maybe 0.25% to 1% of the electricity load taken up by buyers of green electricity. Exceptions to that can be governments. The federal government has announced that they'll buy 20% of their power from green sources by the year 2005. There have been some governments in the US that have also taken that kind of leadership position. The ability to do that is important in deregulation, but in and of itself it's not adequate to green up the electrical grid in Ontario.

One of the key things I think we need to get past—I'm a businessman. I have an economics degree. I've been in business all my life. I'm a capitalist. I'm a believer in free enterprise. But the first thing I realized, after being in this business for just a few months, is that energy is not a free enterprise business. It is very much influenced by governments in this country. If you look at any major energy initiative that we've ever had in this country, government has been at the forefront of it. Whether you go to the starting of Ontario Hydro and the Beck power generating dam at the turn of the century, the Trans-Canada pipeline to bring natural gas to the province, the founding of Atomic Energy of Canada to develop the Candu system, the building of the Candu reactors using Ontario Hydro, the starting of the tar sands project with

investment from the province of Ontario, Alberta and the federal government, Hibernia, which had federal government money equity investment in it, every major energy investment that has ever started in Canada has been started and initiated by government.

What I wonder is, if that is the case, the only way to truly level the playing field is to give renewables the same shot. If ever there was a time that it's needed, it's when the air is in need of cleaning up and when climate change is an issue. I think it's something we need to get past, the belief in total free market, and move into directing the way we want to generate our energy and recognizing some of the externalities that may be involved.

I'm going to try to keep this fairly brief, but you're probably going to say, "OK, what do we do?" One is that the government needs to set goals. There needs to be a goal that we want a certain percentage of our power in the province to be coming from wind; I would say 10% or 5% by 2010 or something like that. You need to pick a number. It needs to be publicly stated by the government and publicly supported in government ministries through policy development.

I can't tell you all of the policies that will need to be developed. I heard just last week that there's a new, second round of Market Design Committee meetings to talk about what the next stage of electricity restructuring is going to be. In particular, one of the issues they're going to talk about is capacity credits. What that essentially means is that the independent market operator will pay generators to build capacity. In other jurisdictions, sometimes they simply dismiss wind because wind is not an on-demand capacity where you can turn a button and turn it on, as you can with gas, so they don't pay wind to build capacity. They pay gas to build capacity. Of course, what that means is you end up with extra capacity on the market, which drives down the price of power, which makes it less viable for windmills to get built in the first place.

So there's a whole bunch of policy issues that need to be protected and looked at by government on an ongoing basis. There needs to be a strong statement by government that we're interested in supporting wind, we're going to support wind, and we're going to make sure that all of the policies that get put into place are going to make sure we head toward that goal.

You have to realize that in the province of Ontario right now there are probably five independent wind power developers, maybe eight. It's a very small business. If I looked at all the various committees that I could sit on—I sit on the board of directors of the Canadian Wind Energy Association; I need to have input on the Ecologo certification process; there's the GEO group, the Green Electricity Options group; there's the Market Design Committee—I could spend all of my time doing nothing but trying to make sure policies are made right, and I'd never get any windmills built.

So we lack resources compared to the gas business or OPG or British Energy or some of the big boys who have

existing resources in place. We need the protection and the support of government to say that wind can make a significant contribution to the development of the electricity grid.

The main one is a policy goal, a public statement, hopefully with all-party support, that wind is important and that we want to hit a certain goal. The main market mechanism to get there is a renewable portfolio system. I believe you've heard about that in other presentations, so I won't touch on it too much, but you can ask questions if you like.

There are a bunch of characteristics of wind that are highly desirable in Ontario. Ontario is still a winter-peaking area. The demand for electricity in December-January-February is 7% higher than it is in June-July-August in the province of Ontario. Although the peaks are high in August and July, the overall averages are higher in the winter in the province of Ontario. Wind generates most of its power in the winter. In addition, the reason we have winter peaks is because it's the heating season. Do you know what? When it's windy out, you need more heat because the wind is sucking the heat out of the buildings. So wind matches up very well with the peak winter requirements on windy days.

So there are a bunch of very desirable characteristics of wind that make it important to have as a key part of the grid. The wind industry, and I know you've heard this, has been growing by 30% to 35% a year worldwide. If we had the same amount of power capacity in Ontario as they have in Germany today, we'd be getting 13% of our power from the wind. That would cut our fossil fuel use in half.

With wind, we don't need to think small. Wind can be a very large resource for the province of Ontario that can be a very big part of the solution. We just have to make sure we set the right climate, make sure our policies don't do things that prevent the development of wind and, hopefully, we can see wind as a major part of the solution to climate change and to the emissions issues in the province.

I think that's all I have. Are there questions?

**The Chair:** Thank you very much. We have three minutes for each of the caucuses. Mr Hastings, I think you were signalling earlier.

**Mr Hastings:** How would you prioritize, for the wind energy industry, what is needed in terms of pricing? You talk about the green power option, of consumers having to pay a little—it's been advocated that there should be a bit of a surcharge there to assist the wind industry. That's on the retail side. On the other side, we've had advocates say that the surcharge on the stranded debt should not affect renewables, that there should be some kind of market-based incentives for renewables, whether it be a flow-through share or whatever types of financing, rebates, those sorts of thing. What do you think is the most important: the investment side, to get in wind more critical infrastructure companies here, or the retail side, the selling, the consumer side?

**Mr Estill:** Generally, in terms of incentives, what has been found worldwide—in California, in the early- to

mid-1980s, they had an incentive put in place to build capacity. What that did was everybody went out and built capacity and didn't worry too much about whether it worked very well, so the windmills didn't produce much power. Essentially, it was a poor design. So generally what is recommended as far as incentives is to make an incentive that rewards production to make sure the windmills that are built are well-maintained, operating and so on.

I would say that the biggest incentive that should be set up is a renewable portfolio standard, which would require all market players—retailers, local distribution companies and major power buyers—to buy a certain percentage from renewables.

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**Mr Hastings:** The other stuff will fall in place, you believe?

**Mr Estill:** Yes. If you have a renewable portfolio system, I think you have a good chance of having a pricing environment that allows wind power to develop in a significant way.

On the debt recovery charge, yes, I know that's been an annoyance in the industry, because it's been the view that, "I'm building a windmill. I wasn't responsible for building a nuclear plant, so why is my customer going to have to pay that off?" I think there's some logic there, but at the same time I understand the taxpayers need to pay off their investment. There's a debt that has to be paid somehow, and I guess we've decided it's the electricity buyers who are going to have to pay that.

**Mr Hastings:** Are you familiar with Indel, a company in Mississauga in the mid-1980s that developed and manufactured vertically integrated windmills, but because of technical problems the thing failed?

**Mr Estill:** I'm not familiar with them; I'm newer to the industry than the mid-1980s. Generally speaking, the technology has matured considerably, so that windmills of European design are achieving availability rates of 98%, which means they're available to generate power 98% of the time.

**Mr Hastings:** That means we have to import this product forever?

**Mr Estill:** Good question. The answer is no. If you have a strong wind policy in Ontario that has some length to it, I would say there's a good possibility that people will want to build here. It's a very logistics-intensive business. It does not make sense to build a steel tower in Denmark and ship it to Ontario. It makes a lot more sense to build that steel tower here. The same thing goes for blades. It's big, heavy stuff to move around, and it makes sense to build it locally. But the European industries are going to build in a jurisdiction that has support for their products. It's definitely an industrial development opportunity and a considerable one.

**Mr O'Toole:** I just want to comment—it's one of the areas I'm quite interested in because of the OPG initiative at Pickering. Part of that—I think it was the generator itself—was actually built in Ontario. Part of it was,

maybe the blades. I was there at the opening. I should know.

Just reading this brochure—I don't know if you've seen this one; it's from Wind in the Netherlands.

**Mr Estill:** Yes.

**Mr O'Toole:** It talks about offshore and the huge initiatives. They're pretty well developed, and they've positioned themselves to market the technology and the knowledge. It's clear that's what this brochure is about; it's trying to sell us some blades or something.

Which state has the 10% in 2010, that 10% will be sustainable in 2010? Isn't that Texas?

**Mr Estill:** The Canadian Wind Energy Association is talking about 10,000 megawatts by 2010. It's called the 10 by 10 policy. That's a recommendation by the Canadian Wind Energy Association to government to set this as a policy guideline, which of course would mean probably 3,500 megawatts in Ontario by 2010; we'd be just pulling our weight, not any more. So there's that. Denmark is currently getting 17% of its power from wind and is shooting for 50% by 2030.

You can really think big with wind. In Europe they're doing a lot of offshore wind development in the Baltic and in the North Sea. Lake Erie is at a shallow enough level that we can do considerable development in Lake Erie and parts of Lake Huron.

**Mr O'Toole:** There are two wind farms planned for Ontario, one for the Bruce area and one for southwestern Ontario—I don't know who is doing it—and there's one for Toronto too.

**The Chair:** They're also talking about one in Prince Edward and one along the Toronto lakefront. I just have one quick question I'm curious about. I'm told you require a crane to set these up.

**Mr Estill:** Yes.

**The Chair:** While we can't get wires or it's very expensive to take wires into a remote location, there are no cranes. Is any engineering looking at how we can raise one of these windmills without a crane or a helicopter?

**Mr Estill:** Yes, there's a company in Nebraska, I believe, that is working on a craneless erection tower. It would tend to be for the smaller windmills. I think they're looking at 600 kilowatts, which is a bit small on the commercial scale today. But I think they've only put up one or two towers, so at this point I think it's still very much leading edge.

**The Chair:** There's such an opportunity for wind power in remote locations.

**Mr Estill:** Certainly in remote locations wind development is quite interesting, because in certain places they're flying the diesel in to run the generator, and it can be costing \$2 a kilowatt hour.

**The Chair:** Thanks very much for your presentation. We appreciate your coming forward.

#### CANWINDPOWER

**The Chair:** Our next presenter is Canwindpower, Chris Kuntz. There is a total of 20 minutes for you. You can make your presentation. What's left over we'll divide



up between the caucuses for questions. Please state your name for the sake of Hansard as you start.

**Mr Christopher Kuntz:** My name is Christopher Kuntz. Our company is based out of North Bay, Ontario. It was suggested that I attend this hearing for the sole purpose of making sure that some of the people—clearly not all of the people, but some of the people—of northern Ontario were represented or had a bit of a voice.

The first page of my presentation is somewhat informal; it's just for your own personal perusal. I think what's really important to note about what our company is doing is that we've created two very large geographical triangles—you'll notice at the bottom of our first page—within the province of Ontario: in the region of Sault Ste Marie to Honey Harbour through to North Bay, which essentially encompasses a great part of Georgian Bay and Manitoulin Island; and in addition to that, another triangle goes from Sault Ste Marie to Timmins and over to Thunder Bay, covering the east shoreline of Lake Superior.

As the name of our company would imply, we are specifically focused on wind power. The company is two years old. We have a rather small but feisty board of directors, and we really enjoy the challenge of addressing the questions and concerns of people in northern Ontario.

Page 2 highlights some of the goals of our company. In the year 2002 we anticipate having 10 anemometers up in these geographical regions, five signed land leases and the same, if not more, power purchase agreements. It is very ambitious but not impossible, given the climate these days with the privatization of the electricity market.

The year 2003 would have us actually submit some of our environmental assessments for these said properties, at which time we would have pooled together a considerable amount of resources financially to actually begin the development and planning of the wind farms.

The year 2004 would have us actually doing the construction, and the year 2005 would see us having our first 50-megawatt wind farm built in one of these two regions, more than likely the Georgian Bay area, given its proximity to the larger markets.

Our friends at Great Lakes Power over in Sault Ste Marie have indicated that they have a long-term—when I say “long-term,” I mean five to 10 years—futuristic plan to get themselves into wind power as well, and we've notified them that we would love to be a partner.

The initial parcel of land we're looking at is between the Moose River bridge on Highway 69, at the junction of Highway 12, and Oastler Lake Drive south of Parry Sound. If you've ever driven that section of highway, you would know that there's a considerable amount of electricity passing through the area and to step up or step down from the grid would be relatively inexpensive.

The model of business under which we operate is a corporate co-op. Essentially, what that means is that we have set a cap on the amount of shares that any one party can control within the company, and that would be 20% with a minimum buy-in of 5%, encouraging the co-operation of and between many companies, governments,

utilities and corporations from all over the world to actually come together and collectively build these large wind farms. It would be quite impossible, I think, to ask any one individual to put the money up to do such a large project.

**1630**

Moving on to page 3, we work specifically, and spend a lot of our time, focusing on First Nations and the co-operation with First Nations in the province of Ontario. What we've said to many of the chiefs and councils in northern Ontario is, “Show us the land. If we can prove to you that there's a wind resource and if we can prove to our investors that there is sufficient wind to have a decent return on your investment, then we would gladly engage in a 50-50 partnership with the First Nations.” The obvious advantages of that are that if you build a large wind farm, you have to have a warehouse and you have to have technicians to maintain the machinery. That would bring jobs and employment into regions of Ontario where quite literally the unemployment rate is somewhere between 20% and 40%.

But the creation of jobs isn't enough in itself; we wish to run the wind farms like a business. If we put an anemometer up in a region and clearly there's not enough wind to make it economically viable, then it's a no go. That's intrinsically important for us.

Under the Clean Development Mechanism and Joint Implementation program with the feds, there's clearly a commitment on the part of the federal government to make sure that we move forward with renewable energy projects at various sizes and scales. We certainly plan to capitalize on that and make sure that foreign multi-national corporations are brought into our projects.

To summarize, in the event that we're not able to draw investors into the province of Ontario—and more specifically northern Ontario, because that's where our focus is—we may indeed actually have to look beyond our own borders and work with governments from other parts of the world, more than likely emerging economies where there isn't any infrastructure already for electricity, and wind power would, in that instance, make sense; maybe some kind of co-operation or joint venture with the government of Canada and the government of the developing country.

Hard to believe, all from North Bay, Ontario.

On the fourth or fifth page I made a list of some of the companies that we've been in contact with, companies that either we've approached and expressed an interest in forming a partnership with them, or vice versa.

We have a pretty warm reception from a lot of the municipalities in northern Ontario. To say that there would be a plethora of questions from them about how we're going to do this would be just a mild understatement. Where we seem to have our warmest reception to date is actually with the First Nations of northern Ontario. The whole notion of using renewable energy seems to be very much in keeping with their belief that they are the keepers of the earth. Beyond that, they see the opportunity to make money and have jobs, whereas in

other larger municipalities and cities, the planners and the people who sit on the local hydro company board kind of look at you and they go, "Well, we already have enough electricity. Why do we need renewable energy as well?" And that's perfectly normal. That's OK. We're anticipating, though, that as the price of electricity goes up, there will be an increase in interest in renewable energy, assuming, that is, that the price of electricity goes up.

We made up a quick recommendation list for a wind strategy. What we're hoping the government of Ontario would potentially do for the people who are trying to build up this renewable energy industry in the province at the moment is set up standards and safety for wind power operations.

You'll have to excuse me if anything I say has already been done. My knowledge of political standardizations within Ontario is somewhat limited due to the amount of time I've actually been in the province. I can tell you more about that after.

A less stringent environmental assessment for wind power: in our opinion, the power is already clean, bar the fact that there is visual pollution from putting them up along the horizon.

Registration of all companies in Ontario producing electricity, specifically wind power, somewhere that people who are interested or involved in wind power in the province can call on one another to find out who's doing what, what's being built, where, and what sort of level the construction or development is at.

A dollar-for-dollar match from the province of Ontario to meet recently announced federal incentives: the subsidy from Ottawa, as you are probably well aware of.

A clearly defined date by which these subsidies would cease to exist: that is to say, the day there is full free-market competition in the province, at which time consumers can then say for themselves, "This is the type of electricity I prefer" or "This is the type I do not prefer."

A commitment from the province of Ontario to ensure that 50% of wind farm development is indeed in northern Ontario: that's a somewhat biased request, given the fact that most of the people on the board are from northern Ontario. I'm from northern Ontario myself—a bit biased. We need the jobs and the economic diversification, so that's why.

A commitment from the province of Ontario to give First Nations a priority in this development, given the fact that over the last two years, as I see it, they are indeed the people who have said, "Yes, we'll sign the land lease, we'll sign the power purchase agreement, we'll do all of these things with you, Mr Kuntz, as long as you ensure that we get some jobs and a little bit of money out of the deal and aren't just left off on the backburners."

The last couple of pages are just a copy of our company brochure. It's somewhat humble, outdated and needs to be revised. There's a quotation from one of the First Nations that has gone forward with actually setting up an anemometer on Parry Island, and that's the Wasauksing First Nation. They've contracted our com-

pany to write up a wind data report for them, which will then be presented to some of the companies we deal with.

The last page is a letter that was actually sent to the city of greater Sudbury, which to date, out of all the municipalities in northern Ontario, has actually shown the most interest in building a large wind farm. Just yesterday, I was in Sudbury having a meeting with one of the gentlemen who sits on the board for this task force to build a large wind farm in Sudbury, and yet again I was astounded by the drive and the movement forward in that area to go ahead with the planning and implementation of such a project. I think it would do well for the city of Sudbury, considering the legacy of pollution that went on many years ago in the mining industry. Of course, we all know it's a much cleaner operation these days, but it just does very well for the image of the city in general.

That's all I brought with me today.

**The Chair:** Thanks very much. We have about five minutes. Mr Hastings.

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**Mr Hastings:** What is your realistic, conservative estimation of the capital that would be available from First Nations reserves in northern Ontario, considering that they get monies out of the Rama gaming agreement and monies from the feds on a number of fronts? What kind of seed capital do you think they have?

**Mr Kuntz:** Realistically, I think that if they were to engage in the development of a large-scale wind farm on their lands—and when I say large-scale I'm talking about 50 megawatts—the cost of building such a wind farm in today's market could range anywhere from \$75 million to \$95 million, depending on how much of a grid extension needed to be made to get the power from the farm to the grid. There are a lot of things that could determine the price difference.

I think it would be realistic to assume they could at least come up with 10% and might be able to finance the rest for their part of a 50-50 joint venture.

**Mr Hastings:** Reserves are also exempt from federal taxes, right? If a company or co-op is set up, as you're looking at, and you have an operation on reserve lands, as I understand it, you do not pay federal corporate tax, you do not pay a whole series of federal taxes that a company that's set up on non-reserve lands would.

**Mr Kuntz:** I personally haven't studied the aboriginal tax laws of Canada, but from what I gather based on hearsay, yes, that is the case.

**Mr Hastings:** What specific kinds of investment incentives do you think your kind of organization requires—not subsidies, because this government isn't in the subsidies business, unless it's in an area we haven't ferreted out. We generally got out of the subsidies/grants game years ago. We're looking at market-based approaches to trying to help you if we can—not just your type of organization but renewables in general.

Have you given any thought to the type of investment incentives, aside from what you normally get from angel investment? A flow-through share arrangement is one of

the things I have asked other interests about, to see what their thinking is on that.

**Mr Kuntz:** I don't know. As soon as I hear flow-through shares, I get a little scared. I was a geologist for eight years, and I saw an awful lot of flow-through shares.

I know there are benefits to using such a share system. Preferably, the way we see it, we would like to raise the capital privately to at least 50% of the value of the proposed wind farm, after which time we would not hesitate to go to a bank, to a lending institution and say, "Look, we've raised this much capital, we have the property, we have all the interested parties together. We've proven there's a resource we can tap into," and from that point just let the economy determine whether our electricity is economically viable.

**Mr Ouellette:** I think there are around 35 northern communities, mostly First Nations, that are based on diesel generators. Do you have cost comparatives for converting? I know a lot of these municipalities would be very hard-hit this year, because the winter ice road situation is not good for them. They don't have the weather conditions to provide the secure base so they can proceed with the roads. As a matter of fact, they're about a month behind. What that means to these municipalities is that they can't get diesel fuel or any other supplies in unless they're flown in.

Do you have cost comparatives to convert these diesel locations to wind power to help supplement it?

**Mr Kuntz:** Once again, it depends on the number of people in the community, it depends on whether there is high elevation, high land, within close proximity to the community. There are a lot of variables. I can give you what I feel is an estimation based on what I've read. From what I can gather, most of these communities that are on diesel, and having spoken to some of the economic development people within the First Nations, some of them are paying, after maintenance fees and fly-in fees and haulage fees for the fuel, anywhere from 22 cents to 28 cents a kilowatt hour on diesel. I don't know if that's correct or not. Once again, that's hearsay. That's what I have been told.

But I think that if you took a decent-sized turbine, say, a 250-kilowatt unit, and managed to hook it up to 200 or

300 houses and a community centre, even with some of the shoddiest wind conditions, you should be able to get it down to a cost lower than what people are paying for diesel at the moment. That's assuming you don't have to run an extension that's 10 or 15 kilometres long from the turbine itself to the community, because that's where you really incur some very significant costs.

**Mr Ouellette:** Yes, most of them are pretty close, and 200 or 300 houses would be a rather large community to be looking at.

**Mr Kuntz:** You can go with a smaller machine.

**Mr Ouellette:** With a lot them, if you go to 100 houses or 100 units in these areas, it's fairly large at that time. Would it be cost-effective in order to convert them over?

**Mr Kuntz:** Yes, of course, because you would leave the diesel genset there. When you don't have wind, the diesel genset kicks in. You're never going to be completely free from the burden of this diesel crisis.

**Mr Ouellette:** I think one of the points I'm making here, which was indirect, was that there are some opportunities out there for people like yourself to look into for communities like this that—

**Mr Kuntz:** I've been invited on more than one occasion to hop into a Beaver or an Otter to go and visit some of these communities. I lived in the Yukon for eight years, and my flying in small bush plane days are hopefully coming to an end. But if a community said, "Jeez, Mr Kuntz, thanks for faxing us all that data, thanks for answering all our questions, thanks for sending a technician out. By the way, we really want you here to survey the land for us," then I would probably do that.

**The Chair:** Thanks very much. We appreciate you coming forward with your presentation.

**Mr Kuntz:** With pleasure.

**The Chair:** Are there any other comments from committee members prior to adjournment till tomorrow? Hearing none, then we are adjourned until 11 am tomorrow in Ottawa, Crown Plaza Hotel, ballroom C. The select committee on alternative fuels now stands adjourned.

*The committee adjourned at 1648.*







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