

[Chairman: Mr. Oldring]

[2:03 p.m.]

MR. CHAIRMAN: Good afternoon, everyone. We'll call the meeting to order. I want to begin by welcoming the Hon. Neil Webber, Minister of Energy, and Mr. Bill Yurko, the chairman and chief executive officer for the Alberta Oil Sands Technology and Research Authority. We're delighted, gentlemen, that both of you could be with us this afternoon. I should say, Mr. Minister, that this committee did have the opportunity of visiting the Underground Test Facility near Fort McMurray. It was a very helpful visit for the committee, and we were very pleased that Mr. Yurko could be there himself to greet us and help tour us around.

For the information of the committee members, I've also received a copy of *Mining for Black Gold*, put out by AOSTRA. I'll leave that with the committee secretary. It was sent to us by Mr. Rick Luhming.

Mr. Minister, things haven't changed formatwise since you were here last year. We still extend an opportunity to you and Mr. Yurko to open up with some brief comments, followed by a question-and-answer period. I should say to the committee members, and this is getting habitual with this committee, that we've received another report hot off the press. I think it's the third one in two days where the ink is still a little on the wet side. I was thinking to myself that we really are providing a service by inviting people to appear before the committee: it helps them to get their annual reports done. On that note, Mr. Minister, we'll turn the floor over to you.

DR. WEBBER: Thank you very much, Mr. Chairman, members of the committee. I would like to make a few comments. I'm happy to have the opportunity to be before the committee together with Mr. Bill Yurko, who is heading up the Alberta Oil Sands Technology and Research Authority. The authority, or AOSTRA as an acronym, is playing a very important role in preparing ourselves for the future development of our oil sands and heavy oil areas of Alberta, together with their very important work with enhanced oil recovery and research in cooperation with universities and also the private sector.

As a government we have as a priority the development of these vast reserves, the oil sands, that contain more oil than the entire oil reserves of the Middle East. Approximately half of the world's heavy oil/oil sands reserves are right here in this province, which means a phenomenal resource for the future of Alberta. As a government we have put a priority with regard to expending research funds to unlock those vast resources, and also we've been involved in looking at how to upgrade heavy oil to light synthetic crude and have recently, as you know, negotiated an agreement between the federal government, the Saskatchewan government, ourselves, and the private sector, namely Husky, for an upgrader in Lloydminster which will convert heavy oil into light synthetic crude.

The economics of that upgrader will depend upon the differential in price between light synthetic crude and the heavy oil that goes into it. World oil prices have been soft lately, firming up somewhat now, but one of the concerns that has been expressed to me is the economics of that upgrader. What price does the world price have to be for that differential to be such that it would be economic? Unfortunately, heavy oil has taken a further drop than light oil recently, and the differential between the two is approximately \$9 U.S. a barrel, much above the differential that's required for that upgrader to be an economic one. We were talking \$5, \$6 U.S. for that to be economically viable.

Now, I hope that doesn't stay that way very long, because that's too low a price for our heavy oil and we would not see the development of our heavy oil in situ projects with that low a price.

So we are committed to upgrading our resources here in the province. It's a priority of our government. In line with our priority was working towards that agreement. Also, the negotiations led to the announcement of a new oil sands plant, namely the OSLO project, Other Six Leases Operation — OSLO is the acronym for that — engineering work to be done over the next few years and construction to begin in 1991 for production to begin in 1996. The construction of these two projects go in tandem with each other, whereby the Lloydminster upgrader would be completed and starting to operate by the time the construction begins on OSLO. Coming back to AOSTRA again, AOSTRA has played a role in the work leading to the negotiations on both of these projects.

One of the highlights of the year has been the major conference in Edmonton this summer called UNITAR, a conference on heavy oil and oil sands, with many countries from around the world attending — the chairman could probably add to my comments — significant world oil countries such as China and Russia here for the first time. I believe that without a doubt this conference left the people who went back to their respective countries with the feeling that we in this province are indeed the leaders in the world in research and development in heavy oil and oil sands work.

Now, Mr. Chairman, we did bring today, as you mentioned, the 1988 annual report to hand out to the members of the committee — it shall be made public after today — and along with that two handouts, which I believe all members found inside the report. The first one is: analysis of heritage trust fund approved funding and the cash drawn up to March 31, 1988. Am I accurate in that all members have a copy of that?

I would like to spend just a few moments on that first page. Going back to June 1974, \$100 million was allocated to this when the Act was passed. We see the drawdowns: 1976, '78, '79, and '80, another \$165 million, for a total of \$318 million. The total 10-year heritage trust fund funding was \$418.7 million, and the funds drawn down to March of this year were \$403.7 million. Funds to be drawn down for the year ending March 31, 1989, an additional \$9.9 million, for \$413.6 million, leaving a balance of \$5.1 million remaining to be withdrawn from the heritage trust fund allocation.

As you know, over the last several years there's been a shift in funding from the trust fund to the General Revenue Fund, and that's summarized below where you see the funding source: the heritage trust fund, which we call the old funding, and the new funding, General Revenue Fund. From the General Revenue Fund we see an allocation or a commitment to \$235 million. We reduced the budget in 1987-88 by \$25 million, leaving \$210 million from the General Revenue Fund committed to AOSTRA. Cash drawn down to March 31, 1988, \$61.6 million, and added to that is the 1988-89 approved cash budget of \$26.1 million, for \$87.7 million. So that leaves, then, \$122.3 million committed to AOSTRA from the General Revenue Fund and \$5.1 million, as I indicated above, from the trust fund. So it leaves \$127.4 million of money that had been committed from both sources for AOSTRA. That, I think, is a good summary of funding.

The second document you have in front of you gives you the 1988-89 departmental budget: a total allocation of \$36 million for capital, \$3.4 million for operating, for just under \$40 mil-

lion. I'll leave that for members to peruse.

The second page shows you by a percentage basis where the money is allocated. For example, 28.8 percent of the funding goes to in situ oil sands research, 11.8 percent to conventional enhanced oil recovery. Then you can see the different levels there. You have just visited the Underground Test Facility; 9.4 percent of the budget is allocated to that Underground Test Facility. Then a breakdown of the projects and the expenditure on those projects over the years showing the AOSTRA component as well as the industry component of each of those projects.

It's certainly not the intent to go through each of those today, but to bring your attention to the bottom line at the end of that breakdown, total expenditures; a few pages in there. AOSTRA's expenditure to March 31, 1988, \$496.595 million, where industry contributed \$444 million, almost a dollar-for-dollar funding for research. For every dollar the industry put in, AOSTRA has put in a dollar.

Following that is a table of all the projects: when they began, the current status of those projects, and the time that they ended or if they're ongoing — a lengthy list there. In addition, guidelines for AOSTRA and industry field pilot agreements and dissemination of related technology; then some questions that we might anticipate and answers that are written out for them; also a breakdown of the administration of AOSTRA, the officers' functional statements and job descriptions for the people who are involved, as well as an organizational chart; finally, at the end, a press release that was issued on June 7, '88 with respect to the Underground Test Facility.

Mr. Chairman, I wanted to briefly outline the information we're providing to the committee as well as the annual report. I think it's important to note that in the annual report for the first time there's a section dealing with environmental activities. I think that's important. Albertans and Canadians are concerned about their environment, and I think it's important that AOSTRA outline their involvement in addressing some of the environmental activities they have been involved in.

Mr. Chairman, I would ask that Mr. Yurko add to my opening comments, and leave it for the committee then to ask questions as they wish.

MR. CHAIRMAN: Thanks very much, Mr. Minister.

MR. YURKO: Mr. Oldring, I'll just make some general comments. The first comment I wish to make is that during this last year ending on March 31, 1988, we have been extremely fortunate to have, for the first time in the history of AOSTRA, the minister come and sit with the board of directors of AOSTRA and give us an opportunity for insight into the future with respect to the government's views. It was interesting that he did come. His picture now appears in the annual report. He did tell us which way we should go, particularly in relationship to recognizing the need for moving some of our projects towards commercialization, because the intent here was not just to do research but indeed was to commercialize some of these vast resources that we have in the province.

I want to just add to what the minister said in connection with the awesomeness of the resource. The best geological analysis indicates that we have approximately 2.6 trillion barrels of oil in place in our reserves in the province, and the total available recoverable reserves in the Middle East is around 400 billion barrels. Now, the question is: what percentage can you recover from your reserves? The percentage is related to the technology you have developed. In some instances heavy oil

recovery as low as 4 and 5 percent of the oil in place is present today throughout the world; in some instances it's as high as 15 percent; in some instances as high as 20 percent of conventional oil recovery as well as heavy oils. New processes are now being developed; in Romania, for example, they expect to get as high as 80 percent of the oil in place. The question is how? With what new technology? It's underground mining; you go down below to extract the oil from the reservoir rather than trying to get it from the surface.

So there is no end to the development of technology with respect to the recovery of hydrocarbon resources, depending on how much you want to get out of the reserve, depending on what processes you want to use, whether they're environmentally sound or not environmentally sound. A very specific aspect of AOSTRA's mandate is that the processes it develops will be environmentally acceptable. That's one of the reasons we've started to put more emphasis on environmental matters in everything we do from hereon in.

Nevertheless, I just wanted to say one other thing in terms of our international presence, which has blossomed and literally exploded. The world is recognizing AOSTRA as not only a major mechanism for generating new technology with industry on literally a one-to-one basis, but it's recognizing that we have accumulated about a billion dollars' worth of technology and that this technology is useful throughout most of the countries of the world. So our relationship in terms of international matters has increased dramatically. I've signed co-operative memorandums of understanding with about 10 nations in just the last year. So AOSTRA's presence, if you wish, is growing dramatically not only within the province, not only within the nation, but internationally.

What the minister has given you are some details in regards to our performance during the last 12 or 13 years: where we've spent the money, what we've done. We envision that from hereon in more and more of our work will relate to increasing recoveries of existing reserves and moving pilot projects towards commercialization. We have two of our pilot programs that moved to commercialization; we expect others to move to commercialization before very long.

I think that's basically all I want to say in terms of giving you an overall view. I'd like to try to answer any questions. If they're too detailed, I'll just refer you to the reports.

MR. CHAIRMAN: Thanks very much, Mr. Yurko.

The Chair would recognize the Member for Calgary-Forest Lawn.

MR. PASHAK: Thank you very much, Mr. Chairman. I'd like to say good afternoon to the minister and to Mr. Yurko.

I'm pleased to note, first of all, that there is included in this year's annual report some reference to the environment. I'd also note that in the objectives of AOSTRA, the six objectives that I believe Mr. Yurko mentioned in his address to this committee last January, environmental concerns weren't one of them. Perhaps, as a suggestion to the minister and to the chairman of AOSTRA, they might want to consider expanding the mandate of AOSTRA to include in it some reference, at least, to environmental protection.

I say that in conjunction with the visit we made to the Underground Test Facility as part of our preparation for these heritage trust fund hearings, and I want to say that I was particularly impressed by what I saw there. As I understand it — going back to some of the comments Mr. Yurko just made a moment ago with

respect to recovery — from the Syncrude and Suncor projects we get 90 percent, perhaps, of the bitumen that's present in the sand back, to the primary processing at least, and in the Underground Test Facility we were only recovering about 50 percent. But when you look at that in conjunction with the obvious environmental damage that exists at the Suncor and Syncrude sites, perhaps this underground recovery method is the way to go in the future. It certainly looked to me like it was quite efficient, and it also didn't carry with it the environmental problems that other techniques used.

My concern, then, is with the proposed OSLO project, and it apparently will be a project that will combine features of both Suncor and Syncrude. Why is it that we're moving in that direction with respect to the OSLO project and haven't put greater emphasis and given greater attention to using underground recovery mining methods on a more expanded scale?

DR. WEBBER: Mr. Chairman, to the member. I think it's important to look at all possible ways of developing our oil sands resources, and one of the techniques that's been very well developed through the Syncrude and Suncor operations is the mining technique of recovering these resources in those areas where the overburden is not that thick. The underground techniques of withdrawing oil from the oil sands is particularly beneficial in those areas where the costs of removing the overburden would be too onerous to make the projects economic. Certainly in the development of the oil sands by the technology that's used in Syncrude, Suncor, and in the future with OSLO, we have to be concerned about the environmental impact, and those concerns will be taken into account in the development of the OSLO project from what we've learned through the years on Suncor and Syncrude.

AOSTRA, as I mentioned earlier, is going to be involved in working with OSLO in the future in whatever way they can to help address some of these questions, but in looking at the economic impact on this province and at the environmental impact as well, it was our conclusion that there was no doubt that this project should proceed. The reclamation requirements that are imposed upon these current projects are such that we think the environment will be protected relatively well. In the future we hope we are able to improve upon what has been done to this point. The environmental matters that were related to OSLO — and the ERCB as well would be involved in the process — are important to the development of a new oil sands project and certainly will be taken into account in that development.

MR. PASHAK: Thank you.

Now, of course I'm going to be at the discretion of the Chair with respect to this question, but OSLO features rather prominently in the report that's . . . Did Mr. Yurko wish to supplement that?

MR. YURKO: Well, just to add to the minister's reply. Only about 9 percent of the resource is available for surface mining. Now, there is some at intermediate depth. We're experimenting with bore-hole mining, as you've heard of. Then the remainder is at such levels that you just can't remove the overburden, so we get into in situ recovery. Now, there are a number of different processes for in situ recovery, and underground mining is just one of them. The underground mining technique which was developed in the Soviet Union and in Romania gives us the opportunity to get down 700 or 800 or 1,000 feet or even further,

drill channels, and then drain the oil and pump it to the surface. So the recoveries are high because, indeed, you go down to get it rather than try to get it from the surface. But there are other processes of in situ that don't recover 50 percent as underground mining does.

But one must always take in context the nature of the resource when you think of the processes. Now, the OSLO new process is intended to be far more environmentally sound than the existing Clark process. The existing Clark process produces a tailings pond. We haven't determined the process — but we're working on a number — of how to clean up those tailings ponds. The OSLO process, the cold-water process, dredge mining, supposedly effectively overcomes and is a new, environmentally sound process with no tailings ponds like we have in the Clark process. So it's an environmentally sound alternate to the Clark process for surface mining.

MR. PASHAK: Thank you. I appreciate that supplementary answer.

Back to the other question I was just about to raise with the minister. It has to do with OSLO, which features rather prominently in the report and in the minister's remarks not only today but in his appearance before the committee last January. Given that a lot of this research activity has been oriented towards the OSLO project, the research activity will only have some benefit if that project goes ahead. I wonder if the minister would care to comment on the specific financing arrangements that the province is prepared to enter into with respect to OSLO. As I understand it, we're making a number of loan guarantees. Will any of those guarantees . . . Is it the intention that that be financed through the heritage trust fund, or is there going to be any movement of capital out of the heritage trust fund to support the OSLO project? Has he shared in the announcement of that project?

DR. WEBBER: Mr. Chairman, I don't have in front of me today the detailed breakdown of the financing of the OSLO project. It involves a combination of loan guarantees. Some of those loan guarantees are related to what the world price of oil might be in the future. It's a combination of loan guarantees together with dollars that we will be investing directly into the project. The return the governments would get back is related to . . . I've forgotten the term that's used. Anyway, you get a certain percentage of the returns on the project, so it is an investment. The overall objective is to share with the private sector the risks that are associated with the project — and the primary risk is low world oil prices — and then to share the upside benefits in the years ahead when prices rise.

So the arrangements that have been made with the governments and the participants is a sharing of the investments in such a way that it does cover some of the downside risk to the consortium, and in the end the governments would get a return. In fact, at a medium-price scenario — it's the \$15/\$24 scenario, where prices would rise over a period of time, about the year 1996, in that time frame, to about \$24 U.S. — the total revenues from the project are estimated to be approximately \$50 billion plus over the life of the project, and the return to the province of Alberta would be about \$27 billion. So it is an investment whereby the province of Alberta over the life of this project would get back almost half of the cash flow of that entire project. The primary source of that is in the royalties, but those royalties would come primarily in the last number of years, say

the last 10 years of the project; that is, the main portion. As you know, we use the Cold Lake royalty formula, where we've moved from relatively low royalties at the beginning to getting about 30 percent of the revenues minus the costs towards the tail end of the project.

So those are some comments about the investment. It's much more detailed than what I have said. That information is available; we've made it public.

With respect to where the money is going to come from, that has not been decided yet. The bulk of those dollars will not be required until about the 1992 to 1995 time frame, roughly in that area, with the engineering work to be done between now and 1991 but the main construction beginning then and the bulk of the dollars for the construction coming in just before production comes on stream in 1996. So that's when the dollars will primarily be spent. We have the choice of whether those dollars could come from the trust fund or whether they come from the General Revenue Fund. Or we also have the option of cashing in our investments in Syncrude, for example. That's an option we're looking at.

Our investment in Syncrude has paid off very well over the years. We have received close to \$1.5 billion in royalties on Syncrude, and our Alberta Oil Sands Equity investment there has brought us a return of about \$0.5 billion. So we have this investment that's been giving us a good return. We got involved in Syncrude to see the project go ahead, not for governments to be involved in the oil sands business, and so we have the option of cashing in our chips, so to speak, and using those dollars to invest in OSLO or future plants, to get them going. I don't have a dollar figure in front of me right now as to what could be obtained from that. The marketplace has been tested, however, with the recent purchase by PanCanadian of Canadian Occidental's 5 percent share in Syncrude, so that does establish some kind of market bench as to what our interest of 16.67 percent might be worth. But I would say that in today's market situation it could range from anywhere between \$600 million and \$1 billion, which would be a tremendous resource for helping us to invest in future plants.

MR. PASHAK: Final supplementary then, Mr. Chairman. With respect to the government's taking an equity position in heavy oil projects such as Syncrude, I wonder if the minister would care to comment on that in general, in the sense that aside from the return on that equity, does the government perhaps benefit from additional knowledge it might acquire as a result of being a partner in these investments? Would it be the government's intention to also maintain its current level of involvement, which I understand is at about the 10 percent level, in the OSLO project? Would it be the government's intention to maintain that level of equity participation in OSLO as that project comes on stream?

DR. WEBBER: As a 10 percent partner through our Alberta Oil Sands Equity group, there we are a full partner just like the other companies are, and that's separate from our other arrangements of investing and getting the return I was referring to earlier. So as a partner we have the choice, as any one of those other partners, to sell off our interests or even purchase further interests if they're available. At the moment it is our intention to proceed with the 10 percent investment unless someone comes along and offers us a good price for our 10 percent share, and then we would have to consider whether or not we would want to sell off our 10 percent share. As I said earlier, we are not in

this to be in the oil sands business but to try to help these projects proceed and to get a fair return. If we can see that we can get a fair return on our investment so far, then I think it's possible for us to give consideration as to whether we want to remain in there in a 10 percent way. But at the moment we have every intention of proceeding with our 10 percent interest.

MR. CHAIRMAN: Member for Lloydminster.

MR. CHERRY: Thanks, Mr. Chairman. Mr. Minister, I guess what I'm going to speak about for a few moments is that announcement and agreement we had a little over a month ago in Lloydminster. And yes, it was about the sixth or seventh announcement, but this was an agreement this time.

Now, a lot of people around me envy me; I know that. But when I look at the dollars that will be put into the upgrader, I would think it's an investment we will be rewarded for in future. I guess the question I have, Mr. Minister, is an equity position that we have. Would we in the future look at something that we might, say, sell off the equity in the form of shares, do you think? Or do you think we would continue to hang on to our investment there?

I know it's a wonderful investment. It's a wonderful investment for all of Canada, if not North America. It's something like the investment we put into southern Alberta in the irrigation system, how wonderful that's benefited the people.

So I would just ask you that question, if I may.

DR. WEBBER: Mr. Chairman, I certainly agree with the Member for Lloydminster in that this is a very, very significant project, not only for Lloydminster but for the economic impact it will have on Alberta and Saskatchewan and even other parts of Canada where equipment and supplies will be purchased. But the bulk of the impact will be here in Alberta.

[Mr. Hyland in the Chair]

The hon. member and I just recently, in fact last week, were out there to be involved in another sod turning ceremony, where we saw heavy machines removing the topsoil from the site and site preparation for the new project. It was also gratifying to see that the contract for the site preparation was for an Alberta company, based in Marwayne, Alberta. We had said at the time of the announcement, and prior to that, that even though the project would be physically located on the Saskatchewan side, the bulk of the economic benefits were going to be accrued to Alberta in terms of manpower and contracts. Right away we see the benefits, with the contract for the site clearance for an Alberta company based in Marwayne, Alberta.

Our equity investment, as I recall, is about \$300 million, a little over 24 percent of the total equity in the project. And of course it's an all-equity project; there's no debt associated with it. We have thought of the possibility of public participation, if you like, in the project to assess whether or not at some appropriate stage it might be worth while to offer a portion of our investment to the public of Alberta. At the moment it's simply a thought — and I think it's a good thought that the hon. member brought up here today — and one for us to consider in the future as a way of providing some of the funding that's required to go into this project. I mentioned the alternatives before for funding the OSLO project. Well, this is another source of funding, by having public participation in the project. I think that's a good idea, one we should seriously consider and an idea possibly this

committee could consider in the future as well. I think this is a start of our upgrading in the province, a good start.

We are going to continue to look at other upgrading projects in Alberta. AOSTRA has been involved in discussions with the Alberta Chamber of Resources, not only discussions but research into the concept of regional upgraders, whereby smaller companies could be involved in mining operations and provide the feedstock to one possibly centrally located upgrader. This is being given some very serious thought. It involves the private sector and the government studying that concept.

I've probably gone beyond the original question, Mr. Chairman, but that's a habit I'm having difficulty breaking.

MR. CHERRY: Mr. Minister, I guess my supplementary would be: with these energy projects coming on stream and that, does this not allow for our long-term policy of security of supply? When we look at security of supply, we do we have to look into the heavy oil aspect of it. Would you agree with that, sir?

DR. WEBBER: Most definitely, Mr. Chairman, these projects are vital to Canada's future secure sources of energy. As a government we have been working very hard for the last several years to convince other governments in this country that the development of these megaprojects was an important part of Canada's future security of supply. In fact, a year ago at the federal/provincial ministers' conference in Newfoundland, we had unanimous agreement on the part of all the provinces that the federal government should work with the provinces to develop these major projects. I think that went some way toward convincing the federal government that it was important for them to adopt the same philosophy, that the development of these megaprojects is important from that perspective.

With the declining conventional production that is anticipated to come in the future, it's important to replace that production with development from our other sources. Hibernia has been announced this year, the provincial upgrader at Lloydminster, the OSLO project: all important for the future development of our supplies in this country, particularly in that we are moving toward the free trade agreement with the United States whereby we can not only secure a supply for this country but we'll be more able to secure a market for future developments of our oil sands and the heavy oil and other projects. I think the free trade agreement is very important in terms of providing us with access to that market and for creating an environment whereby investment can come to this country and invest in these projects.

So again, yes, I certainly agree with the hon. member. The federal government has come forth at the urging of the provinces to commit dollars to the development of these supplies in the future.

MR. CHERRY: Thank you. I wonder if I could ask you to turn to page 34 in the annual report, on patents. Looking down the list here, I find that it says, "The following patents and patent applications are assigned to AOSTRA." When the patents are registered, do we get a return in revenue from selling these to other countries? Just how does that work? I'm not familiar with what it would do.

MR. YURKO: There are several possibilities, but let me just deal with the top two, the Taciuk process, which is so important to AOSTRA today. What happens is that here is a person who has an idea. We have a program called IGAP, which is a grant

program to develop an idea and patent it. Now, here is a man who patented a process, which is high-temperature retorting. But a patent by itself is not worth very much unless you develop it, unless you invest the millions of dollars oftentimes required to develop it and apply it. Now, what we've done, for example, with the Taciuk Processor here is developed it and built a pilot plant in Calgary, which AOSTRA owns fully, and put through that pilot plant a series of samples from oil sands — shales, for example — and found it as a process very successful and then projected full-size commercial projects.

We have under very serious consideration with several companies now putting a Taciuk Processor as a commercial or demonstration facility in the oil sands, because it is very environmentally sound. It produces clean sand and no tailings pond: just remarkable environmentally. We've also found out that that process is a remarkable process for recovering oil to the extent of 93 percent from shales. We did quite a bit of testing with Australian shales and very successfully. Southern Pacific Petroleum in Australia is now thinking of building a commercial plant or a demonstration plant next year, and we'll be involved in it to a minor degree only with respect to the design.

But what I'm trying to suggest is that here's a case where people get a patent. It doesn't mean very much; it's something on a piece of paper, and somebody has to invest the money to develop it. These patents have been assigned to AOSTRA with the intent that we would, in fact, put the money in to develop these particular processes, as we have with the Taciuk Processor. The Taciuk Processor, by the way, has cost us now about \$12 million in terms of development. So the costs are sometimes very high, but the potential is awesome. If you choose and bring forth the right patents, then the ability to make money subsequently is substantive, though at the same time you might be able to apply it directly to our massive oil sands resource.

Without going through the rest of them, I just wanted to highlight that particular one.

MR. DEPUTY CHAIRMAN: The Member for Wainwright.

MR. FISCHER: Yes, thank you, Mr. Chairman. I am a new member on this committee, and forgive me if I'm a little bit out of line, but I wanted to ask: what kind of policy do we have with AOSTRA regarding the general funding money that goes in as well as their funding that goes in from the heritage fund? It's confusing to me; it seems that whatever we don't put in is picked up the other way. What kind of policy do we have?

DR. WEBBER: First of all, I'll comment, and Mr. Yurko can supplement. But on the handout we issued today there are guidelines for AOSTRA industry field pilot agreements and dissemination of related technology. The first part of that indicates that AOSTRA typically contributes 50 percent of the project costs and the private sector comes in for 50 percent as well. Now, that's a general rule. It's not always followed. It varies from AOSTRA contributing a very small portion of a particular project compared to what the private sector had put in — and all those dollars are listed in the outlines in the different projects here today as well — to the case where AOSTRA may in certain instances fund 100 percent of the costs of a particular project. But generally it's worked on a 50-50 basis, and it shows up on the bottom line, where we see almost a dollar-for-dollar comparison over the last 12, 13 years of private-sector/AOSTRA commitment.

Now, in the past, as the hon. member is aware, government funding from AOSTRA came from the Heritage Savings Trust Fund. In the division of the trust fund — and I've forgotten the name of the division. Maybe I can get some help from the chairman on this. In any case, it has a cap of about 20 percent, if I recall. We were bumping up against that cap in terms of investments. So it was the decision of the government, in order that we can get the trust fund involved in other projects, to move the funding from the trust fund over to the General Revenue Fund.

As I mentioned earlier, we've almost completed that transfer, where we now have only \$5.1 million remaining to be withdrawn from the trust fund as a commitment to AOSTRA. Last year, with a total budget of some \$36 million in terms of investments in projects, \$26 million came from the General Revenue Fund and \$9.9 million from the heritage fund. So we're seeing a shift in our policy from funding AOSTRA from the heritage trust fund over to the General Revenue Fund.

The mandate of AOSTRA has been mentioned in terms of research over the years. We are now looking at and AOSTRA is looking at moving some of the research, the pilot projects, the development-type projects over to more commercial kinds of enterprises so we can commercialize the developments that have occurred over the years.

Maybe Mr. Yurko could add to my comments about funding.

MR. YURKO: Okay. I would like to just indicate to you that AOSTRA is a unique type of organization that has been recognized throughout the world for its uniqueness. If you looked at the information you got in connection with our current budget, you saw almost \$40 million. You also saw that there were full-time equivalents of only 50 people. Now, this is an awfully small organization to handle \$40 million. But the intent of the organization was very specifically to work with industry, to work with existing institutions, to work with existing universities, existing research councils, for example, without building a massive staff to do our own research work. And that's the reason we're in cahoots right now with some 33 oil companies, with eight different universities doing work for us. And when our funding finds something new, that patent is allocated back to AOSTRA. AOSTRA owns the technology in all cases. So we are a small organization with a huge budget but using existing institutions to do massively our work.

Now, I just want to give you very quickly what our overall priorities were over the longer term. First was to achieve the original AOSTRA goal of commercial projects in all Alberta oil sands deposits — in all of them. Second, develop technology to economically double recovery in Alberta heavy oil pools. Thirdly, develop technology to increase recovery by 50 percent by enhanced oil recovery methods in Alberta's conventional oil pools. This is the mandate we were given. Fourth, to establish AOSTRA expertise to act as a consulting institute to ensure that Alberta development is not roadblocked by access to technology or expertise. Five, to operate high-technology field pilots as pathbreakers for industry towards commercialization. Six, where necessary, consider equity positions in commercial development to assist in the application of new technology. And we've got several of these under active consideration right now.

But again, I want to indicate this is a unique organization in terms of size. It's a very small organization with a very large amount of budget in terms of handling it with existing institutions, existing companies, and so forth.

MR. FISCHER: Well, I'm still a little bit confused on one thing. The \$235 million that comes in from the General Revenue Fund: how did we establish a policy for that to go in?

DR. WEBBER: In 1985 a decision was made by the government to make a further commitment at that time to funding AOSTRA to the tune of some \$235 million, with those dollars to be drawn down over a period of years ahead. Was it a five-year time period? I don't remember the exact number of years. So that's how we arrive at that \$235 million. It was a decision in 1985, a commitment of the government to continue funding AOSTRA, but from the General Revenue Fund as opposed to a commitment for further funding from the heritage trust fund.

MR. FISCHER: Well, I guess what I'm getting at now — and we're talking about more money from the heritage trust fund — is why not go ahead with it from the General Revenue Fund?

DR. WEBBER: That's the intent. In this year's budget exercise — and I say the 1989-90 budget year that we're working towards now and will be introduced in this House next spring — we have a commitment from our government to fund \$122 million from the General Revenue Fund in the future, not all for that year, and also \$5.1 million from the trust fund. If our budget ends up being the same as the budget this year, close to some \$40 million, then it's likely we would take the \$5.1 million from the trust fund and then the remainder, approximately \$35 million, coming from the \$122 million that's been committed to AOSTRA.

If there's an increase in the budget for AOSTRA, then there will be further funds from the General Revenue Fund.

MR. DEPUTY CHAIRMAN: Athabasca-Lac La Biche.

MR. PIQUETTE: Yes. Thank you, Mr. Chairman. Going back on the OSLO project — because of the fact that we have, of course, AOSTRA and the provincial government's involvement with that project — and following up on the previous question from the Member for Calgary-Forest Lawn, the area I have some concern about and would like some clarification on is that the governments of Canada and Alberta would contribute jointly up to \$850 million toward up-front costs which, from what I believe, are engineering studies starting now to 1991. I believe this is an equity position by both governments, with about \$425 million from the province of Alberta. The concern I have — and I guess the concerns people have mentioned — is that in 1991, even though we're going to be fronting this \$850 million engineering up-front cost, assuming the project meets specified criteria, only then will major contracts be tendered and construction begin. It appears to me there's still not a definite set decision that this project will actually go ahead, even though both governments are fronting most of the engineering costs without any guarantee specifically that it will go ahead.

Now, would the minister please try and clarify why we would actually be taking most of the gamble up front without industry participation in the up-front cost?

MR. DEPUTY CHAIRMAN: Just a minute. Before the minister tries to answer that, I think we're getting a little bit out of the realm of the trust fund. I listened for the whole question because I thought you'd be more creative at the end and tailor it

towards the subject of trust fund . . . [interjections] Just a sec.

MR. PIQUETTE: I could probably say that as far as a commitment, it will be coming just from the heritage trust fund. He did mention that in a previous answer, so that's the connection. I mean, that money will be coming from our investment, from the heritage trust fund or perhaps from Syncrude, which is also an Alberta heritage trust fund investment. So that's how it connects back to this hearing.

DR. WEBBER: Mr. Chairman, if you allow, I'll proceed to respond to the question. I believe the member is confused about this \$850 million investment. That \$850 million commitment was one of several ways of providing assistance in investment in this project. It was not — and I repeat not — funding for engineering work leading to possible construction in 1991. This \$850 million is primarily going to be invested toward the construction of the project. Certainly there will be engineering costs between now and 1991, and I don't recall what those costs are estimated to be, but they would be shared with all parties before the construction begins.

Yes, in 1991 there will be a decision-making time as to whether or not to proceed with the construction. However, built into the agreement is not just leaving it to the parties to kind of look around and see what world oil prices are and how the economics of the project look and decide individually how they want to proceed. Built into the agreement are some conditions. At that time, if those conditions are fulfilled and met, such as that the economics of the project look like there'll be a 5 percent social rate of return on it and several other factors I don't recall at the moment, then there is an obligation on the part of the parties to proceed, and if they don't, then there will be penalties that will be paid by the consortium in terms of refunding investments that have been made on the part of governments. So we think it's a good agreement from the perspective of having built into it at the decision-making time that if certain conditions are met, the project must proceed; otherwise, there is a return to the governments on investments that have been made.

MR. PIQUETTE: Okay. Well, I'm glad to hear that, because I didn't seem to have that information previously.

DR. WEBBER: That's public information.

MR. PIQUETTE: Now, one of the other aspects here of the economic benefit that the OSLO communiqué comes out with, which is again one of the, I guess, criteria as to whether this project will be moving ahead in 1991 — it indicates that this project should be viable at a revenue of \$10 U.S. per barrel in 1988, ensuring continued economic operation under any realistic foreseeable price. Now, with that, the fact that it's an economically feasible project, why are we providing the bulk of the loan guarantees, et cetera? Why couldn't the consortium acquire the necessary financing to move ahead on this? We've guaranteed over a billion dollars of interest-shielding loan guarantees, from what my calculations show. Why have we chosen that, if the economic viability is there?

MR. DEPUTY CHAIRMAN: Just a minute. I've got to cut in again, because this is getting even further off the subject than the hon. member's first question. I think we're really stretching the tie-in to AOSTRA and to Alberta Energy Company and the third one the minister is responsible for. We're talking about

OSLO, and it's important; there's no question about that. Maybe we should be discussing this in estimates or in other forums, in the Legislature or whatever, but not in trust fund. We're not tying it at all to trust fund: how it's going to affect the trust fund; what's going to happen. We're asking about the project. [interjection] Hon. member, just a minute, just a minute. One at a time or we won't get anywhere. The loan guarantee, whatever, is not tied to the trust fund. We've got to tie our questions to the subjects we're talking about in trust fund.

Athabasca-Lac La Biche.

MR. PIQUETTE: You are saying that the supplementary is not permissible. Is that what you're saying?

MR. DEPUTY CHAIRMAN: I'm saying that if the supplementary is permissible, we've got to tie it a lot closer to trust fund. We can't just out and ask about the project: is this true or is that true, what's in the press. The subjects we talk about have got to be related to the trust fund.

MR. PIQUETTE: Okay. Well, I'm assuming that the loan guarantees, et cetera will be backed by the integrity of the Alberta heritage trust fund. I mean, in most of our projects the Alberta heritage trust fund is involved in terms of backing the projects, either through general revenues or with the Alberta heritage trust fund. I guess my question remains the same: why, if the project is economically feasible, are we compromising perhaps more of our heritage trust fund money to back up the loan portfolios of these companies, the consortium?

MR. DEPUTY CHAIRMAN: So are you then asking the minister if the loan is guaranteed and backed up by the Heritage Savings Trust Fund or the guarantees?

DR. WEBBER: Mr. Chairman, it is not correct to assume that the heritage trust fund money would be going to the OSLO project. Loan guarantees don't require any funding at all. It's just a guarantee that's in place. There are no dollars laid out unless sometime in the future the project flops and the loans can't be paid. But there will be no decision with respect to the \$850 million referred to earlier, as to whether or not that's going to be partially or totally funded from the trust fund.

However, Mr. Chairman, AOSTRA is funded from the trust fund, and AOSTRA is involved with OSLO at the moment in looking at technology development and looking at the expenditure of possibly some \$2 million this year together with OSLO and possibly another \$6.8 million in 1989. So there is a tie-in in terms of AOSTRA being involved with OSLO, although not in the financing, the fiscal package that was put in place in the agreement.

MR. DEPUTY CHAIRMAN: Athabasca-Lac La Biche with a supplementary.

MR. PIQUETTE: Okay. Going now to AOSTRA and the oil sands technology research funds. Back in '86 I raised the question about the technology sales that didn't appear to be matching the investment we're putting into AOSTRA, and back in '86 I was told, well, we're just on the verge of really kicking off technology sales. Well, looking from 1984 to 1988 there's actually been a decrease in technology sales over the years as opposed to an increased amount of technology sales. Now, what is going

wrong here? Are we giving it away, or are we failing to have a good sales staff out there that's actively selling our technology? Or are we using some kind of leeway here that most of our technology sale is not in demand? Why isn't it going a lot better?

MR. YURKO: I think I'd answer your question this way. This last year the board of directors put a high priority on technology sales and established the office and moved the personnel to Calgary so it would be much closer to the companies that to a large degree purchase that technology. During the course of the last year we've had considerable success. First of all, we've had six partners come in with the Underground Test Facility for us with \$1 million each. There's \$6 million that's suddenly come in with one particular project, and they're all interested in obtaining the rights to this technology. At the same time we have worked with companies in terms of an AOSTRA university program. We just had a conference between industry, universities, and AOSTRA in Banff last week: some 280 representatives. We sold five additional memberships at \$60,000 each. We had four before. We've sold five new ones, and we have several applied for which are being considered. To join the AOSTRA/ARC core research program that's done with the Alberta Research Council and get access to their technology requires \$50,000 for a membership. By the way, it's \$60,000 for the university access program; \$50,000 for the core research program with ARC. We have sold four new memberships in the last year to industry who want this technology for their use.

So it's a case of not only waiting for industry to come and buy it from you, it's a case of going out to sell it, and we have taken a much more active role in terms of marketing our technology, as I said, in the last year, with substantive results. We anticipate much better results in the future, not only nationally but internationally as well. We are selling reports now for \$2,000 a report or \$25,000 for a series of reports, depending, and it's surprising how suddenly the market is opening up in terms of the sale of this technology.

But again I say that there wasn't enough priority established in that area, except for the last year we have put a lot more priority in this area.

MR. DEPUTY CHAIRMAN: The Member for Ponoka-Rimbey.

MR. JONSON: Well, Mr. Chairman, I have a question just sort of on looking down the road a bit. I suppose within a year the meaningful role of the Heritage Savings Trust Fund as far as AOSTRA is concerned will disappear in the sense that the \$5.1 million will be used up and the funding of AOSTRA, as I understand it at least, will be coming out of the money that's been committed out of general revenue. And then within another relatively short period of time that'll be gone too.

We have, if you want to call them, programs or at least titles in the report, some 15 in number. If we're looking at a time of further restraint in this area, what are the priority areas for continued AOSTRA involvement?

MR. YURKO: First of all, I would like to indicate that the reason AOSTRA was initially funded by the Heritage Savings Trust Fund was because this area of research in relationship to the oil sands, in heavy oils, in enhanced oil recovery, was given such a high priority that it was felt it was to be funded by the Heritage Savings Trust Fund, for all the funding effectively, in my view, was very high priority funding. You weren't in com-

petition with the rest of the departments, with the rest of what had to be funded through the government. We're now moving from Heritage Savings Trust Fund funding, which is an area of high priority, gradually towards GRF, and after this year we'll be totally under GRF. When we are under GRF, we are going to be in competition for every dollar with every department, with every agency, and so forth. Now, what that then means is that the government has related the priority of AOSTRA's work to, effectively, priorities throughout all of government.

I have to say that from a personal point of view I would much rather the committee come forth and allocate all our money from the Heritage Savings Trust Fund, still recognizing that this whole area of research is a very high priority for Alberta, because here is the biggest hydrocarbon resource literally in the world. I state that, indicating to you my views with respect to where the funding is coming from. But again, if the funding will come from GRF, to a large degree we will be in competition with all agencies, with all departments of government, in getting every dollar, and it will be up to you to recognize and give us the necessary priorities for us to continue this work which we consider to be vital for Alberta's future.

DR. WEBBER: Mr. Chairman, if I could supplement by indicating that in 1986, when world oil prices fell very significantly, this government was faced with the most difficult task of looking to see how we were going to balance our budget over the next number of years. At that time a decision was made to reduce funding to AOSTRA, from whatever source. The total funding was to be reduced very significantly, and the main reason for that was that with the decline in the revenues coming in from oil and gas, highest priority was attributed to the people programs: education, social services, and health. And as hon. members know, there was a slight reduction in those budgets during the one year, and then increases since.

I know the opposition members don't like to hear it, but I think it demonstrates to the public that we are a caring government and that our priorities are in those areas that deal with people concerns. But we can't pay for those programs unless we have economic development, and we can't have economic development unless we have research that is associated with that. So recognizing that, we decided to still continue with a substantial sum of money towards research funding through AOSTRA. Mind you, it was lower than what it was before, a considerable reduction, but it was a matter of establishing priorities. In the future — we're going through that process of budgeting again this year; we don't know what world oil prices are going to be next year — we'll have to assess this as we go on. But as Minister of Energy I think it's very important that AOSTRA have a substantial budget to do the work that's necessary to develop our oil sands, heavy oil, and the other important work they have in enhanced oil recovery and working with the universities and the private sector.

MR. YURKO: As I said, almost all the money we spend in AOSTRA is spent in Alberta for Albertans working and training and so forth, so it is money wisely spent within the Albertan context. Very little of it goes outside the province.

MR. JONSON: A supplementary question, Mr. Chairman. I'd like to thank the minister and the chairman for expanding on my question, but perhaps I could put it another way.

Despite the rather broad terms of reference that AOSTRA has, the name of the game is getting the oil off the little kernels

of sand. I'll try and put the question a different way, and that is: if there are some restraints, some reduction in funding, and for the guidance of this committee, should we have the resources to put further money into AOSTRA? Where in the various programs that you're offering right now do we get the most impact for our bucks in terms of more efficient and effective refinement of the oil sands?

MR. DEPUTY CHAIRMAN: You should [inaudible] the minister or the chairman. He should probably answer that in less than half an hour.

MR. YURKO: You almost have to go project by project. I should indicate to you that the board of AOSTRA has asked each director — we have three directors in each area — to come forth with a report on priorities in their area. We have in every case brought forth the priorities in each particular area, whether it's the in situ area or the surface mining and upgrading or the institutional research and the international aspect. We've brought these priorities forth to the board, and the budget that will be structured in the new year will relate to these priorities.

Let me just give you one example. One of our requirements was to have a commercial process in each deposit. Let's take Canterra, Kearl Lake. For this project the companies have spent \$89 million on research work; AOSTRA has invested around \$43 million. It is close to commercialization. The problem is that the price of oil is such that the companies say, "We can't commercialize this year or next year." So we are then asked to continue and enhance our knowledge for another year or perhaps two years in terms of our involvement on a 50-50 basis or on a 75 or 100 percent basis. We have to make a choice: are we going to shut this place down, which is the closest thing to commercialization in the Athabasca deposit, or are we going to continue it? Therefore, we establish that as a very high priority, because it's the next step of technological generation towards commercialization. So some of these matters are taken into account. In other cases we have to develop a process, for example, that has environmental consequences. We're working on three such processes because of the environmental consequences of oil sands development. So there are many reasons for priorities, and we have tried to establish as much as possible these priorities and the reasons for these priorities in each of the areas that we're involved in in research with respect to AOSTRA.

MR. JONSON: Well, Mr. Chairman, I guess just one other question, then, or sort of an assumption for which I'm asking verification. That is, I'm taking it, then, that the AOSTRA board — let us say that funds are severely restrained in the future — will be able to set priorities among their current activities.

MR. YURKO: We have some commitments by way of agreements that we have to maintain, but we always have new projects too. So if our budget is limited very strongly, we will have probably very few new projects in the current year or the next year.

MR. DEPUTY CHAIRMAN: Lethbridge-West.

MR. GOGO: Thank you, Mr. Chairman. Minister Webber, in 1975, as I recall, you and the deputy chairman, Mr. Hyland, and myself and the then Minister of the Environment, Mr. Yurko I

believe, were part of this Assembly that passed the very thing that created this committee, the Alberta Heritage Savings Trust Fund. Provision was made at that time, and I simply restate it: one of the primary objectives was to put away funds from non-renewable resources. We passed a Bill each year, and it was 30 percent, 15 percent, and today there's no money that goes into the Heritage Savings Trust Fund. Even earnings from the fund go to general revenue. So the Heritage Savings Trust Fund in terms of its objectives has changed dramatically over the years. The reason I mention that, Mr. Minister, is that if we look at the objective of AOSTRA, which started some 14 years ago, which was really to look at extracting oil from oil sands and enhanced recovery, I think it has not changed dramatically over the years. But I believe it should be changed, and I want to put a question to you.

We look, in my view, at AOSTRA in a very narrow light, dealing only with oil. And I submit it should really be dealing with your department, Mr. Minister, and that is energy. In recent years AOSTRA has gained worldwide recognition and acceptance as excellence in terms of refining techniques for enhancing oil recovery and the oil sands. My question to you, Mr. Minister. There are many more components to energy, obviously, than oil. There's coal, there's solar, there's wind, and so on. Would you consider, Mr. Minister, expanding the role of AOSTRA, perhaps even a change of name, whereby they could act — and I was impressed by Mr. Yurko's comment: 50 people handling \$40 million — as a catalyst in terms of energy research and not just be restricted or limited to oil extraction, oil enhancement, and oil recovery out of oil sands?

DR. WEBBER: Mr. Chairman, the hon. member raises a very good point. Certainly I think it's important to evaluate the role of our government agencies and organizations as time goes on. And certainly AOSTRA was created, as the name says, to develop oil sands technology. However, it does have a broader mandate than just oil sands in that they're also involved in enhanced oil recovery in the conventional fields as well.

We do, in our Department of Energy, have a section dealing with engineering and scientific research, which is primarily involved in coal, working together with the Alberta Research Council and with the federal government and the private sector in carrying out research projects as they relate to coal at the very important Devon research centre, which was established a few years ago. They are also involved in working with the private sector, in universities, in the area of wind and solar research.

So at the moment AOSTRA is primarily involved in the oil side of things and, within our department and through the Alberta Research Council, the energy side — coal, solar, and wind — through this government division.

I know the discussions are ongoing. In fact, they were renewed recently between the Alberta Research Council and our department to see whether or not there should be more of a role for the Alberta Research Council in some of the work that was being done in the area of coal. However, you can't just separate them entirely, because there's a lot of liaison going on as well between AOSTRA and our coal division, or the research and scientific division, and also Alberta Research Council. And I think it's important that that communication occur. In fact, on the 27th and 28th of this month we are getting together with AOSTRA and other organizations within our department, energy groups, to look at planning for the future. This has been a point that's been brought up before and one that I think we will

consider there again. But I think it would also be important to throw this out on the table for your committee to give us direction in this as well in the future.

MR. GOGO: The reason I ask it, Mr. Minister, is, you know, I get excited about what AOSTRA's been doing in recent years, and it's my view that it's far better to have some group that acts as a catalyst. The reason I mention energy is that Alberta Research Council, as you know, does telephones and everything else; it is not restricted to one area. And I submit AOSTRA is closely synonymous with energy.

Mr. Yurko, one of the objectives of AOSTRA, in my view, was to offer an opportunity to Alberta students in our institutions so that they didn't have to go on to Houston if they wanted to pursue studies in hydrocarbons and energy studies generally. Now, I'm aware of Dr. Hepler. I'm aware of Dr. Spanos. I'm aware of some former people at U of L who now have professorships with the organization or are full-time researchers. Could you share with the committee, Mr. Yurko, what you do in terms of offering opportunities to students or graduate students from places like the University of Lethbridge or Athabasca U?

[Mr. Oldring in the Chair]

MR. YURKO: Yes, we have a series of programs for assisting students in their training and also for giving students direct involvement working during the summer in our pilot plants. We specifically hire some of the students that are on our fellowships in our pilot plants during the course of the summer.

If I remember the figures correctly, tentatively the student assistantships that we've had exceed 100 in the University of Alberta, about 49 or 50 in the University of Calgary, and in the last year, as you know, Mr. Gogo, we've brought in the University of Lethbridge and also Athabasca University. I think we've managed to get two students in the University of Lethbridge and none yet in Athabasca, but we're working hard on it. But it is an area where I think it is vital that we train some of our younger people, in this area of energy development which is going to be so vital not only now but into the future. So it's an area where we are giving additional priority for students to be involved in our work with professors whereby — well, just to give you an example, we have funded universities to the extent of \$2.7 million in this year's budget. Now, I've tried to get a detailed analysis of the distribution of that money: how much went to professors, and how much went to students. I can't give you the figures offhand, but I was impressed with the amount that was paid to students working with the professors rather than directly to the professors. So it's an area where we are very much involved and hopefully will be more involved in the future.

MR. GOGO: Thank you, Mr. Yurko. I have a final supplementary, Mr. Chairman.

I think there should be clarification with regard to funding of AOSTRA though. The capital projects division was limited to 20 percent, of which AOSTRA is one project. Legislation was passed by this Assembly recently to raise it to 25 percent, so there's certainly scope and room to increase funding, and one shouldn't believe that there is no opportunity for this committee to recommend increased funding to Mr. Yurko's AOSTRA.

My final supplementary is directed to Minister Webber. As the minister knows, we have some 80 percent of Canada's coal reserves in this province. I don't want to talk about gasification,

but I would like to ask the minister, on behalf of my colleague Mr. Bradley of Pincher Creek-Crowsnest, who has spent a great deal of time trying to get coal projects moving for the benefit of his area in southern Alberta — questions were raised last year by Mr. Bradley, Minister Webber, as you recall — could you give an update as to what is happening with regard to not so much coal research but coal activity with your department?

DR. WEBBER: Mr. Chairman, first of all, I'd like to thank the hon. member for making it clear with respect to the 20 percent limit on the capital projects division being raised to 25. However, the decision to raise it to 25 was made after the decision to move AOSTRA funding to the General Revenue Fund, and there is some room for capital project investments from the fund in the future.

Coal has been an industry which has been extremely hard hit since 1982, as has the oil and gas industry, with a decline in prices. In fact, there was a \$27-per-tonne decrease in the price of coking coal from 1982 until last year. Coking coal is now around \$47 a tonne; that's \$27 a tonne less than what it was in 1982. World markets were such that the supply of coal throughout the world was so great that those who were purchasing coal for steel production, primarily coking coal, were able to get good bargains around the world. That had a dramatic impact on our coal industry, considering we have to move it a long way across land to the seaports to move it. The primary markets for our coal are Japan, Korea, some to Taiwan, and then also Brazil, outside of Canada. Most of our coal is used in the province, thermal coal for electrical generation. Then we ship substantial volumes of coal into the Ontario market for similar purposes.

This year we have seen a significant increase in the demand for coal, the numbers as I recall: a 25 percent increase in the demand on Alberta coal, resulting in increased shipment of sales abroad. Along with that was a slight increase in price this year for coking coal, some \$2.50 or so, but for thermal coal a \$6.25 per tonne increase, which was very helpful with the increased volumes for our coal companies, which have been struggling over the last few years. However, there's also been an increase in the value of the Canadian dollar relative to the U.S. dollar, and that offsets some of the gains that were obtained by the higher prices. Hopefully the coal producers are sort of out of the groove, so to speak, where prices have bottomed out and will begin to increase.

I recently met with a delegation from Japan who are looking at contracting with our producers in this province for the next year and negotiating with them. They indicated that the steel industry is such that with new technology there's going to be increased demand for coking coal in the future, particularly lower quality coking coal. This has resulted in some of the coal companies approaching us to look at further development of some of their lower quality coking coal projects.

Mr. Chairman, that is some response to sort of the external market. Within the province we are looking in the future of possibly replacing the use of natural gas for the generation of steam for the in situ oil sands projects with coal as a source. There is some research being done by the Alberta Research Council, our department, and AOSTRA as well, together with the private sector possibly moving in the direction of using coal in the future. It makes sense because natural gas is cheaper to export in terms of transportation costs, and to value-add our products here in the province would be good.

MR. CHAIRMAN: Member for Calgary-Forest Lawn.

MR. PASHAK: Thank you, Mr. Chairman. Well, I'm pleased that the minister in his remarks today and last January mentioned the trade agreement. I assume he's making the assumption that our heritage fund investments in AOSTRA and other projects will be realized through enhanced trade advantages under this agreement. My question to the minister is: given that there aren't any particular impediments to the movement of either crude oil or refined oil or synthetic oil in the United States, just what particular trade barriers does he see being removed by this agreement that would enhance our trade position?

DR. WEBBER: Well, Mr. Chairman, the hon. member is correct in that we are and have been for some time moving in the direction of free trade with respect to energy. There has been the removal of the Alberta border price for natural gas and oil. At the moment there are no major tariffs; they're simply minor tariffs, annoying tariffs as they are, that will be removed, which will be a positive one for the products of oil and gas. However, when upgrading those products within the province — for example, the use of feedstock for the petrochemical industry — the petrochemical industry has had very high tariffs, some 12 to 18 percent tariffs at the border moving those products into the United States. The free trade agreement is going to remove those tariffs to make our petrochemical industry in this province more competitive with the petrochemical industry which has been primarily located in the Gulf. So we see the free trade agreement from the perspective of upgrading our products here and the removal of the existing barriers as very beneficial to this province.

Another important aspect is the access to those markets and assurance of those markets in the future. With the free trade agreement there will not be the implementation of barriers in the future. At the same time, we think it's a good protection. That is, through the dastardly national energy program of a few years ago we saw a two-price system where oil was one price in this country, below world price, and we sold at a higher price into the U.S. markets. Even though there are those who would love to see a national energy program of that sort come back again, as indicated on national television a couple of nights ago by . . . Well, I'm not going to refer to the individual. In any case, Mr. Chairman, one of the benefits of the free trade agreement, as we see it, is that we will be getting world price for our oil in the future. The free marketplace will work in terms of us getting a fair return. That's just on the oil side. There's also the natural gas side as well.

MR. PASHAK: Mr. Chairman, in light of the heritage trust fund expenditures, my question really was restricted to crude oil, refined oil, and synthetic oil. I'm interested in the minister's comments about petrochemicals, but there are as many tariffs on petrochemicals coming into Canada that Canada has levied as there are tariffs in the United States against Canadian petrochemicals: just an aside. I'm pleased, though, that the minister also admitted that there are no impediments to the movement of crude petroleum or refined or synthetic crude into the United States.

In any event, my second question, though — and it's related to the first question — has to do with the fact that here we are as a province, putting all kinds of taxpayers' dollars through the heritage trust fund into refining or upgrading or producing syn-

thetic crudes, synthetic oils. You even mentioned earlier in your remarks the Hibernia project, which Canadian taxpayers are investing a lot of money in, and 68 percent or more of that oil will be going into U.S. markets. This trade agreement that you talk about will prevent us from charging the Americans more for what we're exporting into their market than we sell that oil to Canadians for, which indicates to me that Canadians, through the movement of moneys out of funds like the heritage trust fund or through contributions by governments at different levels — where we're actually subsidizing the price of the production of that crude oil in many instances, and yet American consumers will derive a benefit from subsidies that are provided by Canadians under this trade agreement. So on what basis, then, does the minister look at this agreement encouragingly?

MR. CHAIRMAN: Maybe before the minister does respond, I don't want to with the 15, not quite 20 minutes we have left, get into a free trade discussion. Although I would welcome that opportunity, I don't think this is the forum for it. So perhaps a quick comment, Mr. Minister, or a short response, and then we can come back to the trust fund.

DR. WEBBER: Well, Mr. Chairman, I have tried to follow very carefully the logic of the hon. member, and I would like the opportunity to review *Hansard* about this, because I think there are some flaws in his reasoning. However, what we want is world price, fair market price, for our products from this province, and what I hear the hon. member saying is advocating a two-price system where Albertans would be subsidizing Canadians in the rest of this country. We will be getting market price for our product going into the United States. The free trade agreement supplies us with a market; it will allow investment to occur, exploration and development to occur. I see nothing but positives for the Alberta oil and gas industry in the future as a result of the free trade agreement.

MR. PASHAK: Well, my point was quite simple, actually, which was just that Albertans will wind up subsidizing U.S. consumers under the terms of this agreement.

My third question, and it's to change the subject somewhat. We are putting a lot of heritage trust fund money and other money into major projects like the upgrader. We've talked about the upgrader in Lloydminster earlier today. We've talked about the OSLO project, and I believe I share the view that the long-term future of the province probably lies in the development of the heavy oil deposits in the province. But in the meantime, by putting so much focus on these projects today — and I have a suspicion that much of that focus has to do with the federal election — we're taking attention away from a vital sector of the Alberta economy, which is the conventional sector. If we encourage those projects to an extent that displaces activity on the conventional side, it takes attention away from meeting the needs of smaller producers in the province. They're in a desperate situation, and as they fall into more and more dire straits, it means that we have a cutback in conventional drilling activity and exploration and development. I wonder if the minister has given any intention to using heritage trust fund dollars, or any other dollars for that matter, to balance off the needs of the conventional sector of the energy industry with those essentially larger producers that are involved in the heavy oil projects.

DR. WEBBER: Well, Mr. Chairman, I can't let the hon. member get away with his initial comments about the point being

that we would be subsidizing American consumers by developing our oil and gas reserves in this province. He is entirely wrong. There's no more subsidy occurring than investments occurring developing any other industry where we would be selling into a market where we'd be getting world prices for our products. So this is another one of the phantoms, one of those ghosts that are thrown in the air to confuse the public with respect to the positive benefits of the free trade agreement.

Mr. Chairman, the focus on these projects, as far as this government is concerned, has been ongoing for a number of years. There are the federal/provincial meetings that I referred to some time ago, where we convinced all the provinces in this country that security of supply can be enhanced by the development of these projects. Certainly we knew there was a federal election coming up in the future, but we were hoping to be able to help the federal government develop a policy long before that. It's important that we were able to do that prior to them going into a federal election, and I think it's important that we've got these projects under way.

I've heard over the last few weeks the concern expressed by some that we are focusing too much attention on the heavy oil sands area and not enough on the conventional. That's entirely false. The conventional oil and gas industry has been the lifeblood of our energy industry in this province for many years and will continue so in the future. Certainly our priority has been in the last year to get some projects going on the nonconventional side. On the conventional side I could spend the next 12, 13 minutes that are left, Mr. Chairman, repeating the programs that we have put in place over the last number of years to enhance exploration and development in the conventional oil and gas industry. I think it's sad and I guess a fact of life that opposition members wake up in the mornings hoping for disasters to occur in the world price situation, so as to bring discredit to the government. However, we are looking very closely at what possible systems we might be able to provide as a government to the conventional sector if prices were to soften. Fortunately, in the last few days prices have risen; yesterday it rose by a buck a barrel. If prices continue to rise and stay in the \$15 to \$17, \$18 range for the rest of the year, then we won't have to worry about any further assistance to the conventional oil and gas industry.

MR. CHAIRMAN: The Member for Athabasca-Lac La Biche.

MR. PIQUETTE: Yes. A very short question on the \$1 million investment in Luscar back in 1980-81. Could the minister please explain: what investment did we do back then; has this investment been paid back; or the purpose for that investment to begin with? Has it paid off, or what was involved with that \$1 million? I'm quite surprised . . .

MR. CHAIRMAN: What page are you on?

MR. PIQUETTE: On page 13, the energy investment division.

MR. YURKO: We've invested half a billion dollars and industry has invested half a billion dollars during the course of research and development over 13 years. We have two major commercial projects that have resulted from the pilot research work that's been done. Perhaps the most dramatic one is Shell at Peace River; that started with a pilot plant between AOSTRA and Shell. As I said, one of our primary policies today is to push some of these projects from the pilot plant stage to the

semicommercial or demonstration facility at the earliest opportunity. The next one on our list, hopefully, is to push the Kearn Lake/Canterra one — which has now been taken over by Husky, as you know — into commercialization within two to three years. But as I indicated earlier, we're going to be placing more and more emphasis in a number of areas to push our pilot facilities into a semicommercial or commercial facility in the next few years. As I indicated, thus far only two major projects have gone to commercialization on the basis of this money, but industry thinks in my discussions with them that their money was very well spent in relationship to matching us literally.

MR. PIQUETTE: The Luscar investment was a pilot project: is that what you say?

MR. YURKO: I beg your pardon.

MR. PIQUETTE: The Luscar Ltd. investment was a pilot project. I'm not sure we're talking about the same thing.

MR. YURKO: Oh, I see. You were talking specifically about the Luscar.

MR. PIQUETTE: Yes, the \$1 million investment. What was that all about? Did it have to be paid back or what?

MR. YURKO: Refresh my memory on that one. What page are you on?

MR. PIQUETTE: Page 13, the energy investment division. It says: "The only investment under this Division is debentures of Luscar Ltd. purchased in 1980-81. This investment has assisted Luscar to develop . . ."

AN HON. MEMBER: It's not part of AOSTRA.

MR. PIQUETTE: No; it would be an answer for the minister to reply.

DR. WEBBER: An investment of \$1 million. I'm sorry, Mr. Chairman, the question related to this was what?

MR. PIQUETTE: Why did we invest in Luscar to begin with, and have we sold those debentures, or what have we done with that \$1 million investment that was made in 1981?

DR. WEBBER: I don't remember the history, Mr. Chairman, of that investment. I'd be happy to find that out for the hon. member. I assume it was because it was seen to be a good investment for a good return to the Heritage Savings Trust Fund at that time, a very small amount of money as an investment, I must say, considering the size of the heritage trust fund.

MR. PIQUETTE: So you'd provide additional information? It's just that I haven't read very much about it, and I'd appreciate some more information on it.

DR. WEBBER: I can provide information; I'm sure the hon. member could get information as well on that.

MR. PIQUETTE: Okay. My supplementary is relating again to AOSTRA and the trip to the Underground Test Facility. I brought to Mr. Yurko's attention the Wabasca oil sands deposit,

and I'm wondering: between AOSTRA and the government, where is that fitting in terms of priority, in terms of the development of that oil sands, which I guess is quite economically feasible to develop, from what I've heard?

MR. YURKO: Well, our mandate was to develop a process and a facility for each of the deposits. Wabasca is one of our very high priorities right now. We feel we have to bring forth another project there at the earliest opportunity. We are discussing several possibilities, and we hope to have another project there within the next year or couple of years. We also considered Grosmont in the carbonate layer, as you know, but there is also need for a roadway there, and we are discussing seriously who should build the road and who should finance the road for a pilot facility to be undertaken there. We hope that the department of highways might undertake to construct a road, but there are discussions going on at this time.

MR. PIQUETTE: So my last supplementary is: are you, with AOSTRA, meeting with the department of transportation to get that road access built as soon as possible? I guess the other aspect would be the Conklin road, which also has a number of projects there which would benefit from a road connection for a resource road development. Have you met with the minister of

transportation to make him aware of these types of projects which are very much dependent on proper road connections?

MR. YURKO: Members of our board -- as a matter of fact, the Member of the Legislative Assembly sitting on our board has been assigned specifically the task to look into the possibility of using other government departments to assist AOSTRA or to do it on their own in terms of constructing a road from the Underground Test Facility south. As you know, AOSTRA undertook to construct a road to the Underground Test Facility on its own, but with budget restrictions we're considering that perhaps the involvement of other government departments would be more appropriate in terms of the road to the Wabasca reserves.

MR. CHAIRMAN: Good. Well, thank you very much again, Mr. Minister and Mr. Yurko. It's been a very informative afternoon. You can tell from the time that we've spent here that there's a lot of interest in AOSTRA and some of the exciting energy projects that are under way. But on behalf of the committee, again our thanks for being with us this afternoon.

We stand adjourned until 10 o'clock tomorrow morning.

[The committee adjourned at 3:55 p.m.]

