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**Official Report
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(Hansard)**

Wednesday 17 April 2002

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des débats
(Hansard)**

Mercredi 17 avril 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**

Wednesday 17 April 2002

ASSEMBLÉE LÉGISLATIVE DE L'ONTARIO

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

Mercredi 17 avril 2002

The committee met at 1019 in committee room 1, following a closed session.

SUBCOMMITTEE REPORT

Failure of sound system.

Mr John O'Toole (Durham): —not just propane and other fuelled vehicles but more inventive fuelled vehicles, which we do today. I just throw it out. I would prefer if Jerry or the clerk, someone in the committee, would do the communications, and if it doesn't work out, that's fine with me. I've been there and so I'm not unfamiliar with it.

The Chair (Mr Doug Galt): I appreciate your comments. I think to encourage caucus members to attend is the responsibility of the subcommittee, not of staff, to get people out who are politicians. Anyway, we'll leave that with you and we'll continue with the visit on the 24th with as many people as we can get to come out.

So now we need adoption of the report. Those in favour of the subcommittee report? I declare that motion carried.

REPORTS ON CONFERENCES

The Chair: Now we move into reports from committee members who have been to special meetings. Who's leading off? Dr Bountrogianni, do you want to do it right from there?

Mrs Marie Bountrogianni (Hamilton Mountain): I'll start, sure. I guess you don't have copies of this, because I sent them out earlier. I apologize. I'll start. Can we get copies while I'm talking? It's a short presentation.

The Chair: Does somebody else have copies of their presentation?

Mr Steve Gilchrist (Scarborough East): I do.

Mrs Bountrogianni: Do you want to start, then, Steve?

Mr Gilchrist: Sure. I'm glad you summoned Hansard back so I could put on the record that I stayed here all last night finalizing this and trying to rectify the technical pillage that has gone and lost one of my three reports somewhere when they changed computers back in January. My already logged European trip is somewhere, and I had no staff member to direct me to, hopefully, a CD somewhere. So I will give that one in a more

abbreviated form than the other ones. I'll get Tonia to circulate these—if you would be so kind. There are three.

The first one I'd like to deal with is part of our visit to California. Members may remember that you took a different routing back and I had an opportunity to visit the California Fuel Cell Partnership. I've put a short briefing note there. This is the information I picked up. I'll give it to Jerry. I would commend the video to all the members. It is a very good presentation done in layman's terms that lays out not only the potential for hydrogen as a fuel but debunks a lot of the myths that are circulated from time to time as criticisms of hydrogen as a potential technology.

Basically, what it is: just about every car company in the world that has an interest in fuel cell development has joined together in a partnership, along with fuel companies, fuelling equipment companies and the California Air Resources Board and some other state and federal agencies. They've created a one-stop shop. It's a 55,000-square-foot facility. It has about 16 vehicles from different manufacturers in place right now. Their goal is to have 60 by 2003, and then growing beyond that when it evolves to its next stage. They also have other fuelling stations throughout the state. That allows them to take these cars down to San Francisco, for example, or down to southern California and still have a place to refuel them.

I think it lends itself to what we're doing in terms of the sort of demonstration site that would be most appropriate if the government adopts recommendations to explore alternative fuels and create consumer and business incentives. I think, particularly when you come to hydrogen and to fuel cells, you need a place where school kids and adults can come and actually see the cars, see the engines up close and see the fuelling equipment, because it's really quite fascinating.

So that's the California Fuel Cell Partnership, and all the information has now gone to Jerry.

The next report is on the Rio 02 World Climate and Energy Event, quite a comprehensive conference. If I had to say there was one focus, it would be solar, which would be appropriate, considering that Brazil is a very sunny place. As you'll see in the first few pages from the listing of the different sessions, it went beyond solar. There was also considerable time spent on wind and biomass. Where I found a lot of issues that were probably quite applicable here to Ontario was in their consideration of their rural and remote areas.

1030

There are 20 million people in Brazil not connected to electricity at all, and they never have been. That has forced them to develop some innovative approaches, perhaps not unlike the challenges we face in northern Ontario, whether it's the native reserves or some of the very remote communities like Attawapiskat, Fort Albany, Moosonee and Moose Factory.

Because they're challenged not only with the number of people, the sheer volume they have to serve, but with the relative poverty of the country generally and those specific individuals particularly, they have come up with very tightly constructed one-piece-serves-all technology. They have designed, for example, a heating unit that has a solar cell mounted on what would look like a couch or a recliner of some kind. At the same time the solar cell is able to generate electricity, all the rest of the energy that's normally lost to heat is going to heat a water tank contained inside this apparatus. So they get both hot water and electricity from one unit that costs \$550 and is capable of supplying the needs for a typical family.

They have also recently developed, in concert with the state agency for science and technology, a combination rechargeable battery pack and solar array that has, for the first time, given them the potential to have illumination not only throughout the house but outside the house. They have created an apparatus with six sockets into which rechargeable batteries fit. During the day, the solar panel charges the rechargeable batteries within each of these lamps. At night, you can take the lamp out of the socket and not only hang it up throughout the house but take it outside on the porch. If there are agricultural activities taking place outside, for the first time ever they are able to take something other than an open flame to illuminate their activities.

Not everything they've done will be appropriate to northern Ontario, but an awful lot of the inspiration is similarly motivated by very vast distances and the relatively sparse populations in each of the communities they're serving.

So I've detailed some of the notes. Now, at that conference—that is this pile here—there was a very good extracts book. My notes simply had to supplement details that are there. There is even further information coming on a CD: the verbatim transcripts of every one of the presentations. I've done a bibliography at the end, detailing what's in each of those documents that I've just handed in to the clerk.

Finally, the Globe 2002: the Globe is the largest biennial environment and energy conference held in North America. This was its seventh edition. It attracted representation from 65 different countries and literally hundreds of manufacturers. The largest convention centre in British Columbia was filled from one end to the other. This conference really does touch all the bases.

I think what was most exciting about this one was they had in place a number of practical applications for some of the theoretical stuff we have heard in this room from some of the presenters. For example, BC Hydro has made

a commitment to be a leading hydrogen producer and a hydrogen fuel cell promoter. They had an already-equipped hydrogen-powered Ford F150 truck in place, along with details of the fuelling station they've already built and their plans for a considerable expansion of that fleet very quickly. At the same time, just outside the building there were a variety of buses parked with all of the different alternative fuel technologies: hydrogen, natural gas etc.

There was a massive presence by the federal government at this conference. I'm pleased to say that there was also a very large presence by the Ontario government and by Ontario manufacturers. We had a considerable pavilion—and do every two years. But the federal presence was interesting because as I made the rounds—this is the information from that conference, sorted by type. Let me just highlight that in this pile here are various federal publications. I am struck by the degree of overlap between at least four different federal ministries, all of which are producing lovely-looking phone books listing all the various environmental programs and incentives and yet very little seems to have resulted nationwide in response to these programs. I can't say they should be faulted for not trying, but it would appear that there is a lack of coordination.

I would hope, as we move forward with our thoughts on the government response to our report, that we would want to be very focused in terms of which ministry should be delivering which program. If there are supposed to be consumer incentives or business incentives, I think we should offer our thoughts as to who is best capable of delivering those programs. Certainly we need to make sure, as we move into an area as technologically challenging as alternative fuels, that we make things as easy as possible for consumers and businesses to adapt and that we don't inadvertently create bureaucratic barriers at the same time as the technological barriers are being eliminated.

Another interesting presentation was by a coalition of all of the coal companies in Canada, both the producers and the users. They indicated that Alberta alone has enough known coal reserves to supply 100% of the energy needs of the United States for the next 140 years. They also believe that they will have perfected, by 2007, steam reformation, a gasification technology that would allow the use of coal in every respect in as clean an environment as any other alternative fuel. The Alberta government is making a major investment in the work of this coalition. They expect to have a prototype plant up and running within the next year. If my memory serves me correctly, the Alberta government has offered \$550 million toward proving that this technology will work. If it does, it may require at some point in the not too distant future another committee of this Legislature to re-examine some of the things that we're debating today, because I don't think there's any doubt in the presentations we've heard so far that today's use of coal is anything but clean and I think we have to be governed by the known technology that's out there.

However, I think it needs to be put on the record that they believe that the same way you can steam reform, or reform through other pressure techniques, methanol or any other liquid hydrocarbon, the same technology can be made to work on a solid hydrocarbon such as coal. If that comes to pass, then we may some day have a committee recommending we reopen our coal-burning plants. But I think we take that one with a grain of salt today.

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I think the other portions in there are self-explanatory.

I do want to touch on the visits in Europe as well. That is this pile here. That trip included a one-day conference in London put on by the International Solar Energy Society. It was certainly everything you wanted to know about solar power in 12 hours, whether you ever needed it or not, a soup-to-nuts presentation and quite technical in its focus as well. The handouts will assist Jerry if there are any gaps in our knowledge base when it comes to solar.

The next three days were at the largest hydrogen conference in Europe, the Hydrogen Expo in Hamburg. Every European company that's in the business of equipping cars, making the products themselves, making the fuelling technology or making the fuel itself was represented at that show; a major presence by companies, in particular from Germany, the United Kingdom and Italy, which seem to be the technological leaders in Europe right now.

The fact of the matter is you can buy a BMW 7-series hydrogen-powered car today. They don't have many of them, but they have them, and at the conference, as part of their presentations, BMW and Mercedes both indicated that by the model year 2004 they would be readily available.

I then visited the fuelling station at Munich airport that BMW operates to supply the fuel needs for its vehicles and I'm going to tell you, it's right out of Buck Rogers: no human intervention. It is all laser-sited, robot-controlled. It opens the fuelling port to the vehicle; a quick spray of air to make sure there's no moisture or anything else around the seal, to make sure it's clean. A probe is inserted; the hydrogen is fuelled in a matter of about three minutes if the tank was completely empty. The probe withdraws again, closes the fuel port, and off you go. A green traffic-signal-type light in front of you indicates you're free to go.

They are also using that fuelling station right now to supply a number of the buses and other equipment working at the airport in Munich. The Germans have identified airport equipment as one of their highest priorities to hydrogenize, if I can create that term, and they expect to fully convert Munich airport within the next two to three years. They are getting good buy-in from equipment manufacturers beyond the car and passenger bus configuration to include their fuel trucks and other specialty equipment.

The final stops were to the various manufacturers in Italy—Nuvera, which is Italy's largest fuel cell manu-

facturer—and visits to the largest utility in Italy. They presented some pretty interesting and bold plans for the expansion of hydrogen in that country. I was quite struck by the fact that Italy seems, as a matter of national policy, to have probably gone further than any other country in Europe. The Germans have made the most progress but the Italians have set the loftiest goals. Certainly the curve that they're following is a very aggressive, almost exponential one.

So I think we're facing some significant competition out there, and that was the whole point of those visits: to see where Ontario sits relative to the rest of the world, particularly the large manufacturing centres. We have to be very sensitive to the fact that this is not just an offensive exercise we're in; it's a defensive one as well. If we don't have the car plants making the alternative-fuelled vehicles, somebody else will. And if we don't make the solar panels and wind turbines, they will be made in some other jurisdiction and sold here. So I think the information gleaned at these trips will certainly help Jerry. It has absolutely helped me.

The other thing I would draw to your attention is that I have been so bold as to offer some recommendations arising from those visits. You'll find them in the Globe report. As well, to Jerry, the last two pages in the Globe report are questions that I think need further research. While I appreciate that we're getting close to the end of our mandate, we still have about six weeks, and hopefully you'll have a chance to digest some, if not all, of those questions. If you can get any answers, I would be most grateful. I'm sure the committee would benefit from those answers as well.

Unless there are any questions, those are my submissions, Mr Chair. Thank you for the opportunity to expand my knowledge. I hope it does assist the committee, and Jerry in particular.

The Chair: Thank you very much, Mr Gilchrist. Questions or comments on his report?

Mrs Bountrogianni: Excellent report. Obviously there is a considerable amount of overlap from our European trip, but a few differences as well. I will agree that although Italy is not quite as advanced as Germany in that area, it is growing exponentially. It's a major goal in Italy right now, and they're quite impressive. I'll talk a little more about that when my presentation comes up.

Ms Marilyn Churley (Toronto-Danforth): I actually do have a question when Mr Gilchrist is available.

The Chair: We'll get his attention in a second.

Ms Churley: I look forward to looking at some of these documents because, as you know, I did not go on that field trip. I just had a question—we'll be getting into the draft report later, but there's a section that I'll say in advance I'm going to object to, and always have, and that is including energy from waste as part of this study and report and recommendations that we're doing. I'm wondering if at any time at any of the conferences you attended energy from waste was part of a conference or trade show and if you have any information about that.

Mr Gilchrist: The answer is yes, a variety of technologies. At the conference in Rio there was a presentation by the state government outlining all the ways in which they produce energy today and their goals to find new sources. One of the top four ways they expect to generate energy in the future is through municipal solid waste incineration. They are already doing that near Fortaleza, up the coast about 500 miles north of Rio. That's the largest city that has it right now.

At the Globe conference there were no less than 12 to 15 different booths displaying different technologies, most of them related to gasification, and a variety of techniques: some under high pressure, some just in a closed chamber, some just through anaerobic digestion. There was one company, actually out of Hamilton, Ontario—they manufacture the products—that did deal with incineration as well.

So there was some exposure to that, and I would suggest that many of these technologies are shades of grey when you're talking about the disentanglement of a hydrogen atom from something else for the purpose of combining it into another fuel that is either burned downstream or burned directly. I would suggest to you very strongly that what I got, particularly at the Globe, talking to the various representatives from those companies, was that our concept of incineration dating back to the 1950s and 1960s, and the sort of incinerators that were built here in Toronto in particular, is completely out of fashion. The new technology is quite benign. There is one company in Vancouver that is manufacturing incinerators and selling them all around the world, including some here in Ontario, that have no stacks. There is no outlet; it is a completely closed system, and it's an incineration process that they're using.

So I wouldn't want to suggest to you that anyone around the world is looking at this as the solution for their energy needs, but I think many jurisdictions seem to have adopted this as one of the technologies they're looking at to supply some small portion of their energy.

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Ms Churley: I take it you don't have any documentation on that, because that wasn't something you were focusing on.

Mr Gilchrist: I believe I did pick up some at the Globe. More to the point, both conferences have promised the verbatim presentations in CD format. There will be some presentations in there that I would recommend you consider.

Ms Churley: OK. Thank you.

The Chair: Any other questions or comments? Mr Hastings, I think you had your hand up, didn't you?

Mr John Hastings (Etobicoke North): I think Mr Gilchrist raises a very good point, which I'll bring up in my report. I'd like the indulgence of the committee—are we going to be here this afternoon?

The Chair: Yes.

Mr Hastings: I'm hoping I'll have mine available by then. Right now it's under lock and key, it's so highly confidential. I've got a call in.

I think the question Steve raises, and it's in Marie's report as well and will come out in mine—and perhaps it's beyond the purview of our terms of reference—is how we get some of these things going. The hydrogen vehicle, for example: if we don't do it, somebody else will. We know the US, Australia, a good number of the EU countries and Japan are already manufacturing photovoltaics on a massive scale. We're not even in the ball game. So a question I'd like to leave is: do we need to have something in this final report asking these questions to be taken up by another group in terms of the implementation of these items? If we don't do the hydrogen car, somebody else will. How do we do that?

The Chair: Good question. I'm looking around the room. Do you want to comment?

Mr Jerry Richmond: Just a possible point for the committee's future consideration. One thing the committee could do—and other committees have done this in the past, so there is a precedent—is possibly include a section in the final report, a bullet-point list of issues for future consideration, where the committee could identify, say, a dozen key issues that it feels it couldn't address but that it feels merit attention down the road. In response to Mr Hastings, that's how I would suggest, from what past committees have done, we could address those types of things: issues for future consideration. We all know it's a vast topic.

Ms Churley: It's a good question, but I thought—and again when we get into discussing the draft report—that part of our mandate is to make recommendations as to how we can get some of these things going. We may not have all the answers, but one of the things we were doing was looking at implementation processes around the world: financial incentives, tax breaks and things like that. I think Mr Hastings is talking more about the technical aspects, even with the recommendation of certain tax breaks and implementation policies. I believe he was just referring to the basic nuts-and-bolts technologies of how you get this going. In that case I think he's right: we don't have that kind of data and information to fit into our recommendations.

The Chair: Other comments or questions on the report?

Mr Gilchrist: I certainly agree with Mr Hastings. Again, I might ask him to consider what I did in the Globe report in terms of the detailed recommendations. They're simply my observations, and I hope everyone else will reflect on them and their own observations in the site visits and the public hearings and offer different ideas, if that's appropriate, or endorsement for the suggestions I've made in there. But they certainly include implementation mechanisms and suggestions to specific ministries on actions that should be taken.

If that's what you were getting at, Mr Hastings, I think you'll find that the committee certainly has, as I understand it, the ability to make these recommendations. It then turns to the executive council to decide whether or not they want to implement them.

The Chair: If I can just make a couple of comments, as I flip through this, Mr Gilchrist, I'm overwhelmed

with the amount of work that you've put into this. That's one of the reasons I elected not to do some of the travel to some of these conferences because I realized how much work it would be to put together a package afterwards, and I just simply didn't have the time. But compliments to you for the detailed report that's in here.

I just happen to be on a page of recommendations for Management Board and SuperBuild, recommendations for MOE. It's extremely detailed, and I'm wondering, especially with the amount of work—and I haven't really been flipping through the others. This one is the executive summary on the Globe. It seems such a shame just to set these aside. I think we need to very seriously look at them. As I glance at them, of course there's a lot of similarities in what you have written, Jerry.

Mr Richmond: Totally independent.

The Chair: Totally independent, yes. Very similar in a lot of respects to what Mr Richmond has put in his report for us.

Does the committee want to give any direction, other than to have Mr Richmond read this and make sure it's totally incorporated into our draft report? I don't know how many others have glanced at this while Mr Gilchrist was reporting, but it is very extensive.

Mrs Bountrogianni: I would agree that the researcher, Jerry, should read it and take into account the recommendations, but as far as totally incorporating it, I think we're going to have a huge appendix or reference list to the final report. But there is a lot of overlap, and perhaps where there is overlap, that is what should be in the report, and then if there are more to be added from Mr Gilchrist's or any one of our reports, that could be discussed on one of the many, many dates we have set aside for report writing. But I would not agree to going through every report before that.

The Chair: Oh, no. I was simply acknowledging the extent of work that he must have carried out and if there were any specific ideas you people had on how to take advantage of the report. I think Mr Richmond would like to comment.

Mr Richmond: One other alternative, and I'll just throw this out. I'll certainly do my level best to digest as much as I can of your conference material, but another alternative, so that everything remains above-board and no one would feel that there's any favouritism: maybe a preferred approach would be that those of you who went to conferences, when we discuss my draft report, if you feel you want certain things made more specific, you bring them as discussion points before the whole committee, the committee debates them and then, if need be, there are motions. Then everything is above-board. Then no one can accuse me of favouring one or the other. So that's what I would suggest.

Ms Churley: In fact I was going to suggest something similar. Even though I haven't been on field trips, I certainly have some recommendations that I will be bringing forward. I think there are some good recommendations, from a quick glance, in Steve's report that should be included, and we'll probably all agree that

some of them should be reported. That's probably the best process. It would be useful, however, for the researchers to take a look and—

Mr Richmond: Oh, yes, we will.

Ms Churley: —of course the duplication, that's clear, but there may be some in here, especially in terms of Mr Hastings's questions around implementation. If there are some recommendations in anybody's report that we can all agree to that would help with the implementation, I would like to see them included. So I like that suggestion. I think it makes sense.

1100

Mr Hastings: I'd like to know to what extent one or two of the key recommendations from all the reports of members who have attended conferences could be put on the Web site with some kind of note that these are recommendations made by a specific member. The rationale for doing that is, as you know, that we've had some uninformed criticism about people attending these conferences. I think it's one way to show the work that members have put into the material and the seriousness with which they brought their attention, interest and motivation to their specific areas: in the case of Mr Gilchrist, hydrogen; solar for myself; and I think Dr Bountrogianni did wind and investment stuff.

I'm wondering to what extent we could take at least one or two items from each report as a flavour and put that on the Web site for people to view, even though they may not necessarily be in the final report. That would be my suggestion on how to let people know what we've been doing over the last number of months.

The Chair: Interesting thought. Of course, you could put that on your own Web site at any time. For the committee, there would have to be approval by the committee.

Mr Hastings: At some point, perhaps a subcommittee could look at that item and see whether we could do that over the next six weeks or so.

The Chair: Interesting thought, anyway. Other comments?

Mr Gilchrist: The only thing I would add to the discussion on the recommendations is that I certainly would never suggest they are a comprehensive list. I offer them only as reinforcement, where there is overlap with Mr Richmond, or inspiration for discussion around this table if it's something that was not dealt with. I have tried to give it a degree of specificity that hopefully would allow what we have learned in the course of our various hearings and visits to be transmitted in its entirety in a way that future readers of our final report won't suffer under any misconceptions and will recognize the tremendous potential.

If I wanted to underline any point, it would be that every single one of the things I have recommended in there is being done somewhere in the world today. There is no jurisdiction that is doing all those things; therefore, I think there is an incredible opportunity for Ontario to springboard beyond every other jurisdiction in the world by assimilating a more comprehensive package of in-

centives for business and consumers to move forward and adopt alternative fuel technologies. This is not pie in the sky. Every one of the various initiatives is being done in Europe or the United States or elsewhere in the world. I think that is a powerful part of the message we have to convey to the rest of the members and to anyone else reading this report: these are practical, economically justifiable and environmentally necessary decisions for us to be making.

The Chair: Further comments or questions?

Mr Richmond: John, in response to your point, I just offer this as an alternative: over the next six weeks, the members could certainly distill their experiences and major points from their conferences, and they could be mounted on the Web site. The only cautionary note is that once the committee winds down, the Web site will probably vanish into cyberspace somewhere. I'm not sold on this, but an additional point might be that if members want, they could distill their conference experiences in one or two pages and those could be appended as a written item to the main report. The only downside is that someone alluded to the fact that the committee caught some flak on its so-called junkets. I just pose that to you, to have a written summary that would be appended to the back of the report, as an option. That's for you, gentlemen and lady, to decide.

Mr O'Toole: I would like the word "junket" struck out.

Mrs Bountrogianni: I like that recommendation, but I feel I've already done that. I really distilled mine down, as you can see. It's not a comprehensive report; it's a summary of everything. I could distill it even more but, as you know, there are two filing cabinets full. I think I could maybe even rival Mr Gilchrist's contributions as far as the number of trees that I've killed in the process.

I think that this very short report was actually quite an accomplishment and I have to thank my then intern, Lyndsey Saunders, a great deal for helping me do that. I can try, but I don't know if I can get any more "summary" than this, except for specific recommendations, which I haven't done. I have summarized their recommendations within each summary, but I haven't specifically said what I think after all this. I've left that for the committee to discuss as a team, but I can certainly change my ways. I'll take that into consideration.

Mr Richmond: That's just another option.

Mrs Bountrogianni: Sure.

The Chair: Would you like to make any more comments about your report?

Mrs Bountrogianni: Oh, you don't want me to present it?

The Chair: Sure. I think we're moving on. We'll officially move to you for your report.

Mrs Bountrogianni: I hope you have in front of you now an executive summary of the conference papers for the Second Annual European Renewables 2001 Summit. I attended November 21 and 22. Attached to that, you will have references, which I did, by the way, send out in January or February, I believe, to everybody. The first set

of references are of the Brussels conference. The second set, even though it's dated December 12—that's probably when it was typed—is the European reference list from my visits in Brussels and Paris on November 23 and 24, not December. It was the same trip—I just want to put that on the record—even though the reference list has a December date on it.

I will go through some specific summaries of the conference very quickly and then talk about generalities, and then make one process recommendation that I think is important—whether it's in the report or not is up to the committee—from my experiences in Europe that week.

The summit was divided into financial institutions, governments, consultants and energy companies presenting. It was a very high-level, two-day conference—very comprehensive. There were some non-European companies as well, but mostly it was European companies. I happened to be there during the week that the European community had their initiative for energy and renewables, their dates and their targets, so it was a very exciting time to be there as well.

I'll start with the financial institutions. I think we can gain from Europe's experiences and Europe's mistakes. There were investors there from financial institutions who talked about how in the past investors saw the risk and what forms of energy they saw as risks as far as investing. That's important for us to know when we implement the financial implementations of the alternatives to fossil fuels.

One of the presenters gave risk levels, and had fuel cells holding the highest risk, followed by, in order of less and less risk, photovoltaics, microturbines and wind power. As we all know, wind power is big and very successful in Europe, so it's not unusual to have that order of risk. We also know from Mr Gilchrist's conference proceedings that fuel cells, although very new here, are not that new in Europe, but are still new, relatively speaking, compared to the other alternatives.

Another financial institution that presented was Melville Haggard of Impax Capital Corp Ltd, about the UK experience. This was interesting. This has also come up in our hearings about subsidizing power purchase agreements—the pros and cons. This particular company felt that market approaches were superior to subsidy approaches. I think we heard in some of the hearings here, too, that, in fact, if you are going to subsidize something, you either have to guarantee a fair number of years of that subsidy or you have to, as we heard out west, subsidize or give incentives to initiatives that you know are going to work. We heard that out West and we heard that in our hearings, so this is an overlap with Europe's experience.

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I then heard from a number of national governments and the European Union as a government itself. As I said, that week the directive on the promotion of electricity from renewable energy sources was passed in the European Union. The directive obliges the commission to make, if necessary, a proposal for a harmonized

community-wide support system within four years of 2001, with the operation of different national support subsystems, and with a transitional period of seven years. That's quite a few years. They've given themselves quite a few years. But I couldn't help but think, when Luc Werring was speaking and when other European countries gave their presentations, of the parallels between the European Union and the federal-provincial processes here. They have a bigger challenge, when you think of the massive cultural differences and the language differences, than we have in Canada, and yet they have been able, over the last couple of decades, to slowly but surely overcome these obstacles and come to a process whereby every country has to buy in, with a very flexible framework of time and implementation strategies and respecting each country's differences.

I couldn't help but think—and this is where my recommendation at the end will come in—that whatever we do, we also have to recommend to the federal government more communication and more provincial-federal initiatives. That's key. I guess we can extend that to our American neighbours as well. As I was listening to all the presentations, where there was conflict it was where one country was following the rules and another neighbouring country, which of course is half an hour away in some cases, was not. We have some similarities across the border. Then, of course, the issue of fairness came into play and the effect on the economy of the specific country that was following the rules versus those that weren't. We have some similarities between Canada and the US. But I think we have a long way to go in Canada as far as communicating with the provinces a coordinated approach to dealing with this. If anything, what I got out of this part of the conference was that there is a similarity with Canada, but if Europe can do it with all its differences, we sure should be able to do it in this country.

I listened to Mr Lemming from the Danish Ministry of Environment and Energy. Of course, we all know that Denmark is a leader in the field of wind energy. Accumulated capacity, private and public, has dramatically increased since 1986 with respect to wind energy. Energy 21 is Denmark's government energy policy and it sets targets for CO₂ emission reductions of 50% before 2030 and percentage targets for renewable energy of 20% by 2003. Again, they've given themselves a lot of time but they've given themselves a framework and targets. I think that in our recommendations we may want to consider being specific, but with specificity has to come flexibility, for obvious reasons.

Market incentives are crucial. The presentation concluded with a description of Denmark's offshore wind energies, an explanation of the tendering quota system and a discussion of future challenges of the large-scale integration of wind power. I have all of that. I've offered all of the resources I brought back in my suitcases to Navigant as well as to Jerry Richmond, and to the rest of the committee for that matter.

I heard from John Doddrell from the government of the UK's sustainable energy policy unit. Mr Hastings,

you'll find this interesting. He's from the Department of Trade and Industry. The government of the UK sees renewable energy as important to sustainability and security issues. Of course, this happened two months after September 11, so security issues were intertwined in most of the presentations. I don't know if that would have happened if the conference were this week—months afterwards—but definitely security came up often in November. The political role of government, according to this gentleman, was to help meet emission targets, stimulate the development of new technologies and provide diverse energy sources, as well as contribute to rural development.

I was at a meeting with my colleagues from Hamilton with farmers of the region last Friday and I told them about this committee, because they also talked about how farmers can get involved with renewables, with corn. In fact, they had all sorts of products there for us to look at that were made out of corn. So I told them that there indeed was an interest in this committee and I gave them the Web site. This was also discussed in Europe.

With regard to Kyoto, the UK will meet and exceed greenhouse gas emissions reduction targets by 12.5% by 2008 to 2012, and renewables currently represent under 3% of the UK electricity supply. I don't know if you heard that same number, but this is what I heard, Mr Gilchrist.

Now a renewables obligation requires all licensed electricity suppliers to supply specified proportions of electricity supplies from renewable sources, which perhaps would make a good recommendation, with compliance demonstrated by ROC, which is the renewable obligation certificate. But the UK government does support a market-based approach, leaving the choice of technology to the provider. So yes, have a target, have energy suppliers provide a percentage of non-renewables as part of their providing energy, but the consumer chooses. So there's that flexibility there.

Then I heard from a number of consultants who reiterated a lot and talked about the economic feasibility of new and renewable energy sources, but they do not on their own guarantee market enlargement. They actually talked about projects in Canada and the US in these presentations, so they're also looking to us.

I heard from a number of energy companies. Just as an interesting aside—this was about a week before the Enron disaster—of all the presentations, and I found them all very professional, very interesting, the one I detested was from the Enron people, which was interesting. I thought they were arrogant; they were very critical about everyone else's presentation and very abrasive. I sat back and I thought, "Hmm, this is interesting." So of course a week later Enron went under, or they had their difficulties, so I was thinking they knew something was up and they were taking it out on everyone else, or it was that kind of attitude that brought them down. But it was interesting.

Ms Churley: "Mr Badger of Enron": is that an actual name?

Mrs Bountrogianni: That's an actual name. I can tell you stories about Mr Badger. I'll tell you later, Marilyn.

I also heard from the Italian National Body for Electric Power, Bezzeccheri of Enel, which is the world's largest power producer dedicated exclusively to renewable energy. So as Mr Gilchrist said, Italy is not as far ahead as Germany, but they are bound and determined to be the leaders in this field. They have initiatives, they have funding and they have the public buying in as well. I think that's where we want to get to, actually. It would be nice if we could get there as a country and as a province.

Enron of course was there and presented its vision for green trade, but what Enron thought is a moot point right now. So I'll skip that.

P&T Technology, one of the largest wind farm developers in Germany, presented. I won't go over that because it's all here, except to say that the key success factors were competitiveness, profitable prices, regulation for feed-in and solutions for high inflation. So again, let the market dictate but with some control.

Pegrum of the United Utilities Service Delivery outlined key investment risks, resource/fuel supply, cost control, technology, procurement, and political and market risks. By the way, political and market risks came up in every single presentation, some more detailed than others.

Peter Webster of Inergy, which is a US-based propane marketing and distribution firm—I don't know if we heard from them here but I don't think so: "Most renewables require government support," according to this US company, "such as direct subsidies, special operating privileges, tax levy exceptions, and obligations on generators/distributors/suppliers, because the 'ethical' market is very small." He cited some research we also heard here in our hearings, that when you ask people in surveys if they want green energy, they will say yes; when you ask them, "Are you willing to have your taxes go up?" they will say, "Wait a minute." That was an American perspective.

So it's very different from the Europeans' perspective, who have gone through this and for different reasons have embraced green energy. They had to. They didn't have as much of the others.

The rest is basically repeating. There was a lot of overlap in the presentations.

Eurelectric's position is that renewables must be integrated into the market. It warns that feed-in tariffs are inextricably linked, subsidize and distort the market, prevent European synergies and do not provide improvement incentives. To simplify this, and this is important when you think of federal-provincial relationships, if one country gives incentives and the other doesn't, the country that does give incentives feels that's unfair, basically. How the consultants and the companies went around it is that they will go where the incentive is. If there's an incentive for production, they'll go there. If there's an incentive for distribution, they'll go there. It can be the same company in different countries, depend-

ing on where the incentives are. So that is how companies are getting around it, but the governments themselves within each country are saying, "We need something integrated," and that is what they're trying to do now.

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Brian Count of Innogy, the largest UK electricity supplier, believes that energy markets across Europe need to be liberalized faster to produce a more consistent climate for business, the framework for investment needs to be stable and the planning process must be supported by government and regulator but not overly burdened by processes and regulations. There must be regulation, but there must be flexibility, I guess.

Then Stephan Singer—who's actually quite famous—from the World Wildlife Fund. You might have heard—

Ms Churley: Yes.

Mrs Bountrogianni: He was actually the star there, and he gave an excellent presentation, which Enron just killed but he was very good at addressing Enron. He made a number of presentations: the removal of barriers, such as hidden and real subsidies for conventional fuels—you heard that here too—and tax breaks and/or European union-wide feed-in tariffs—again that consistency across Europe which we can maybe generalize to consistency across provinces—and the development of a solar belt for the OPEC nations of North Africa and the Middle East. That is another thing that came up over these presentations, and I didn't know how relevant it was. I didn't include it, but they are in the references. There are huge markets out there. You alluded to that, Mr Gilchrist. They are tapping into those markets now. I didn't include it but, for example, Spain and their wind power: they are distributing it all over, not only Europe but in parts of Africa as well and the Middle East. They went through what they went through and now they're grasping the opportunities financially.

Then I also had a meeting the next day, November 23, with OECD and IEA—I have all the references here, dated December 12 but indeed it was November 23 and 24, which I will submit to the researcher, to the clerk—basically talking about the good relationship Europe does have with Canada on these issues and the frustration over the last two decades in Europe but that they feel they're finally getting somewhere. They have an excellent relationship with Natural Resources Canada, which was good to hear. So perhaps that's a starting point for us too. Whatever recommendations we make federally, we may want to look at Natural Resources Canada, because if they're working well with Europe maybe they'll be motivated to work well with the provinces as well.

That's very summary of my four days in Europe, and I thank the committee for the opportunity. Because I had a different starting point than Mr Gilchrist, I probably learned a lot more about renewables, and it was very worthwhile. Also because I went fairly early, in November—well, my starting point was very minimal—it gave me a good background for asking questions during our hearings. It was excellent. So thank you, and I will submit a couple of suitcases full of books to you.

The Chair: You have a similar collection, do you? Thanks very much for the report. Questions or comments?

Mr O'Toole: I appreciate the report. I just wanted to point out a couple of things. I'm observing some contradictions, not that it's a critical thing. I'm sure that contradiction existed.

I looked with some interest at page 2, where it says under the Jorgen Lemming, Danish ministry presentation, "market incentives are critical." That's the middle of the second paragraph. When I look at the concluding paragraph, which is really from Stephan Singer, it's renewable policy needs or whatever, it says, "The presentation makes a number of recommendations including: the removal of barriers such as hidden and real subsidies." That's the dilemma we're faced with in a policy sense: the pricing issue, the real cost of energy, full-cost price, and we've talked about that. But one of the strongest emerging things is this whole renewable portfolio of standards, which really has to be the incentive in some way, and I probably agree that it should be. But what is your real conclusion, given that we're in a market that's changing to an open market, which I think is being fought at every step for the wrong reasons? It's about not moving on from where we are. Even Steve's report, his conference summary from the Globe, I think really makes the point you've made. He says none of the changes he observed, like in the Pennsylvania market, none of this opening of competition would have happened without competitive energy or a power system that's competitive: hydrogen, wind, photo. That's what is happening here. We and where we live, whether it's biomass or hydrogen or whatever, need the competition.

So I'm putting two questions to you. You saw the contradiction in Europe: many jurisdictions can or cannot incent into the grid. When it all opens up over there, they're going to be just like us in Canada, or with our northern partners. If we're incenting, it becomes a kind of free trade issue, technically. Do you believe we should open the market? That's my question to you. I'm asking it because I think it's a really important question: opening it to what?

Mrs Bountrogianni: I'll answer the first part of your question, about the European contradictions. There were indeed a whole range of opinions not so much on whether it should be an open market but on how much regulation should be there and how much incentive there should be, how much tax levy there should be. There wasn't anyone who said it shouldn't be an open market, because Europe is totally different than North America in that way; their history is different. They had to open the market 20 years ago. I remember visiting relatives over there, and we had to turn the lights off for two hours a day. That's how bad it was. It's not like that now, let me tell you.

I think our platform is fairly clear: we disagree with selling off Hydro One, but we see as an advantage the opening of the market for green energies with strong regulation. Especially given what this committee is

doing, we see it as an advantage. You asked me for my opinion. My opinion, in this case, coincides with my party's opinion; I don't know if George wants to add anything. I wasn't going to bring our policy up, but you asked me.

Mr O'Toole: If I may, without getting into debate, just complete that, I suspect they are two separate issues; that is, the opening of the market on the generation side so that we allow consumers product choice on their bill, "Do I want wind? Do I want solar?" so that we can change the demand load to different forms of energy—

Mrs Bountrogianni: As long as it's fair competition, Mr O'Toole.

Mr O'Toole: Oh, yes, that's where it comes to pricing.

Mrs Bountrogianni: Chair, he asked me. I wasn't going to bring our policy up. This is another committee. But Mr O'Toole asked me, and I don't mind answering: as long as renewables can fairly compete with non-renewables; otherwise, we don't agree.

Mr Hastings: Dr Bountrogianni, to what extent do you think the commitment by the EU, or the stronger partners in the EU, in whether they've adopted Kyoto, came out in the conversation? Did you get any impression that the Europeans are using the Kyoto agreement supposedly as an environmental guise, which is fine, but also as a strong economic weapon to beat the hell out of us in North America? Given that I see that the reactions of the environment ministers and the EU environment commissioner were very vigorously negative about Canada trying to use clean-air credits, ie the application of natural gas, as one of the ways to help us get through Kyoto, yet they're demanding that we ratify this thing without the United States. I don't get the impression that they have much appreciation or understanding, or the willingness, to see that we would need that kind of assistance if we're going to go against the Americans, who aren't going to ratify Kyoto. How many other European countries have actually ratified it? Has the UK ratified it or simply got at the work of reducing greenhouse emissions?

Mrs Bountrogianni: Actually the only time Kyoto even came up at the conference was to criticize George Bush. Canada never came up with respect to Kyoto. I didn't go there to discuss Kyoto, so I didn't bring it up. I don't have an answer to your question.

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Mr Hastings: Do you think they're using their aggressive environmental position as an effective weapon on the economic front in terms of all these renewables?

Mrs Bountrogianni: Definitely.

Mr Hastings: Right now we are going to end up being a basket case, importing this stuff and selling it into the Canadian market, if we don't change that mindset.

Mrs Bountrogianni: They are definitely taking advantage of the economic possibilities of renewables. They see it, and that's what this conference was all about: seeing it. But we had a whole range of presentations with respect to how strong regulations should be, whether

there should be subsidies or not, what the experiences have been where there are subsidies in one country and not in another, and so forth.

Mr Hastings: On the financial side, did you come across any financial services people who see the vast opportunity in the trading emissions field, with CO₂ and NO_x and VOCs, and how you could use that to set up a model you could sell to the rest of the world on greenhouse and other types of toxic emissions?

Mrs Bountrogianni: Yes. In fact, and I can get this for you, look at the reference list, Peter Webster's paper—green energy trading, synergy, global trading.

Definitely they see this opportunity. I go there for family two or three times a year. It's pervasive in their lives. It's something they've bought into because they've had to buy into it, and they've embraced it a lot more than we have in North America. That part I knew even before this trip, but the details were very interesting.

Ms Churley: Thank you for your report. I have a question on what you said last, and perhaps both of you may not know this: what kind of conditions existed or exist in Italy, for instance? Why have they taken on such a leadership role in this? Is it partly environmental or economic? What is it?

Also, it's too bad Mr O'Toole had to leave the room, because he raised a very important question around the deregulated market. Of course, I beg to differ. The position of my party, the NDP, is different from the Liberals and Tories on the generation part. One of the things the environmental community in Ontario and some of the research I did—we have to take into account that we are talking about all this and putting out a report in the context of, and sort of under the cloud of, the privatization and deregulation of both Hydro One and generation in this province without really knowing what the rules are going to be. We haven't really looked at the impact and implications of that overall as to the rules that now exist and how it's going to impact and affect government's ability do some of the things, tax-wise, incentive-wise etc, to bring in some of these new alternatives.

Second, there are questions around the coal-fired plants here, which don't operate at full capacity except in peak times, and the alarming fact that a private company is going to run those seven days a week, 24 hours a day, to sell power to the US.

Those are the kinds of things that, no matter what side of the equation you're on, I think we would all agree we have been discussing and coming up with recommendations pretty much devoid of the criteria around the new reality in Ontario, unless the NDP can stop it, of course, which is something we'll continue to work on. But I find that to be a problem. That's a statement and a long question.

Mrs Bountrogianni: I'll answer your question—the statement is on record. The question is about Italy and why. I think it is a combination of need, the environment, an energy shortage, as well as being attuned to the financial contribution that renewables can make. I think

it's a combination. They have gone through decades where they've had to conserve energy and, much earlier than us—I guess one could argue we're a little late in finding out we should be looking at this—they had to. Basically, they had to.

With respect to your latter statements, I think this is a golden opportunity for this committee to make recommendations within the new reality. For example, some of the recommendations here or some of the initiatives in Europe were for energy providers to guarantee a certain percentage of their energy to be renewables. That could be something that we can take advantage of, whether we agree with it or not, with what is happening May 1.

If I see anything positive around May 1, it is the fact that renewables may have a stronger voice, but we have to be vigilant about that. Otherwise, I agree, it'll be a disaster.

The Chair: Further questions or comments?

Mr Gilchrist: I'd just like to add to Ms Bountrogianni's response to that question that there are some other dynamics taking place in Europe. There is some history, and the inspiration probably was originally the relative shortage of energy, for cogeneration facilities. Instead of the very inefficient way that we heat water, they use systems that, in the heating of the water, use the air to then heat the house. Some of the systems that are on the market right now are about 80% efficient.

One of the Italian companies, Nuvera, is very actively developing not just transportation but residential fuel cells to take the cogeneration-type systems one step further. They see this as a market that is already softened because people take as a matter of faith that that's what you do in your house; there's already a combination between various energy needs. To go one step further and now have a fuel cell that also generates the electricity at the same time as it's generating heat and heating your water, all of those things, is a fairly small step, as they see it. That's probably where their biggest market will be in the short term. In the longer term they talk about transportation issues.

It really is remarkable, the extent to which North America has developed systems like water heaters that are so inefficient and a stark contrast to what countries in Europe have been doing for decades. So I think they had a head start on us because of these almost cultural expectations that they had to get more out of their energy than we did.

By the way, I just wanted to mention that the clerk has distributed a selection of articles that I'd accumulated in the last few weeks. I don't know if anyone found them interesting. I also have two letters that I received from the company that didn't manage to appear in Vancouver, the company that had a diesel additive and a technology to take sulphur out of coal—it's another form of clean coal technology—and I offer those for your consideration as well.

The Chair: Further comments or questions on Dr Bountrogianni's report?

Mr Hastings: I hope, Mr Chairman, that it's noted when we go through the final draft about Dr Bountrogianni's reference to the Danish ministry of the environment and the wind potential that we are losing here. I just saw recently that regrettably Prince Edward county decided not to have Vision Quest develop any kind of wind potential in Lennox or Prince Edward counties in eastern Ontario because of siting problems, the so-called avionics. It's something this lady who was here during the last round of presentations mentioned: to me, a bit of a bizarre conflict between the conservation environmentalist and the energy environmentalist entrepreneur. I hope we come to grapple with that very clearly, given the experience—I think it was Prince Edward county that rejected the potential of wind energy, for whatever set of reasons there—how we put ourselves behind the eight ball again with these two items, when you look at the Danish experience, the Alberta and BC experience, California to a lesser extent, something I hope we reference and bore into when we get to that part of the report.

1140

The Chair: Did you want to respond to that, Dr Bountrogianni? I would like to make a couple of comments as a follow-up.

Mrs Bountrogianni: No, that's fine. I appreciate the comments.

The Chair: It's close to my riding and where I live, near the village of Hillier. I think the comments and the concerns had to do with emotion, not having seen a wind farm. They were talking about the sound. They were talking about all the birds it would kill. They were talking about how terrible it would look. Just as I passed the pictures around that Mr Gilchrist has taken, I would be proud to have a wind farm behind my house or in front of it or wherever. I think it would be absolutely intriguing to have something in my community. But there was just no give or take with the group there, and the council involved with planning bowed, or agreed with or whatever, and did not proceed. I think they may take it to the OMB and move through that, but I found it very disappointing. They seemed to want to beat up on some committee members. Whether they did or didn't recommend it or did or didn't see it seemed to become a big focal point. I think that was very unfortunate. And maybe the company from Pincher Creek was trying to take advantage of the fact that we were there, in all fairness. I'm not sure. It was just unfortunate that we don't have a place in Ontario where—apparently that's some of the best wind in southern Ontario. Take this in the proper way, but maybe if we had a few on the Toronto waterfront it might make it more appetizing to rural Ontario: "Hey, they don't mind it in downtown Toronto. Why are you complaining out here?" Certainly as I drive east and look south to the Pickering station, I think that's rather attractive to see that windmill turning in the air—my comment as Chair.

Ms Churley: It's a good point. We had that sharp contrast between, as you put it, the conservationists and

some of the environmentalists. Toronto Hydro put an experimental wind turbine, windmill, in the Ashbridges Bay area and we ran into the same problem. There was a split and there was quite a fuss in the community over it. Frances Lankin was then the MPP for that area and that was one of the few times when we worked co-operatively with the present government and wrote a letter urging that this go ahead, that there not be long, drawn-out EA processes. At the end of the day we had some constituents quite concerned and angry. But I suppose that's going to be the challenge for us, having to make at some point some kind of—I don't know what the OMB is going to decide, but at some point we are going to have to take a stand and not let communities hold us back in this area. I don't know what the recommendations will be on how we go about that, because it is at this stage a municipal issue. So it's something that we are going to have to grapple with. I think on the whole people are going to oppose it because it's new.

The Chair: One of the problems we deal with in rural Ontario when something like this comes up—it's new, it's a change—"Oh yeah, Toronto solutions laid on rural Ontario." That's what I have to deal with as a rural politician. That was the reason for my comment over here. I really wasn't trying to be nasty; it's just what I struggle with on a daily basis.

Mr Gilchrist: I would just offer for your consideration—and I guess this is one thing, apropos to an earlier comment, suggestions that hadn't made it into the draft report. You'll find under the heading "Recommendations for MMAH" a suggestion that the Planning Act be revised by July 1 of this year to apply a provincial standard for zoning for wind farms and photovoltaic systems immune to municipal alteration, to define as any other agricultural use is defined wind farms or solar arrays.

I think that would take away the NIMBYism and the somewhat parochial attitudes you're talking about, Ms Churley, that afflicted the application at Ashbridges Bay. Of course, we were pleased to co-operate, as we always are, when you made your entreaties for rapid consideration. But I think it's no less valid out in Prince Edward county than it was in Ashbridges Bay.

It is sad: the edge of the Great Lakes and the edge of Hudson Bay and James Bay have the highest wind loading in Ontario. So to have found a site like that and to have seen, as Dr Galt has described, a number of criticisms based on mistruths, misinformation and uttered by people who admit they've never seen a wind turbine was disconcerting.

I too have a farm not far from that site and I know how windy it is there. I think it's quite distressing that here we have such a minor bureaucratic barrier to the adoption of a green technology. That's why I've suggested in that list of recommendations that if you don't like the timetable, which is an aggressive one—by this summer—then I think those are the sorts of responses I hoped my recommendations would elicit from you. But if you do agree, then I'd like to see something like that in

our final report as one of the action items that we call on the various ministries to commit to, to make sure we never again see a Prince Edward county or an Ashbridges Bay type of situation.

The Chair: Thanks very much, Mr Gilchrist. Other comments?

Mr Hastings: I think it's really instructive, from our reports and discussion thus far that should find their way somewhere into the final report. Something along the lines of lessons to be learned or the whole issue, as I come to think more about this, is that here we're sort of pioneers or early adopters. We want to see this stuff get implemented, and yet you get dismayed at seeing how little items, misinformation, can put the whole thing aside. I think we need to have something in the report about the mindset of blocking and resisting these proposals for alternative fuels, whatever source you use. You can bring these things up in their own context to block anything. I think we've got to have a massive educational awareness program here about this kind of stuff.

The Chair: Interesting. OK, thank you.

I guess we're still on comments on Dr Bountrogianni's report. We got off into a bit of discussion here. We'll wind up or go till 12 o'clock and then we'll have Mr Hastings after lunch. Any other comments on Dr Bountrogianni's report? Again, thank you very much. In spite of it being condensed down, it's quite extensive.

I was wanting to check with you: you had a list of priority risks. Do you have those handy? I just want to jot them down. I didn't jot them down when you stated them.

Mrs Bountrogianni: Fuel cells hold the highest risk—this is from Europe's experience—photovoltaics is next, microturbines and wind power, in that order.

Ms Churley: The greatest what?

Mrs Bountrogianni: The greatest risk in investment.

The Chair: Microturbines referring to hydraulics?

Mrs Bountrogianni: Yes, and wind power.

The Chair: Or is that gas turbine?

Mrs Bountrogianni: I thought it was—

The Chair: Hydraulic?

Mrs Bountrogianni: I thought it was. Because it's Europe, so it would be hydraulic, wouldn't it? I'll look at the paper.

The Chair: Probably gas turbines would be higher than that.

Mrs Bountrogianni: You know what? I did this in November. I don't remember.

The Chair: Fuel cells, photovoltaics, microturbines and wind.

Mrs Bountrogianni: I can check that.

The Chair: So probably a gas turbine would be higher than a fuel cell. I would think so. That makes sense.

Other comments? We've wound up? Enough discussion on Dr Bountrogianni's report? Thanks very much. The committee stands recessed until 1 o'clock, at which time we'll receive Mr Hastings's report and then, once we wind up with that, we'll move in camera and discuss the writing of the final report.

The committee recessed from 1150 to 1304.

The Chair: I call to order the select committee on alternative fuels. We look forward to Mr Hastings's presentation.

Mr Hastings: I'm sorry to disappoint you, Mr Chairman. I don't have the stuff, so I guess we can move expeditiously on to the final draft. I would ask the committee's indulgence to do it first thing tomorrow morning. Is that fair and square?

The Chair: Tomorrow morning at 10? OK.

Mr O'Toole: He's not up to the job.

The Chair: Our apologies to Hansard for asking them to come back this afternoon, but I guess we move on to report writing in closed session. Do we need a motion to move to closed session? We just move?

The committee continued in closed session at 1305.

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