



# The Yukon Legislative Assembly

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## SPECIAL COMMITTEE ON FOOD PRICES **HEARINGS**

Monday, September 21, 1981

Chairman: Doug Graham, M.L.A.

## **SPECIAL COMMITTEE ON FOOD PRICES**

**CHAIRMAN:** Doug Graham, M.L.A.

**MEMBERS:** Peter Hanson, M.L.A.

Tony Penikett, M.L.A.

Missy Follwell  
Clerk to Committee

Wynne Krangle  
Committee Researcher

**EXPERT WITNESSES:** (Transcribed)

Gary Bauer, Manager, Yukon Electrical Company Limited

Harold Kalder, Regional Administrator, Northern Canada Power Commission

Bob Baxter, Co-ordinator, Energy Conservation Incentive Programme, YTG

**WITNESSES:** (Not Transcribed)

Larry Kwiat, Concerned citizen

Brian Farrell, Concerned citizen

Donna Pendziwol-MacMillan, Manager, Cheechako Co-op

Alan Fry, Concerned citizen

Ellen Scofield, Proprietor, Health Food Store, Whitehorse

**Monday, September 21, 1981**

**Mr. Penkett:** Ladies and gentlemen, the the second round of public hearings in Whitehorse for the Food Prices Committee will come to order.

I am sitting in for Mr. Graham until he returns from a date with CBC.

Last week, as you will have heard, we were visiting communities in rural Yukon, following a previous week of hearings from expert witnesses. This afternoon and this evening, we will be hearing from half a dozen or more witnesses, representing various interests.

To start off this afternoon, we are going to be hearing from Yukon Electrical and the Northern Canada Power Commission, principally to pursue two questions that were raised in hearings last week and the week before. The first question that has arisen is one of energy costs and we want to discuss that in general terms. The second question that we want to discuss is the proposal raised in a number of communities of the use of waste heat from power plants to fuel or operate greenhouses, as has been done in a number of communities.

The first witness this afternoon, is Mr. Gary Bauer, from the Yukon Electrical Company Limited. I would like to welcome you, Mr. Bauer.

We understand, given the short notice that you had, that you will not be able to answer many questions in detail. I hope, in cases where you are not able to provide us with detailed information, that you will be willing to make a commitment to provided us with the information if it is available to you.

**Mr. Bauer:** Yes.

**Mr. Penkett:** Thank you, Mr. Bauer.

Mr. Hanson, would you like to begin on the question of costs?

**Mr. Hanson:** How close are you now coming to having power equalization across Yukon?

**Mr. Bauer:** Across Yukon? Not very close. For example, communities, including Whitehorse, on the interconnected system, are much lower than isolated communities such as Watson Lake, Pelly, Stewart, Beaver Creek and Destruction Bay. The cost of power on a per unit basis in a lot of those communities would be more than double that in Whitehorse.

Just as a little background, the question of rate equalization across Yukon has been brought up several times in the Legislature over the past few years. There are two sides to rate equalization; if you equalize it, someone else's rates have got to come up, so, although it is going to make some people happy, it is going to affect others.

The July 9 Public Utilities Board decision on both ours and NCP's rate increase applications this year, addressed the question of rate equalization and, in their decision, they have stated that they are undertaking a study, which will be completed by next summer, to examine their concerns with rate equalization and, also, the effects that that might have on conservation.

For example, in a community where your costs are 20 cents a kilowatt hour, if you all of a sudden bring them down to eight cents a kilowatt hour, your usage may go up and because of that, it may not result in the most efficient use of your fuel. So that is the question they are going to look at.

They have also asked both NCP and ourselves to undertake studies to look at that question, also, and we are initiating discussions with NCP because of the varying rates between the communities we have and also to look at the whole rate equalization question.

So, there are things around a rate equalization; however, right now, there is a wide discrepancy in Yukon.

**Mr. Hanson:** Could you give us an idea of the rate of increase, percentage-wise, in the last three years in Watson Lake?

**Mr. Bauer:** Just to give you an example, about 60 percent of our costs of operation in Watson Lake are fuel-related; that is just for the price of fuel to run the generators there.

The price of fuel delivered to our plants in Watson Lake, in 1976, was around 10 cents a litre. The delivered price, today, is around 29 cents a litre. That is darn near a threefold increase in fuel prices, which run at 60 percent of your costs. I do not have an exact figure as to how much the rates have gone up the last three years, but they have risen dramatically. I think anyone who has followed the Alberta Federal Energy Pricing Agreement will know where it is going to go over the next few years also, so prices have gone up significantly in any of these diesel generation communities.

**Mr. Hanson:** In how many localities do you now generate diesel power?

**Mr. Bauer:** We have seven communities that are on exclusive diesel generation, and then we have three where we have stand-by diesel generation that is interconnected to the grid.

**Mr. Penkett:** Just for the record, could you give us which communities you do serve?

**Mr. Bauer:** The ones that are served with the diesel are Old Crow, Watson Lake, Swift River, Teslin — I think I am going to end up with eight here instead of seven — Pelly, Stewart, Destruction Bay, which also has a line that runs to Burwash, which is off the same plant, and Beaver Creek; these are the isolated generation plants.

**Mr. Penkett:** In some places you just distribute the power and in other places you generate?

**Mr. Bauer:** No, in those communities we both generate and distribute. The communities in which we purchase power from NCP are Haines Junction, Carmacks and Ross River. In each of those communities we have our own stand-by diesel plants; they are the plants that were there before the interconnection that have been maintained.

**Mr. Hanson:** And in Keno City.

**Mr. Bauer:** And in Keno City — how can I forget? That is off the hydro system, right.

**Mr. Hanson:** What would be the price of fuel for generating in Old Crow?

**Mr. Bauer:** It is around \$1.70 a gallon, so however you want to convert that to litres, it is right in that order.

**Mr. Hanson:** Has your company or any one of the related companies ever done a test on utilizing the waste heat which comes out of the generating plants?

**Mr. Bauer:** We have got some investigations underway right now. If it is related to greenhousing, in particular, no, we have looked at it for community heating. There are installations around with greenhouses, but I am not terrifically familiar with them, so that is something I would like to follow up on and get some more information, if you want it.

**Mr. Penkett:** Perhaps we could pursue that a little bit. You answered that your company, and related companies, have some experience with using waste heat for heating communities. Could you, without getting into a lot of detail, give us some idea of where those are and what experiments are going on?

**Mr. Bauer:** In Hay River, right now, they have done an engineering study and everything is in place. Part of the problem in the delay in that particular one is that there is some talk of an interconnection of the grid. They did not want to spend a bunch of capital to bring waste heat on line and then interconnect it to the Alberta grid.

**Mr. Penkett:** What are they proposing to heat with waste heat? Hay River is a fairly scattered and spread out community.

**Mr. Bauer:** Well, actually, it is not. The downtown core is quite accessible to the plant and that is where it would be, it would be commercial buildings.

We had our people look at an installation for the Watson Lake School, which happens to be right across the road and there are some discussions going on with various departments on that.

Also, we held discussions with the new school in Old Crow, because we are building a new plant there next year and it could be incorporated in with that new plant.

**Mr. Penkett:** What kind of a system are you looking at?

**Mr. Bauer:** That is jacket water, where they run water through the manifold, if you will, and then pipe it out; they use it as a water system.

We do, in Hay River, by the way, have a system that heats our warehouse facilities, some couple of hundred yards away from the main plant. We have just recently, probably within the past month, salvaged a heat exchanger from an old plant in Alberta that went out of production, and it is on-site in Watson Lake now. That particular system will be used for possibly the school, two houses we have in the yard, and also for heating the fuel in the tanks. When it gets down to 40 below, you have a separation problem with waxing and we are looking at installing a heating system for those tanks now.

**Mr. Penikett:** We are primarily interested in the impact of energy costs on food costs. Do you know of, being in the industry, any experiments where waste heat is being used to heat greenhouses? We raise this question, because I think in three communities we went to last week, it was raised as a possible use of waste heat.

**Mr. Bauer:** I know that Calgary Power has it at Wabamung and, as I mentioned earlier, Alberta Gas Trunk Line has experimented with — and I do not know to what extent or how large their facilities are — using waste heat off gas turbines on pipeline projects.

So, there are some around, as I said. I am just not very conversant in them, but we can follow them up, if you want, and try to come up with whatever other information that is around through our company.

**Mr. Penikett:** I am sure we would be interested in whatever information your company might have, Mr. Bauer.

Let me go back to the previous question and try to explain the concern. During the first week of the hearings we were very much trying to get a reading from our witnesses on the causes of the higher food prices in the Territory. The most frequently cited reasons were freight, energy costs, other overhead costs and, in some cases, high mark-up or rip-off, whatever people wanted to call it.

It was interesting that, last week, there were a number of store operators who said that energy was the most significant cost for them; it was more significant than freight. We have previously heard in the first week that freight was obviously more significant. Watson Lake was one of the communities; I think we talked to the store operator there and he told us that his fuel bill, I believe it was, was \$5,600, or was it his electrical bill?

**Mr. Hanson:** He is all electrical.

**Mr. Penikett:** His electric bill was \$5,600 a month, year-round. Now you have to run a very big store before that became a marginal cost; that is obviously a pretty significant factor.

Since the number of these people who had these complaints were customers of yours, could you tell me how sensitive you are to this question and what, if anything, you have had to say to them or if there is any kind of dialogue going on in the companies to addressing this problem, because it obviously affects everybody in the community?

**Mr. Bauer:** First of all, I know there are two parts to a power bill, there is the rates and then the usage. I am not at liberty to talk about a customer's bills without his permission.

I would be surprised, in having looked at those bills, as to which one it is that is \$5,600 a month, because I have never seen one even close to that in Watson Lake.

**Mr. Penikett:** Let us get off particular cases because there were a couple of communities where, as you cited, the rates were quite high because of the diesel generation. I think Dawson City is another place where it is quite high, which is not yours but is an example of diesel generation.

With the Alberta-Ottawa agreement you just talked about, that is going to get worse, not better, and the need to do something about it becomes more urgent. What, if anything, is your company trying to do about it?

**Mr. Bauer:** In Watson Lake, in particular, we have a couple of things that we are looking at. Now, the way the fuel prices

have gone, the economics of doing something are surely there.

First of all, we have been dealing with Yukon Forest Products, Cattermole, down at Watson Lake for over a year and a half now, concerning purchased power from their steam boiler system, which utilizes leased wood in their sawmill. Now, that complex is designed in such a way that they use part of the waste heat to run their kiln, which they need to reduce their shipping weight and make a product available that is easier to sell on the market. So there would be some additional electricity generated that could be used on the system.

Now, they have had quite a bit of trouble in bringing that on line and we are still waiting. We have met with them on at least a dozen occasions; we have had engineers through their plant. Hopefully, that particular project could displace a lot of diesel generation on that system.

The other thing that is on-going is that there are some small hydro sites being looked at in the Watson Lake area. Obviously that is going to take some time to develop, but that is something that, if there are any small sites available that could serve that community, is going to have a very positive impact on their rates in the long run.

**Mr. Penikett:** What kinds of savings are you looking to achieve if any of these things are successful?

**Mr. Bauer:** Probably, as in any power generation thing, and with the cost of money today, you may not save a lot right off the bat. However, as you know with hydro, once you get it on line it is a fixed cost and it stays there. Your operation costs are a small part of operating, so if you build it at \$3,000 a kilowatt and amortize it over 50 years, the rate stays essentially the same, where diesel just continues to go straight up.

I would suggest that the waste wood facility is something similar; there is a high initial capital cost, however, in using the waste wood from that process, the cost of running that facility should not increase anywhere near what diesel will.

**Mr. Penikett:** That is very interesting. Obviously you cannot give specific numbers now because you are talking about projects which are on line.

Let me ask you about the capacity in the present system and let us just use Watson Lake for an example, it is a community that has experienced some growth in recent years.

First of all, let me explain my question and then you will understand the import of it. In the first week, we heard some representation that there was excess capacity in warehousing and retailing operations in Whitehorse which can, and could, produce higher costs for consumers. I would be curious about the capacity of your present operation in Watson Lake and in many other communities, are there communities where you have capacity considerably surplus to your needs, or are there other communities where you are short and that may produce expenses. What kind of impact does that have on the rates and the costs to consumers in those communities?

**Mr. Bauer:** For example, in the smaller communities like Destruction Bay and Beaver Creek, we would have three small generators.

A load may run 250 kilowatts. That is the peak load at high use time in the winter; therefore, it is likely you would have probably a 300 kilowatt, a 200 kilowatt, and, say, 150, in that plant. The 300, obviously, is so you have got some margin in case of growth, cold weather, whatever. The 150 would be run in the summer months, the 200 may be run during the night in the winter. The reasoning is that the better loaded those units are, the higher the efficiency. Your capital costs are a small part of your total operating costs on diesel units. You may end up having two and a half times capacity, as a capacity factor compared to your load, however, because of the efficiency gained in utilizing your fuel by running those units full up during periods, it more than offsets that.

Now, when you get into a larger community like Watson Lake, for example, where you have a load of approximately 2,500 kilowatts at a peak time in the winter, we carry a capacity of 3,700 kilowatt at that particular plant, the largest unit being an 800 kilowatt unit; there are three of those. The theory of that

is that in the event that one of those units breaks down, you can still carry the load. If two of them go at once into your second contingency, then you are cycling and shedding loads to handle it.

In a community like Watson Lake with 3,700 kilowatts installed and 2,500 peak load and growing, you are at a point where you have to expand quite soon. So, there is no excess capacity in any of them, we do not think.

**Mr. Penikett:** Just for the record, could you give us some idea of the variance in the power rates, from the lowest to the highest in Yukon? Once you have done that, perhaps I might ask you, given the Energy Pricing Agreement, what kind of increases and what schedule we might be looking at — not in precise numbers but 50 percent or 100 percent, whatever.

**Mr. Bauer:** What I have got here is out of our filing to the Public Utilities Board this spring and there have been some increases in this because of fuel costs, but it will give you, I think, what you are looking for on a relative basis.

Now, these are for 10 kilowatt of load; that is a fairly small general service load. Assuming that there was 5,000 kilowatt hours in a month used, for example, Whitehorse would be \$309.25; Watson would be \$750.90; Old Crow, \$1,400.70; Keno City, \$343.70; Haines Junction, \$541.60. So, as you can see, the range is quite wide between Old Crow and Whitehorse.

I think that is pretty well representative of the steps you will find all the way up.

**Mr. Penikett:** I think that is a good indication.

**Mr. Bauer:** I think I should probably add that up until December 1, 1980, the YTG, with the income tax rebates, had a subsidy program in effect which decreased all commercial accounts outside of Whitehorse by 15 percent off the top. Now, the federal government has introduced a subsidy program which amounts to bringing the first 1,000 kilowatt hours a month down to Whitehorse levels. Although 1,000 kilowatt hours a month in comparison to some of the stores is fairly small, so it does not have a significant effect; it would have more on the small commercial customers.

**Mr. Hanson:** What are the figures for Keno City, again.

**Mr. Bauer:** Keno? They were \$343.70.

**Mr. Penikett:** I apologize for previously having asked you a two-part question. The second part was: given the new agreement, what kind of scheduled increases can we expect?

**Mr. Bauer:** In most of those plants, you would run, say, 1,400 kilowatt hours per gallon, this is your generation. In Watson Lake, which is a fairly efficient plant because they have larger units which run full time, it may get up to 1,500 and some of the smaller ones it may get down to 1,300.

So, at 1,400 kilowatt hours per gallon, if your price of fuel goes up a \$1.00 a gallon, there is seven or eight cents a kilowatt hour right there.

**Mr. Penikett:** A number of us may know, but just for the record, could you give us, to your knowledge, the schedule of increases under the Agreement?

**Mr. Bauer:** I do not have that here with me.

**Mr. Penikett:** We have that, I am sure.

The reality is that power rates are going to go up as a result of that agreement and, given that we have a number of communities where energy costs, according to the retailers, are their most significant cost factor, that situation is going to get much worse than it now is.

You talked very frankly about the alternatives in Watson Lake. Are there any other discussions or kinds of things that you are looking at to try to reduce the energy costs to people like food retailers who seem to have a lot of coolers and refrigerators and well-lit stores, all of which add up to a big bill?

**Mr. Bauer:** Yes, the usage in most of those stores is extremely high and it is chiefly related to the coolers. As you know, most of them sit there, wide open and the cool air goes up and you have to heat the store on the other side.

In the past year, we have had some of our people from Alberta go through some of the facilities of some of the large users up here, and make information available to them. I know that Bob

Baxter with YTG has been around recently, going through some of the food stores and I see some of them have cut down their lighting level significantly. There are things they can do: using some of their compressor heat and reventing it back into the store. I think The Bay does it here and does it quite successfully, and I know some of them are looking at it now. There are things that can be done.

**Mr. Penikett:** You have had some experience in this, perhaps in other parts of your company. I notice that your parent company, particularly, puts out a lot of conservation-oriented literature to householders. Are you generating that same kind of material for retailers or do you have it available?

**Mr. Bauer:** We are a member of the Canadian Electrical Association and, through that membership, any publication or any information available through any utility in Canada, is available to us. We have advertised it, promoted it, sent out lists of it to both the commercial and residential sectors here.

We ran a fairly extensive campaign of mail-outs for that type of information last fall and, as I recall, of all the commercial customers who had this free information available to them, one took advantage of it in our whole system. We found that the interest was not that high, which is surprising. Maybe this year, with the increases that have been around, it will be higher.

**Mr. Penikett:** Perhaps you need to make the offer again. That is disturbing that they did not respond but I would be curious to know how many consumers responded to your offers, too, but you have mentioned a number of things which might help in cost reducing: the amount of lighting, covering the coolers, or things like that.

I would be interested in knowing if, given the experience in the rest of Canada, retailers in other parts of the country have been taking advantage of these conservation suggestions. That is the first part of the question. Two: whether any of the new federal programs announced provide any incentives or assistance to commercial operators doing those kind of conservation things?

**Mr. Bauer:** I know, for example, that some of the large food chains like Safeway are very active in putting together what they call the In-house Energy Conservation Programme. I do not know if they hired or had the in-house staff who developed energy conservation programmes for their stores. Some of our people down in Alberta consulted with them, but they really had their own programme and carried it. I think there are several others down there who do the same thing.

As far as the federal government making funding available, I am sure that EMR across the street here can answer that better. I know they do with their cost programme and that type of thing. They also have some expertise available, as YTG does now, and I think they are advertising, to go in and do energy audits in commercial facilities to help them cut down their usage.

**Mr. Penikett:** You are a cautious man, Mr. Bauer, who phrases things very carefully. Let me ask you, and allow yourself to speculate for a moment: if you had to guess, what is the maximum amount a food retailer with a heavy energy usage, could save by implementing such energy conservation measures as have been applied by Canada Safeway or as have been recommended by your company elsewhere?

**Mr. Bauer:** I would be speculating, but I can give you an example. This is not a food retailer, but I would think it is probably representative. The University of Alberta hired a fellow by the name of Ron Burns, who went into their whole facility — this was some five years ago — with the aim of seeing what he could cut down. They went into a three-part program, the first being no-cost items such as removing some lights, getting people to change their habits in usage. The second part was a small capital cost programme that had a quick pay-out, and the last being high capital cost items, such as new buildings, when they were building.

As I recall, about three years after he put the programme in place, they had cut down their usage by some 30 percent. I

think there are probably some retail outlets here that might achieve those same levels.

**Mr. Penikett:** Levels of 30 percent?

**Mr. Bauer:** Yes. It depends, some of them may be fairly energy efficient now and cannot save a lot, but there are others, I am sure, that could.

**Mr. Penikett:** Would I be correct in guessing that the style of windows in many retail stores, especially food markets, are not particularly energy-efficient?

**Mr. Bauer:** Yes, you would be. Now you are getting into the heating costs, but, for sure, your maximum heat loss is through windows like that.

**Mr. Penikett:** When we were talking about the \$5,600 figure earlier, it may have been a combination of heating and--?

**Mr. Bauer:** That is quite likely, yes, that sounds more like it.

**Mr. Penikett:** As a total energy bill, it is still pretty high. I did not have any more particular questions on the subject.

**Mr. Bauer:** I appreciate your coming. Let me say, if there is anything else you might have to say to us by way of helpful suggestions or advice, we would appreciate it. You are quite welcome to make any comments, in closing.

We will hold you to your undertaking to try and get some more information on a couple of particulars. I would be interested, if you have any last word on the way in which energy conservation may be able to do something about our high food bills.

**Mr. Bauer:** The one thing that I had tried to check, but on short notice I was not able to get it. Statistics Canada, I know, put together such things as energy costs as a percent of total sales, that type of thing, for across Canada for certain industries.

I am not sure it is available for the food retail outlets. I know it is available for hardware stores and drug stores, so I would think something similar would be available. I think it is a bit out of date because they usually run three years behind actuals.

The one message up here, I guess, is that alternative generation sources for diesel are a ways away and, without some type of subsidies, the diesel and electric costs in most of these communities are going to be fairly substantial in the next few years.

**Mr. Penikett:** Could I, just for the record, say to you, if there was some encouragement for the retailers to try and achieve the energy savings you have talked about, up to a maximum of 30 percent, could one assume that your company would be keen to assist in any way it could?

**Mr. Bauer:** Yes, we have offered that right from day one; that is part of our business. We have a fellow on staff here who is trained in that. We have, on two or three occasions since I have been here, brought in more qualified people from Alberta to meet with retailers. For example, we had an energy conservation program in Alberta schools and we brought it up here and met with the schools. I think that some of the savings they have had, what I have read since, and we are tracking their usage, has been worth their while. I am sure that is transferable, also, to retail outlets.

**Mr. Penikett:** Thank you, Mr. Bauer.

**Mr. Bauer:** Okay.

**Mr. Penikett:** I see Mr. Graham is back with us. Our next witness is not due until 2:30, so, unless Mr. Graham has something to say, we can adjourn.

**Mr. Graham:** I apologize for being late.

I do not really have anything else.

**Mr. Penikett:** Mr. Bauer, you gave us some examples of rates, that is a public document, so, if we wanted to pursue any of that we could get it.

**Mr. Bauer:** Yes, Ron Wilson would have a copy.

**Mr. Penikett:** We will take a break, then, until 2:30.

Thank you.

Recess

**Mr. Chairman:** We will call the session back to order please.

At this time it is my pleasure to welcome Harold Kalder, who is the regional administrator for the Northern Canada Power Commission. Good afternoon, Mr. Kalder, thank you for coming.

We would like to get the relationship between Yukon Electrical and the Northern Canada Power Commission straight, so in your own words, could you describe that relationship, please?

**Mr. Kalder:** In the Whitehorse area, which I assume we are talking about, the Northern Canada Power Commission is primarily the wholesaler or the generator of electricity. Yukon Electrical has a couple of very small hydro plants on the McIntyre Creek, but essentially, they are the distributors of the power. It is sold at a wholesale rate to Yukon Electrical who distribute it to the customers in the Whitehorse area.

**Mr. Chairman:** How about in other areas of the Territory?

**Mr. Kalder:** In Johnson's Crossing, for example, it is generated and sold to the customers by our Commission. At Dawson it is generated and sold by the Power Commission. I believe the town of Mayo is served by NCPC, but I believe Keno City is supplied by Yukon Electrical.

Faro is served by NCPC, but Ross River is distributed by Yukon Electrical from the NCPC wholesale rate.

**Mr. Chairman:** In other areas in the Territory, Yukon Electrical, I understand, are both the generators and the distributors, is that correct?

**Mr. Kalder:** Watson Lake would be the only other place, essentially, and Old Crow.

**Mr. Penikett:** Just for the record, the Northern Canada Power Commission is a federal crown corporation and Yukon Electrical is a private company.

**Mr. Kalder:** let me explain why we have invited you here.

**Mr. Kalder:** I must confess that I did not realize what I was getting into when I came down here, so if I plead a bit of ignorance, I hope you will bear with me because I have only been on this job for a little over three months. I did not really know what to expect so I may have to procrastinate a bit.

**Mr. Penikett:** I wanted to ask you some very general questions. Let me say from the outset that a number of our witnesses have come before us and not had the information we requested at hand. They have given us commitments that they would get it back to us in writing and we would be more than pleased to receive such a commitment so if you wish to beg off that way —

This is really the fourth week that we have been sitting. In the first week of hearings, Mr. Kalder, we heard from expert witnesses in the food industry. Our principal aim is to try to find out the reasons for higher prices in the Territory. In that week, there were four main reasons given: freight costs, energy costs, other overhead costs, high mark-ups. Profiteering was cited as a case. What we want to talk to you today about is the energy cost factor.

When we finished our first week of hearings, I think we tentatively reached the conclusion that probably the most significant cost factor was the freight one; however, we were in a number of small communities last week, not all of them served by your company but that is not really relevant for our purposes here, who cited energy costs as a more significant factor. I wanted to, if we could, ask you some general questions about that. Then I wanted to move on to the possibility of solutions to the problem.

One proposal we heard in a number of communities last week was a suggestion that the waste heat from power plants could be used to heat greenhouses in order to have some locally grown fruit and vegetables during the off-season. That was an idea that we have heard from a number of people; it has been tried and is being used elsewhere, although we have heard no details and have not heard any specifics about positive examples. So, having staked out the ground I want to cover, perhaps I could go back to the beginning and ask you which communi-

ties NCPD serves in the Territory.

**Mr. Kalder:** From memory: the Dawson City area is served by NCPD; Mayo, but not Keno City; Faro; Johnson's Crossing. Those are the ones to which we distribute. We generate and produce it for all of these places except for two small hydro plants owned by Yukon Electrical here in Whitehorse.

**Mr. Penikett:** What percentage of the power do you generate in the Territory? Do you happen to have that number handy?

**Mr. Kalder:** No, but in the area we mentioned, we have about 80 megawatts of power and I think Yukon Electrical has about two or three of that in their little hydro plant. That is sort of the ratio; do not hold me right to those figures but it is in that ratio. We do not generate anything at Watson Lake.

**Mr. Penikett:** The communities where we heard most concern expressed about power rates were those communities that depended on diesel for generation. Could you give us some kind of information about the relative costs of generating diesel, from the experience of your company, because a number of people in Whitehorse observe that even though we have a dam here, the diesel plants seem to be operating a lot of the time. Could you also, at the same time, give us some kind of insight into what we can expect in the years to come, particularly with diesel generated power?

**Mr. Kalder:** Again, I apologize for not being prepared. I thought I was going to be a spectator here. Looking at Whitehorse, what we charge for the wholesale rate, is 3.76 cents per kilowatt hour. Anything over and above what is hydro, we add another 7.75 cents diesel charge, so you can see that that is generally the ratio. In addition to that, there is a diesel energy charge because of the price going up of approximately 1.75 cents. For every cent that the gallon of fuel goes up, it goes up by another small percentage. There is a sliding scale. I have to be careful here. If I qualify it and say that I am going by memory, does it go into the record as hard and fast or am I allowed to back out? I do not have the figures at hand.

**Mr. Penikett:** If you could just give your estimate —

**Mr. Kalder:** I can confirm these with you later on. I apologize for not understanding why I was going to be here.

I believe diesel fuel is somewhere around \$1.47 a gallon now, if I remember correctly, and that is going up all the time.

I was just looking back in the records and in 1968, I think it was 24 cents for a gallon of diesel fuel, so the diesel fuel is a very important factor, and there is a sliding scale that will increase. I suppose you are generally looking at a total of approximately 10 cents a kilowatt hour at the moment for diesel costs.

**Mr. Penikett:** We have heard from various people in the business in the Territory that their total energy costs, not just electricity, amount to between two percent and five percent of their sales dollar. I think it would be our estimate that the people at the high end are the people in communities with diesel generation.

Obviously from what you have told us, they are going to expect to face considerable increases in the years to come. Could I, without being very specific, ask you, and granting that you are new with NCPD, if you have any kind of dialogue going on with your commercial customers, particularly those in the food sector, concerning ways and means to reduce this cost, which is obviously being passed on in the food bills?

**Mr. Kalder:** I am not aware of any, but the major one would be in Whitehorse and they would be dealing with Yukon Electrical because they are the ones who supply the power.

**Mr. Penikett:** Even though you are selling the power to Yukon Electrical.

**Mr. Kalder:** Right. They are the ones who set the price for the customer and deal with the customer.

**Mr. Penikett:** Maybe I could ask you a general question which other Members of the Committee may want to pick up on. You talked about the total amount of power being generated in the Territory. What percentage of that would you venture to guess is produced by diesel, rather than hydro?

**Mr. Kalder:** I can give you some sort of general idea. In

Whitehorse, we have approximately 20 megawatts of hydro, and I think it is about 19 megawatts of diesel, at full capacity. Of course, you run the hydro full out and you run the diesel as much as you have to. I can get those figures for you, as to the actual kilowatt hours of diesel and hydro month by month. Just to give you a rough feel of it, at Dawson City it is all diesel. At Mayo, it is practically all hydro. We will have about nine megawatts of diesel installed at Faro, primarily for the mine to supplement what we are already selling the mine from here.

We have a grid connecting Aishihik with Whitehorse, up to Carmacks, across to Faro and down to Ross River. That is all one system. Mayo is a separate system and Dawson is a separate system.

**Mr. Penikett:** Off the top of your head, would you happen to know the difference between the rates in Mayo and Dawson?

**Mr. Kalder:** No, it is quite significantly lower at Mayo than it is at Dawson. I might also mention that it is the stated policy of NCPD to attempt to work towards equal rates. For that reason, in this last go-around, they were reduced slightly in Dawson and increased in Mayo, if I remember correctly.

**Mr. Penikett:** I think we would appreciate having those figures, if you could provide them.

**Mr. Kalder:** Do you want the rates?

**Mr. Penikett:** The Mayo and Dawson comparison.

**Mr. Kalder:** And you wanted to know the percentage of diesel as compared to hydro in our total area, including Dawson.

**Mr. Chairman:** I understand you cannot give me an exact number of hours that the diesel plant in Whitehorse is running, but is it a fair assumption that the diesels are never totally shut down in the Whitehorse area anymore?

**Mr. Kalder:** I would say that is a fair assumption, yes. As a matter of fact, we are running them just about all we can. We should have been running them more to conserve water for the winter on Aishihik.

**Mr. Chairman:** In the Aishihik system or the Whitehorse system?

**Mr. Kalder:** No, in Whitehorse it is coming out of our ears. It is the Aishihik system where we wish we could have had more diesel to run this summer.

**Mr. Chairman:** What is the major demand at the present time, that you need the 39 or 40 megawatts?

**Mr. Kalder:** Do you mean: how much of a demand is it?

We run our hydro full out, which is about 20 megawatts and then the diesel is on top of that. At nights it could be down very little and in the day time, over peaks, we could be running 10 or 15 megawatts of diesel.

**Mr. Chairman:** Where is the main demand? The mine in Faro?

**Mr. Kalder:** The mine is a significant load, yes. It is all added up.

**Mr. Chairman:** The requirement for electricity in Whitehorse does not decrease that much in the summer any more?

**Mr. Kalder:** I do not know; I would have to look at those figures. I do not know off hand. Do you want that?

**Mr. Chairman:** Yes, I would like them, because it seems to me that the demand —

**Mr. Kalder:** No doubt, there is a decrease in demand in the summer.

**Mr. Chairman:** What compensates for that is the reduction of water you have in Aishihik.

**Mr. Kalder:** Yes, we reduce Aishihik as much as possible in the summer, and we are trying to run diesel as well. We are putting more diesel on now. As a matter of fact, just this week, we had another seven megawatts of load come on at the mine in Faro. We will be running diesel up there steadily for the next four months, hopefully.

Did I miss the question?

**Mr. Chairman:** I want the difference in usage between summer and winter - take December and June or something.

**Mr. Penikett:** You have no surplus capacity, Mr. Kalder?

**Mr. Kalder:** We certainly do not have any surplus hydro capacity.

**Mr. Penikett:** How about diesel capacity?

**Mr. Kalder:** We do not feel too comfortable with the winter coming on. You can lose one or two of those units and our policy is to have enough spares so that our largest unit could be down. This is the spare capacity which we attempt to keep. We wish we had a little more. I do not think there is any great surplus, if that is what you are driving at.

**Mr. Penikett:** Mr. Kalder, your company is the expert in terms of generating power in the Territory, and there are even some unkind people who say all the mistakes that have been made, a great jumber of them have been made by NCPC over the years.

**Mr. Kalder:** That could well be; I was not here, so I will not defend it at all.

**Mr. Penikett:** We are not wanting to dwell on the past; we are only concerned with the present and the future.

I am curious about the problem we are facing with the increasing energy costs, particularly the amount of diesel generated here, and the prospects we face with that continuing to spiral. Last week we were in several rural Yukon communities where consumers expressed concern about the amount of waste heat and waste energy from the plants. One of the proposals for use of that waste heat that we heard in at least three communities, was that the heat be made available to the local community to heat greenhouse operations — I think that was the most frequent suggestion we heard.

We had understood, in the case of Old Crow, that there may have even been some experiments and research done. I would be interested in hearing what you know about this, whether your company has done any investigations on it, if it is something where there is dialogue underway with any community, or if associated companies or other people in the business may be doing this anywhere else that you know about.

**Mr. Kalder:** I am not aware of any dialogue at the moment. As you probably know, our company does use waste heat for heating the water system in Dawson.

**Mr. Penikett:** Let us deal with that particular point. In Dawson it was suggested to us that while that is going on, there is sufficient waste heat coming out of the Dawson system, but some of it, before it goes into the sewer system there, could be run through some kind of greenhouse operation or something like that, and used to good advantage.

Has that been officially raised with you at all?

**Mr. Kalder:** No, it has not been raised with me. I understand that there is a policy in effect in NCPC where waste heat will be made available to anyone who wants it, at half the cost of what the fuel would be. Waste heat is not free because it costs a lot to harness it.

I was in Saskatchewan before coming here, and there has been some work done in this regard in Saskatchewan. As a matter of fact, in Saskatoon there is a greenhouse growing tomatoes using the waste heat from the compressor station. There has been a little bit of work at a thermal plant. A thermal plant is a little more difficult because you throw a lot of heat into the river but you try to have it as cool as possible so you do not really have that much. You may only have a few degrees above the normal temperature of the water, although there is a tremendous amount of energy in it. We do not have those types of thermal plants here anyway, so I will not clutter your mind with that.

Yes, there is energy there within the plants. There is energy in the cooling water and there is energy in the exhaust. I understand there have been some problems in using the exhaust because of added corrosion. I was told that, but I am not that familiar with it. I do not think that has ever been used here. The cooling water itself has been used in Dawson. Incidentally, it has given us a lot of problems at times.

**Mr. Penikett:** For our use, could you suggest someone we might contact to find out about the Saskatoon experiment, or the other one you talked about?

**Mr. Kalder:** It is associated with some people at the university. I am sure if you contacted Saskatchewan Power, they would be able to steer you on. I think it is Professor Green, or something like that.

**Mr. Penikett:** Let me ask you about this NCPC policy that you will make it available, at what? Fifty percent of the cost? Fifty percent of the price of the fuel?

**Mr. Kalder:** When I said that nobody has approached me on that, that is not quite right. Unofficially at a party one night, somebody asked me about this. He wanted to know how to go about approaching us, so I asked our people from Edmonton who told me that was the policy at the moment. I think it is different for governments, but for any entrepreneur, that would be the policy at the present time — charging half the price of what the equivalent costs would have been if they had used diesel fuel.

**Mr. Penikett:** Could you undertake to provide us with a copy of that policy. It may be of interest to quite a few of the communities on your system.

When you say "entrepreneurs", presumably that would include communities groups, if they wished to participate.

**Mr. Kalder:** I think NCPC has probably not been faced with this situation. It is just a present policy as I understand it. Now a community group may be different, but my understanding is that that would mean that there would be no cost or hazard to our operation.

It is certainly true, there is a lot of heat that goes up. About two-thirds of the energy goes into cooling water or up the smoke stack when you generate with diesel.

**Mr. Penikett:** Two-thirds?

**Mr. Kalder:** Something like that. A lot of heat goes up the smoke stack and a lot of heat goes into the cooling water.

**Mr. Penikett:** So we are paying to heat the stars.

**Mr. Kalder:** That is why it is more efficient to heat with fuel oil than to convert it to electricity and heat with it. You lose a lot of the efficiency in the conversion.

**Mr. Penikett:** Let me ask you about the problem of conservation generally. Obviously, with energy prices going the way they are, there is a premium on wise use of energy. Your company is obviously going to have a strong public interest in not seeing it wasted. What measures is NCPC actively involved in, if any, to reduce energy consumption and energy waste in the Territory?

**Mr. Kalder:** Do you mean with the public or with its own operation?

**Mr. Penikett:** If there are answers to both questions, perhaps you could answer them for me.

**Mr. Kalder:** Well, there is certainly emphasis on conservation. The message to the supervisors is to conserve energy. I am not aware of anything that the NCPC is doing for energy conservation in the Territory; although that does not mean that there is not any. I can look into it.

Again, we do not deal directly with most of the customers. We have only a very small percentage of the customers. Yukon Electrical may have some programs.

**Mr. Penikett:** They have quite a bit. Obviously, I happen to know of a great many communities in the Northwest Territories, for example, where you have no intermediary at all, and you have a couple here. We were curious as to what you might be doing.

**Mr. Kalder:** I am not aware of any, but that does not mean anything. I will look into it for you and see what we are doing for energy conservation.

**Mr. Penikett:** Let me give you an example of the kind of concern we have. In Dawson City where we were last week, I believe I am quoting the operator of the retail store accurately by saying that energy costs, from his point of view, were the most significant reason for food prices being as high as they are in his community, more significant than freight. That is the nature of our interest: to explore ways and means in which those costs can be reduced if any. If, upon returning to your office, you discover that there has been some kind of dialogue



or some kind of programs going on, we would be pleased to be informed of them.

**Mr. Kalder:** I will investigate that. I know that in my experience with Saskatchewan Power, they had a lot of publicity and advice on fuel and energy conservation, but they did not go into the customer's house, that I am aware of, and say, "This is what you have to do." It was strictly educational literature, as far as I am aware.

**Mr. Chairman:** I am curious about a couple of things. If we were able, in an area such as Dawson City, to come up with some kind of program — I do not know if it would be government/private industry-type program — of establishing greenhouses in an area such as that, utilizing waste heat, do you think NCPC would be interested in getting involved in a scheme such as that?

**Mr. Kalder:** I do not think we would have any qualms about making it available, as long as it does not jeopardize our operation. We have had a few problems in Dawson in that regard, because we were depending on the cooling water for cooling our units, and if somebody else shut the water off, we were in real trouble. That has to be the first criterion.

I believe there has been some discussion on — and I may be sticking my neck out here — government getting the waste heat at no cost. At the moment, I understand our policy is 50 percent of what the equivalent fuel would be. I suppose if somebody wanted to do some lobbying — maybe nobody has been that interested and that policy may have been there for years, I do not know.

**Mr. Chairman:** If we were to attempt to initiate some kind of a cooperative venture in the area of greenhouses, then NCPC would definitely be willing to talk to us.

**Mr. Kalder:** I am just going on my own personal feelings. I am sure they are willing to talk to anybody if it is done correctly. All I can state is that at the moment that is the policy. Actually, it is keeping us on the jump to keep our head above ground supplying energy. It is has required quite a bit of engineering and study, and to come up with the design for greenhouses, there would have to be additional money allocated for that and staff provided.

**Mr. Hanson:** Was there not money provided for that at one time?

**Mr. Kalder:** I do not know; there could have been. I have no knowledge of that. Was there another question that you would like me to pursue on that?

**Mr. Penikett:** If there was any existing money allocated for studies of that kind —

**Mr. Kalder:** Was that your question?

**Mr. Hanson:** If there was a program on that.

**Mr. Kalder:** Uses of waste heat for greenhouses.

**Mr. Chairman:** I think, Mr. Kalder, those are all the questions that we have to ask you. If you could get that information for us, we would definitely appreciate it.

**Mr. Kalder:** Maybe I had better run through here. You wanted the rates at Dawson and Mayo. You wanted the percentage of diesel and hydro that we are using. You wanted to know the difference in usage in Whitehorse in December and June. We got into this waste heat thing and I have made a few notes on that. What we are doing for energy conservation is another. The fifth one was whether we have had any previous money or studies on waste heat.

**Mr. Penikett:** And a copy of the policy.

**Mr. Chairman:** If the Northern Canada Power Commission has ever done any studies as to uses of waste heat that apply to food production, we would appreciate that information.

**Mr. Kalder:** In the Northwest Territories, there have been waste heat water systems. There is a very comprehensive scheme in Inuvik, as I understand it. I am not familiar with it, but I have heard about it.

**Mr. Chairman:** If there have been any great studies, it would at least give us an indication of costs involved.

**Mr. Kalder:** I am not aware of any, but there could well have been so I will investigate that. Saskatchewan Power has

done some work in this regard.

Just as a point of interest, we had a Rumanian engineer join our staff about three years ago at Saskatchewan Power. They designed a thermal steam plant in Rumania, primarily for growing vegetables which they sold to Sweden. It was not nearly as efficient for generation of power, but they designed it with a higher temperature of waste heat so that they could utilize that for growing vegetables, which was extremely profitable for them. Most utilities design it the other way so they have as little temperature differential as possible and get more efficiency out of the steam plant.

**Mr. Chairman:** That is something that we can look into as well.

**Mr. Kalder:** Yes, although it is a different thing with diesel. With diesel, you do not have the condensing problems of a steam plant. The heat is just going up the chimney and out the radiators, you might say.

**Mr. Chairman:** How difficult is it to harness some of the heat that is going up the exhaust stacks?

**Mr. Kalder:** That I do not know. I was discussing this last week with our chap from Edmonton, Bruce Christie, who is in charge of this, because this fellow had asked me about it. Apparently it has not been done and there are some problems with corrosion. You get a condensation of sulphur and acid deposits, but he was of the opinion that it is possible. To his knowledge, though, it had not been done. It is much more straight forward with waste water. The water in a radiator, you might say, is circulated through a heat exchanger.

As I recall, in the Saskatoon experiment, they also used some of the carbon dioxide from the exhaust which is supposed to be beneficial for the growth of the tomatoes, as well as the heat.

**Mr. Chairman:** We do not have any other questions that we would like to ask you. If we can get that information, we would appreciate it very much.

**Mr. Kalder:** Again, I would like to apologize for my unpreparedness. I did not know what was expected.

**Mr. Chairman:** As long as we get the information that we do require, we do not mind. Thank you very much for coming.

*Recess*

**Mr. Chairman:** We will call the hearings back into session. It is my pleasure to welcome Mr. Bob Baxter who is the Special Programme Branch Director of Economic Development.

**Mr. Baxter:** No, I wish I was. I run the Energy Conservation Incentive Programme for the Special Programmes Branch.

**Mr. Chairman:** We have asked you here today because we have a number of questions that we wish to ask you about energy conservation in the Territory, and various other associated questions. I think I will let Mr. Penikett lead off.

**Mr. Penikett:** I do not know how long you were sitting here, Mr. Baxter, or how much you know about what we are doing, so let me give you some context for the kind of questions we are going to ask you. In the first week of hearings, we were attempting to define some of the reasons for higher costs of food in the Territory. The most frequent cause given was freight. Another one was energy. Based on the Whitehorse hearings, in terms of order of priority, I think freight was more significant; however, we were in a number of small communities last week where — coincidentally, their power comes from diesel generation — the local retailers cited energy as a much more significant reason for the higher costs in their community than freight. What we would like to talk to you about is that energy problem.

This afternoon we heard from Gary Bauer of Yukon Electrical who let us know that that company, and its parent, have a fair number of programs and advice that they can give, or have given in some places, to retailers to reduce their energy costs. He suggested that it was possible to reduce them by as much as 30 percent.

Incidentally, he did take your name in vain at one point in his presentation.

We have just now heard from Mr. Kalder of Northern Canada Power Commission who said there was policy of making the waste heat from their power plants available to people at 50

percent of the cost of the fuel. These were some things which were new to us. Mr. Bauer had mentioned that even though they had leafletted all the commercial customers, only one customer in the Whitehorse area a year ago had taken advantage of their offer for more information about these conservation programs.

Having provided that background, I wonder if I could ask you to generally tell us what you are doing and in what way the work you are doing relates to the problem we are trying to address.

**Mr. Baxter:** The Energy Conservation Incentive Programme which I run is available to any non-residential outfit in the Yukon, which would include supermarket grocery stores. It involves two stages. The first stage: upon contact, I go out to visit the store or the shop and put a report together outlining where they stand right now in relation to energy, and try to identify where their energy losses are, their poor spots, and what they can do to correct them. Within the reports, I try to identify how much it would cost them to make the changes that I recommend and how much they can expect to save from those changes. That is basically the end of the first step: they get the report in their hands.

Then we go one step further. If they decide to implement any of the recommendations, we split the cost of both labour and material, 50/50, with them, up to a \$10,000 contribution on our part. So the first \$20,000 worth of work is done for half price.

So as far as the energy problem in any community, whether it be Whitehorse or any of the others, there is certainly a lot of help available to them.

**Mr. Penikett:** Without betraying any confidences, have you had any retail grocery stores take advantage of the programme?

**Mr. Baxter:** Yes.

**Mr. Chairman:** Have you had any success? Have they gone beyond the first step?

**Mr. Baxter:** The one that I have done, right now, they have got the report in their hands. We have discussed some of the items in it and they agree with most of them. They are going the step further now with trying to see whether they can get the funds available. Under the 50/50 plan, they have to put some money out in order to receive some money so it is not a free plan.

**Mr. Penikett:** In the kind of recommendations you are making to them, are you aware of the work which Mr. Bauer referred to that has been completed, I gather, in the complete Safeway chain in western Canada.

**Mr. Baxter:** I try to keep abreast. Safeway has done a lot of work and Dominion Stores have done a lot of work. In the grocery sector, of course there is other work going on in the industrial and otherwise. I try to keep abreast of it as much as possible.

**Mr. Penikett:** Has the Weston chain of companies done anything as far as you know?

**Mr. Baxter:** I believe that they have — Loblaws.

**Mr. Penikett:** Super Valu, Kelly Douglas.

**Mr. Baxter:** I believe that they have. I know that Super Valu has a man who is in charge of energy conservation for their stores. I believe he is in Vancouver so I imagine he looks after a group of stores.

**Mr. Penikett:** Let me go back a step because I would like to ask you what the possibilities are here. You are obviously aware of the pattern of energy use or waste, or whatever, in the retail sector here. Without singling out any stores, could you offer any observations about the kind of standard of conservation?

**Mr. Baxter:** Typically there is a great deal of room for improvement. If Gary Bauer mentioned 30 percent earlier today, I would say that is a minimum for most businesses, to be able to save with an attractive return on their investment. Of course, you can cut it by 90 percent if you want to spend enough money. But to still maintain an attractive return, I would say that 30 percent would be a minimum for most places.

**Mr. Penikett:** Having said that, could you give us some kind of idea of the kinds of ways in which energy is wasted or that savings could be achieved. State it either way you like.

**Mr. Baxter:** I will give it to you with a slant towards grocery stores, since that is what we are looking at, because it is different for all sorts of different kinds of buildings.

In a grocery store, there are basically two energy uses. There is energy for space heating and there is energy for the electrical end which is lights and refrigeration. Typically, in Canada, grocery stores use about double the average consumption of any other sort of retail store, because of the high level of refrigeration that has to be done. Those are the two areas that I attack in stores.

On the heating end, I look at two things. I look at trying to keep the heat that is in the store in there, which is insulation, and I look at trying to reduce the heat that has to go into heating outside air for ventilation purposes. Most everyone knows about the insulation benefits. To try to reduce the heating required for ventilation air, I attack in the area of control to keep that amount of outside air down to the level required and not any more than that.

It is a fact of life that refrigeration has to be done in a grocery store, but on the other hand, there are some smart ways of doing it. As an example, when you refrigerate the coolers that are within the store, they gather up heat and reject it. It can be rejected to the outside which is a typical way of doing it. A better way of doing it, and the way which new stores are doing it now is rejecting it to the place where the outside air is coming in to ventilate the building. In effect, they just take the heat out of the coolers and move it into the outside air that is coming in. They can achieve great energy savings doing that. That is just a typical way. Basically, when I do a building, I attack it under those two areas.

**Mr. Penikett:** Most of the coolers sit there, wide open, with some product in them. Presumably if they had lids on them, in some cases, they would be more energy efficient. Are there any other ways of improving the efficiency of those kinds of things?

**Mr. Baxter:** There are. To go back to the lids, there is some question there. Of course it would save energy, but on the other hand, if you sell less of your frozen food because people do not want to open the counter, you may be better to increase your sales by leaving the lid off. There is more than just the pragmatic attitude that has to be looked at. As far as other things that can be done, those cases have to be defrosted. A typical way of doing it, until recently, was to use electric defrosters that cycle on by time. In other words, perhaps for ten minutes every hour, they would come on and electrically heat the inside of the case and defrost it. Hot gas defrosting is being done now. In a refrigeration cycle, there is always a hot gas. That can be used to defrost the inside of the cases at no cost, just with a change in the design of the case.

That is being done now and saving quite a bit for two reasons: you do not have to use the electricity to defrost, and on the other hand, after you have heated it up to defrost it, you do not have to cool it back down again.

**Mr. Penikett:** We heard from different retailers around the Territory, that their energy costs as a percentage of their sales dollar range from a low of two percent up to five percent. We heard the five percent figure in connection with places where there is diesel generated power. You have also talked about the \$10,000 limit. That strikes me as not being a very large amount if you are talking about a store the size of Super Valu or a major retailer. How receptive have retailers been to the kind of programs you are offering?

**Mr. Baxter:** They have been quite receptive. I started the program the first of January this year and I have not caught up to the requests that have come in. It has been as good a response as I can handle. We are looking now at getting another person to act as an assistant because I just cannot catch up. When we started advertising, we had a big glut of requests that came in all at once. I got many of those finished and then

requests started to come in one at a time, about the same rate that I would finish them one at a time. I have always been working with this backlog that so far I have not overcome, and I hope it stays that way.

**Mr. Penikett:** I would like to ask you some more questions about the Whitehorse situation later. Let me ask you about some worse cases. We were told, I think it was in Watson Lake, that one store had a monthly energy bill of \$5,600 — I may not be quoting the figure exactly accurately but that is the range it was in — and that was year round operating costs.

That struck us as an enormous energy bill for a 6,000 square foot store. Without dealing with that specific case, but dealing with those situations where they are depending on diesel generated power, does your programme extend beyond the front door of the store? Do you offer anything by way of conservation in terms of power use?

**Mr. Baxter:** Yes it can. I am not sure exactly how you mean it. If you are thinking about heat reclaimed from diesel generators, then we could probably assist on that order, except, more often than not, there are more cost-effective things to do within the store. It is to my interest and it is in the interest of the owner of the store to try to remain as cost effective as possible. There is no sense doing something with a ten year pay-back when there are many things to do with three and four year pay-backs.

**Mr. Penikett:** Given the current interest, you expect to be kept busy for quite some time in that.

**Mr. Baxter:** Yes.

**Mr. Penikett:** You will obviously have some general notions about the economics of what you are offering people. You talked about the potential energy savings. From your experience, in global figures, what are the kinds of reductions in total operating costs that can be achieved?

**Mr. Baxter:** To give you an example, to put it in numbers that may not be too familiar to you, energy consumption is measured as the kilowatt hours per square foot per year. That is the way that most buildings are compared. Comparing by dollar, of course, you have the inequities of different rates. The average for retail stores in Canada is 50 kilowatt hours per square foot per year, rounded off. The average for supermarkets is 100; however, on the other hand, the new supermarkets that are being built are being built on the order of 70 kilowatt hours a square foot per year, so we get back to the 30 percent reduction which was quoted as being just about the way experience shows it.

**Mr. Penikett:** What are the figures for Yukon?

**Mr. Baxter:** I have not got enough of them together. I have been into several buildings. They have gone as high as 130.

**Mr. Chairman:** That is in a food store?

**Mr. Baxter:** I do not recall whether that was a food store or not, but they have gone as high as 130 kilowatt hours per square foot per year. They have gone as low as 11, so you can see that there can be quite a range.

**Mr. Penikett:** When we were talking about the response to your programme, you talked about there being a fairly big demand for it. Given the \$10,000 limit, have you had any kind of sales resistance from the large operators?

**Mr. Baxter:** Not really. Many of the recommendations that are made have pay-back periods that are very short. It does not matter whether they get \$10,000 or not, because to many of them, a \$10,000 contribution might turn a three year pay-back into a two and a half year pay-back. They are both very attractive. The larger operators are more appreciative of the advice than they are of the money.

I have done a couple of fairly large buildings in Whitehorse, as a matter of fact one large building that particularly comes to mind, where I could not spend the \$20,000 for them in cost effective items; however, when they implement the recommendations, they will have about a 50 percent reduction in their heating bill. It is not necessarily an expensive thing to do.

The bigger outfits tend to be cheaper to do. It does not seem that it should be that way but it is. The reason is that big

buildings have ventilation systems and that is the number one source of over-energy use that is typically found in buildings. A small building with only a furnace heating it just relies on air that leaks in through the cracks around the windows and the doors for their ventilation. There is not a whole lot you can do about that.

**Mr. Penikett:** I appreciate what you said about this and if you have any documented material or any kind of interim reporting that you can make available to us, or more information about the program, I am sure we would appreciate it, because this has been very interesting.

Let me go outside the store for a second and talk about something else that we heard. In at least three communities last week, we heard a proposal to have waste heat from power generators used for greenhousing operations. Have you done any work on this? Have you any knowledge of experiments like this elsewhere? Is that, from your point of view, a good use of waste heat?

**Mr. Baxter:** I know that waste heat has been used by NCPC, moreso throughout the NWT than here. For some reason, they have put in many heat reclaim devices in their remote communities in the NWT, with great success. It has been proven to me, and I am sure to them, that waste heat recovery is economically viable and quite attractive. I see no reason why it could not be used in a greenhouse. I have not looked at the problem specifically, but I see no reason, just at a glance, why it would not work.

**Mr. Chairman:** Let us say I was going into business in the Territory utilizing waste heat from NCPC, could I come to you and say, "Is this project that I have outlined here a good idea from an energy point of view, or is it not?"

**Mr. Baxter:** They could come to me, but the \$10,000 would not do much for them.

**Mr. Chairman:** I realize that, but just for the advice.

**Mr. Baxter:** Yes, they could come for advice. There would be a better place to go for advice and that would be to the other YTG programme which is a demonstration programme for energy. It is basically set out to take innovative ideas and provide funding for those sorts of ideas to be implemented. Certainly, a greenhouse that is being heated with waste heat from diesel generators is more under the heading of innovative.

**Mr. Chairman:** What kind of money are we looking at in that program, if I was going to get into the business?

**Mr. Baxter:** I am not sure, under that programme. I know that they fund two-thirds of the cost up to no maximum, but there are other rules so it is not quite as straight forward as that, but that is the guideline.

**Mr. Chairman:** What is the name of that programme?

**Mr. Baxter:** I am not exactly sure what the official name is, but it is a conservation and renewable energy demonstration programme, I believe.

**Mr. Chairman:** From the questions we asked you previously about the food stores, I never did quite get it straight in my own mind how many food stores have contacted you now in the Territory?

**Mr. Baxter:** One.

**Mr. Chairman:** And you have completed the first stage of your program?

**Mr. Baxter:** That is correct.

**Mr. Chairman:** And you have not heard from any others?

**Mr. Baxter:** Not from any others, no. We have not been concentrating on out-of-Whitehorse people until now. It is much easier for me to do my work when the building is being heated in the midst of winter so we are going to concentrate now on out-of-Whitehorse people. That is the fall direction that we want to go. The reason is that we just started the program in January and there are a lot of things to work out without working outside of Whitehorse.

**Mr. Penikett:** Would you encourage enquiries from those high energy cost stores?

**Mr. Baxter:** Yes, the worse they are, the more I like them

because there is more for me to do.

**Mr. Penikett:** Dawson and Watson Lake will be pleased to hear that.

**Mr. Baxter:** I should mention, there was someone from Watson Lake who contacted me this week — and I do not know where they are from — I mentioned to them the one rule that would exclude a building. Any building that is built or occupied after September 1, 1980, is not eligible. I do not know if that includes that store in Watson Lake. That includes almost every building in Yukon.

**Mr. Chairman:** Just any that are built after that period, you cannot look at.

**Mr. Baxter:** I cannot look at. They do not fall under the program for some reason.

**Mr. Chairman:** September 1, 1980?

**Mr. Baxter:** Yes.

**Mr. Chairman:** So any stores operating in the communities we have been to have been operating since September 1, 1980, I think it is fair to say.

I guess then, hearing about the other programme that you are talking about, it is more within their mandate to encourage cooperative programmes between government and private industry, trying to build energy efficient, — in this case, we are looking at food stores.

**Mr. Baxter:** I do not know that they are so concerned with new construction. I think they are more concerned with retrofit, but they do not exclude new construction. They concentrate more on retrofitting existing construction.

**Mr. Chairman:** I wonder if that would include hydroponic greenhouses.

**Mr. Penikett:** I have one thing I would like to bring up. If you have any documentation, Mr. Baxter, such as reports you may have written to your superiors which are not confidential summarizing the programme or there may be some public information, perhaps press releases about it or something that you might be able to make available to us, for the record.

**Mr. Chairman:** I would especially be interested to see something in writing that says you expect that 30 percent would be a minimum energy-saving. Again, in the main, we are dealing with food stores.

**Mr. Baxter:** Yes, I would be surprised if there was a store we could not accomplish that in. I am not saying that there is not any.

**Mr. Penikett:** And you said that you would go as high as 90 percent?

**Mr. Baxter:** You can go as high as 99 percent if you spend enough money but it is just not cost effective.

**Mr. Chairman:** On a cost effective basis, what would you say is the cut-off? Fifty or sixty percent?

**Mr. Baxter:** I think the highest we have done so far is about 70 on a cost effective basis, but that is not something we can promise everybody.

**Mr. Chairman:** Thank you, Mr. Baxter, for coming to speak to us today. If we come up with any other questions, or if you have any other information you wish to make available to us, do not hesitate to give it to Ms Follwell, our Clerk.

**Mr. Baxter:** I will do that. I had put some information together before I came, based on the information that I had read in the previous transcripts about cost comparisons in energy between Whitehorse and Vancouver and Edmonton. I put together a hypothetical store that ran on the averages in Canada as far as energy consumption, both for the electrical end of it, which is the lighting and refrigeration and the heating end of it which, for here, is oil and for Vancouver and Edmonton is gas. I came out with total cost — based on 30,000 square foot store — in Whitehorse at about \$143,000 a year; Vancouver - \$52,000 and Edmonton - \$62,000, so Whitehorse is about 273 percent above Vancouver and 229 percent above Edmonton.

That is for all things being equal which includes the heating consumption. It can be argued that there would be less heating consumption in Vancouver than here, but on the other hand their buildings are hopefully not as well insulated as ours. I

think ours should be insulated to the standard that we would consume the same amount of energy as they would.

**Mr. Chairman:** So what you are saying is that in Edmonton, which is not as cold as Whitehorse, the energy consumption would not differ that much. You are saying that we would both be approximately the same as Vancouver.

**Mr. Baxter:** If the buildings are built according to Hoyle. You should have a building here that is very well insulated and a building there that is not. Where the difference comes in is that you have to pay every month on the capital that you spent at the very beginning to insulate your building to that extent. It is much better to pay for that capital as an annual payment than it is to pay for the energy as an annual payment if that building is insulated to the proper standards. That is where the standards are developed; they are high enough so that you can pay for them and still be saving money over the annual energy payments you would make otherwise.

**Mr. Chairman:** Did you have anything else that you wished to add?

**Mr. Baxter:** No.

**Mr. Chairman:** Would you perhaps write out the information you have just presented and give it to us, we would love to table that.

**Mr. Baxter:** Certainly.

**Mr. Chairman:** Thank you very much; it has been very nice having you.