LEGISLATIVE ASSEMBLY FOR THE AUSTRALIAN CAPITAL TERRITORY

STANDING COMMITTEE ON PLANNING AND ENVIRONMENT

(Reference: renewable energy and efficiency)

Members:

MRS V DUNNE (The Chair)
MR J HARGREAVES (The Deputy Chair)
MRS H CROSS
MS R DUNDAS

TRANSCRIPT OF EVIDENCE

CANBERRA

FRIDAY, 19 SEPTEMBER 2003

Secretary to the committee:
Ms L Atkinson (Ph: 6205 0142)

By authority of the Legislative Assembly for the Australian Capital Territory

Submissions, answers to questions on notice and other documents relevant to this inquiry which have been authorised for publication by the committee may be obtained from the committee office of the Legislative Assembly (Ph: 6205 0127).

The committee met at 9.27 am.

PATRICIA HARRUP and

KEITH LOVEGROVE

were called.

THE CHAIR: Welcome to the hearings of the Planning and Environment Committee into renewable energy and energy efficiency, et cetera. You should understand that these hearings are legal proceedings of the Legislative Assembly protected by parliamentary privilege.

That gives you certain protections but also certain responsibilities. It means that you are protected from certain legal action, such as being sued for defamation for what you say at this public hearing. It also means that you have a responsibility to tell the committee the truth. Giving false or misleading evidence will be treated by the Assembly as a serious matter.

MR HARGREAVES: We can't cut your fingers off, though!

THE CHAIR: And we can't send you to jail! Dr Lovegrove and Ms Harrup, you're here to talk about Cool Communities. Would somebody like to give an opening exposition of what Cool Communities does? Please identify yourself for Hansard.

Ms Harrup: I am Trish Harrup—ACT Cool Communities facilitator. I work out at the Conservation Council South East Region and Canberra. Cool Communities is a national program. It is funded by the Australian Greenhouse Office but implemented through the conservation councils in each of the states and territories.

Our primary focus is household greenhouse gas abatement. We try to achieve abatement through engendering behaviour change in households. We try to implement that through existing community groups. We've had about 18 months experience of delivering the program through community groups. We selected 22 across Australia—three in the ACT region. About 300 households have been directly involved in actively reducing greenhouse gas emissions. We believe our outreach has probably been greater than that.

We have worked with CSIRO's sustainable ecosystems workplace. There are some 300 staff there—with about 100 actively participating in workshops and programs. The Sullivan's Creek Catchment Group, broadly speaking, encompasses most of North Canberra, so we've invited any household in that catchment group to participate. The ANU Food Co-op has a membership of around 600. One hundred of those households have actively participated.

We deliver workshops on home energy efficiency. We've trained about 20 volunteer energy auditors to be able to go into a person's home and conduct an energy audit over a period of about an hour and a half. It is a form of education. They can educate a householder about their home, and behaviours which reduce energy use.

MR HARGREAVES: Is this with existing homes?

Ms Harrup: Yes.

MR HARGREAVES: The big thrust seems to be in two areas, from what I've been able to gather—new developments, greenfields sites and that sort of stuff—and inner city apartment blocks, which have popped up like mushrooms. The big challenge is for existing homes which were built on crappy designs. People who would love to do this listen to people like your good self, but then find that they haven't enough money to do it. Is that the challenge facing you at present?

Ms Harrup: Most of the people we work with are in existing homes. Many of the homes are in North Canberra and are not new. They're unlikely to have been built under the four-star minimum energy requirement. A substantial number are renters. A significant proportion are probably low-income, group households. They are not your primary clients, who you would think would be the ones actively doing this.

MR HARGREAVES: You've concentrated on the corridor between the lake and North Canberra, at this time. Do you have plans to go out to the "inner outer" suburbs?

Ms Harrup: We're presently seeking applications for our next round, so we've targeted community groups in from Tuggeranong through to Gungahlin. It's a wait, to see who applies.

MR HARGREAVES: Are you concentrating on the city side of those areas? In Belconnen, I'd be looking at Aranda, Weetangera, Cook, Page and Scullin, as opposed to the ones further out. They're built on more modern designs, I suppose, in respect of energy efficiency.

Ms Harrup: Yes. One of the things we have learnt from what we've done, and from other trials in Canberra—I'm thinking particularly of the Water and Energy Saving Trial conducted recently, using auditors from the Cool Communities program—is that behaviour is a significant part of energy use and greenhouse emissions.

Even if you have a house of passive solar design, you need the occupants to understand how the house functions and how their behaviour will influence energy use. We need to improve the housing design so they have something to work with, but we must also remember that education is an important part of the package.

MR HARGREAVES: You were talking about renters. It was raised before that renters are, in fact, the powerless lot and that it's the people who own the building who decide whether or not anything's done about proper energy conservation—not the people who live within it. The only way in which greenhouse gas emissions can be reduced in existing homes for renters, particularly, is if they have behavioural change—attitudinal/cultural change—in those houses. Is that right?

Ms Harrup: I think it is significant. There are also low-cost changes—especially weatherproofing—that can be made to a home, that many renters aren't aware of. The payback period is less than 12 months, so the payback period can be less than their lease.

MR HARGREAVES: Is that a capital cost to them?

Ms Harrup: Yes, but it's minor.

MR HARGREAVES: What sort of figure?

THE CHAIR: It's draft excluders, and things like that?

Ms Harrup: Yes—draft excluders around doors and windows—and curtains of some sort.

THE CHAIR: What sorts of strategies are you putting in place? You've got people who go and do energy audits. After an energy audit, someone may say, "I want to do something about my house." What kinds of strategies would you be putting in place?

Ms Harrup: Fortunately, we have had enough funding at present to be able to give them access to some of the products they need—low-flow showerheads and weather-stripping materials. Also, working in synergy with the home energy advice team, we can send out information on structural changes. We also make sure they're aware of any government subsidies such as the subsidy on wall insulation and solar hot water systems. They're very keen, once they're aware of those subsidies.

THE CHAIR: How much is the subsidy on wall insulation?

Ms Harrup: It's a 25 per cent subsidy. There is a 25 per cent discount during autumn and spring—the two off-peak seasons.

THE CHAIR: How does that work? After you get it filled, does the retailer or supplier give you a discount and go to the government—or do you pay full price and go to the government yourself?

Ms Harrup: No. They do a set number of houses—I think about 20, but I'm not sure. If you get onto the list, you get the subsidised price. It's a joint program with Environment ACT. There's only one company which supplies cavity wall insulation in Canberra. It's a subsidised price. You don't have to apply for a rebate.

THE CHAIR: I see—but you have to get on the list?

Ms Harrup: Yes, and there's strong competition.

MS DUNDAS: In respect of the behaviour changes which need to occur, do you see the level of engagement sticking? Do you see people's attitudes and behaviour changing in the long term? The program has been running for only 18 months, so it's hard to gauge how it will go, into the future. Nevertheless, do you believe it is making a difference. Can you say that the Cool Communities project is leading to a reduction in greenhouse gases from the houses involved, and that it will continue?

Ms Harrup: One of the great things about this program is that it's been treated like a pilot program, so there has been a good deal of measurement and analysis done. We've

surveyed every actively participating household before they've begun, and then at the end—or during their involvement. That data has then been analysed.

We've been able to establish what changes have taken place. I'd like to provide you with a copy of one of the measurement reports. They're almost at the stage of being publicly available. That shows that many of the present changes are minor, technical changes. We can expect that to be ongoing. Hence, a low-flow showerhead put in place is likely to continue to create abatement.

Behaviour change is a new area in which we're working. Very few international behaviour change programs have focused on greenhouse, in trying to make it measurable. That's a really uncertain area—I don't think we will know for a few years. We will do ongoing billing data analysis. With this, you need several years of data before you start to see whether, over a 12-month period, a household has reduced its energy use.

MS DUNDAS: You said that many of the households you've been working with consist of people who are renting, and people living in group houses, and that you've targeted them with small changes and behavioural changes. Does the program extend to when the people in those group houses break up and they perhaps buy new houses in new establishments? Would the assistance given, as part of the behavioural change, which made them pick up and work on their present houses, transfer to the new houses?

Ms Harrup: When we did the audit training, we trained 20 auditors quite intensively over a full weekend, and there were two subsequent evenings over two weeks. Three-quarters of those were young people, whom I expect will either buy or build a home in the next 10 years. We were quite certain, by the end of it, that they would be building or buying passive solar design homes. Although at present their activities may not reflect any substantial abatement of greenhouse gas emissions, I think they will in the future.

Anyone who comes to our workshops will walk away with a basic understanding of the design of a home for the Canberra climate which minimises its need for energy input for heating. I don't think we will lose that over the years. I think that, once a renter goes into owning a home, they'll know what to look for—or when building. I think many of the principles transfer from being a renter to an owner.

MS DUNDAS: Are the 20 people you trained to do assessments of houses accessible to people who haven't participated in the Cool Communities project? Has an outreach team been established?

Ms Harrup: I know that one of the individuals is looking to turn it into a profession, because no-one offers professional audits in the Canberra region—that I'm aware of. I think it's difficult to make it pay for itself. There are very few full-time professional home energy auditors in Australia. I believe there's one in the Perth area—however, they are subsidised. A householder contributes to the cost, and the government also contributes. At the moment, I think it needs to be offered through a program. Hopefully, we will train more auditors in our next round, and continue to make that available.

THE CHAIR: The way it works at present is that the average person in Tuggeranong or Belconnen can't access the Cool Communities information?

Ms Harrup: Unless they happen to be a member of the food co-op.

Dr Lovegrove: I'm Keith Lovegrove. I'm on the executive of the conservation council. I'm there as a councillor for ANZSES—the ANZ Solar Energy Society. The closest thing is the HEAT advisory service. That is an ACT government thing, so anyone can ring them up, can't they?

THE CHAIR: How does the home energy advisory team fit in with this, to provide a service?

Dr Lovegrove: Cool Communities is a federal government AGO program. It has to meet the guidelines the AGO has set up—which are all about communities applying to be counted into the program—whereas HEAT is the ACT government's home energy advisory team. Anyone is able to access that, but the advice is much more limited in its scope than what you do with your communities.

Ms Harrup: Currently, most of the information given by the home energy advice team would focus on building structure. The format is that someone would bring in their house plans and discuss them. So they're most likely to attract home owners—and often at the renovation stage, which is important. Nevertheless, they often refer people to Cool Communities, if they know they're more likely to benefit from our style of going into the home and discussing the minor changes and the behavioural changes.

I believe there are a great deal of synergies between the two. Unfortunately, Cool Communities is limited in scope. Because we work only through set community groups, there are only a few—probably 300—households we can target through any funding period.

Dr Lovegrove: It's pretty obvious that there would be scope at the ACT level, in trying to provide the audit service to everybody who wants to use it. The current federal government program doesn't allow for that.

THE CHAIR: With your audit, if someone goes into a house and does an audit, do they give people a sort of smorgasbord of approaches they could take, such as changing the light bulbs or sealing around the doors and windows?

Ms Harrup: Yes, we try to prioritise. We have tried to focus on heating. Because about 60 per cent of household energy use is for heating and cooling, obviously the greater savings can be made there. Also, it needs to be tailored for the individual circumstances—so, if they are renters, perhaps targeting the minor things around heating and then hot water. We leave them with a list of recommendations, a bit of information about how much it's likely to cost and what the benefits are. But we have tried to skew it towards the heating end.

THE CHAIR: This is one of the premier questions we have, and one of our principal concerns: can you engage the landlords in this?

Ms Harrup: That's something we haven't yet tried. I know that one of the Cool Communities programs in Tasmania worked with the student housing area in Hobart, and ran workshops for the landlords. They're the ones who can influence big things like

ceiling insulation, wall insulation and maybe even curtains—the important changes that need to happen. They've had a measure of success. We haven't tried it here in Canberra.

THE CHAIR: It seems to be especially the case with student accommodation—in all those cold boxes in Turner and O'Connor!

Ms Harrup: Yes, that's right.

MR HARGREAVES: You've got to give them a tough start to life, for heaven's sake—not molly-coddle them!

Dr Lovegrove: One of the things in that area that we've given a bit of thought to is this: there is, at present, a rule in place that, if you have an energy rating for your house, you're supposed to reveal it when you rent the house. However, that's almost impossible to enforce and apparently it's being pretty much ignored by the rental industry.

We are suggesting that it ought to be made a condition of renting a house that you get an energy rating and you must then publicise it in the ad, the same as you do when you sell a house. It's not a great expense and would send a message to landlords. The implication is that your rental rate, or the demand for your property, is going to be affected by how energy efficient it is.

MR HARGREAVES: Do you think that, globally, people who are renting a house could care less about the energy rating on the place? You might, because you hug trees!

Ms Harrup: A group house in the inner north could pay between $1,000 and $2,000 on a winter heating bill. I think low-income students need to know that up front, so they can prepare for it.

MR HARGREAVES: The issue I'm interested in attacking is that, firstly, people don't know that. They don't know that the EER rating on the house has a direct correlation with the amount of expenditure they're going to have for power consumption, et cetera; and, secondly, people will be more likely to rent readily. Speaking personally, renters will take what's presently available, because availability is scarce.

Dr Lovegrove: Yes, that's right.

MR HARGREAVES: In times of glut, people will buy or rent a prettier place, rather than an uglier one, when they go down a particular street. As a renter, Ms Dundas has a different perspective, but I rent out a place and the questions asked don't centre around those sorts of things!

Dr Lovegrove: I think that, if we could get the energy rating, so it would be in people's faces all the time, it would help. There is the sale of premises act. Everyone in this city now knows what an energy rating is, whereas they did not before. That is filtering through to people's purchasing decisions.

MR HARGREAVES: Do you think so?

Dr Lovegrove: They're thinking about it.

MR HARGREAVES: I'm not convinced about that.

Dr Lovegrove: That's not to say we can't go a lot further, but it has certainly helped.

MR HARGREAVES: I'm not suggesting for a second that it ought not be the case; however, I see little evidence of that. We were talking about red cars and black cars before, on this particular issue. People just buy a house because they like it. I don't see evidence that people have moved and that that is one of the major considerations when buying established houses. Some of the real estate agents I have spoken to have confirmed that.

Dr Lovegrove: Yes, but it's at least made it onto the radar screen now. Previously, it wasn't—and you've got to start somewhere.

MR HARGREAVES: Yes, agreed—provided it is a system in which the public has confidence. I'm not so sure that exists, at the moment.

Dr Lovegrove: That's an interesting point. Do you think there are people who don't trust the rating?

MR HARGREAVES: Yes. There's very real evidence out there that people don't trust the rating.

MS DUNDAS: We've had evidence here that you can have a house with a four or five-star energy efficiency rating; that it's still expensive to heat and that it's not as efficient as people expect it to be. It may have good ventilation, or good sealing around the windows, but they haven't necessarily looked at any of the things they could value-add to make the house efficient.

MR HARGREAVES: To give you a more complete picture, there's also the point that, in some of the criteria applied to give a rating, some of the details are in fact temporary.

Dr Lovegrove: Like curtains, do you mean?

MR HARGREAVES: Yes, curtains are a good example—and trees is another. They exist as long as people want them to be there. Yet, there is an assumption in the rating that this will be the case, and it is not necessarily the case. The rating for a full set of curtains is completely different from that for a set of vertical blinds. You can take the things down and put them up, according to the amount you want for the sale of the house. So I think there is a level of distrust out there.

Dr Lovegrove: There are two points on the level of distrust. I must admit I hadn't realised that it was a significant thing—it would be interesting to try to measure that. There are a few things we can do. There is the bit about people getting a shock when they discover that a four or five-star house isn't that energy efficient.

There is a very good argument. The software, as it currently stands, goes on giving you scores—way beyond what you have to get to achieve five stars. If we made the scale go up to 10 stars, you'd then realise you had five stars out of 10, rather than five out of five.

People have this idea that five is very good. It's just okay—it's very ordinary. That would be one thing in respect of perception.

Trust is important. Anyone can buy the software. To get an assessment, you have to go to an accredited assessor who's been trained by the team and signed off—that they know how to do it. Because this is linked to the real estate market and so on, there is a kind of incentive there for people to fudge the edges.

I've heard we're not doing the auditing of assessments that we could. It's very important, with a scheme like this, that people trust the official assessment. If we don't have a scheme of regularly randomly checking assessments that these accredited assessors have given, then that's where it can slowly lose its trust after a while.

MR HARGREAVES: That's an excellent point. I think that's the first time we've heard that. But how about the software itself?

Dr Lovegrove: Do I trust it?

MR HARGREAVES: Yes.

Dr Lovegrove: Yes. There is only one place where it falls down. If you've got a super good, 10-star passive solar house, the software is not sophisticated to cope with weird things like Trombe walls and so on. But that doesn't matter. In respect of physically dealing with your average house, it's good.

About the only thing you could say is—this was your point, John—that you can take things down. For that matter, you could steal all the pink batts out of the ceiling and take them with you when you moved out. You could be buying a house and someone has given you a rating—and it says it's got well-sealed curtains. You could walk into a room and find there are no curtains at all. People are pretty aware of looking out for things like that, I would reckon.

THE CHAIR: I've never seen a rating. If you get a rating done, do you get a description of what's in the house?

Dr Lovegrove: You should get a printed report.

MR HARGREAVES: It doesn't say that there are full curtains in the place—it says that there can be?

Dr Lovegrove: No. They usually rate the house as it is.

Ms Harrup: It should describe the house and make recommendations.

MR HARGREAVES: I got one on the house that I bought, because you had to. I had to pay for it as well. On the one that I sold to get into the other one, the report I got doesn't say, "Yes, these are fully-lined curtains." It just says, "Yes, curtains"—and there is a tick. Then, of course, I could take them down. But you would agree that having a set of curtains like these, versus a nice set of fully-lined pure woollen ones, can make a heck of a big difference when it comes to energy conservation.

I don't think there's necessarily great trust in the software, either. Essentially yes, but it seems to be one of those sacred cows that somebody somewhere, who's got this magic mind, has invented. If there's something you want to change in it—or challenge in it—it's a mysterious monster somewhere that nobody can access to say, "Hang on a second—I don't like that."

Dr Lovegrove: In your rating?

MR HARGREAVES: In the software itself—the people who developed it.

Dr Lovegrove: For what it's worth, you can go to the SEAV website, download the software for free and have a go yourself. It's very user-friendly. I must admit, I'm not super familiar with the printed report you get. Maybe there's an argument for analysing the printed report and changing the rules, so that what's printed carries more information about what went in.

You may have entered a particular curtain type into the software—and there's a detailed list of curtain types you can choose from. If what you've put in isn't reflected in the printed report, then you've got no way of checking that they've done it properly. I don't know the printed report well enough. Maybe Joanne can deal with that one. It would be a good point. If something is missing there, surely it would be an easy matter to have it changed.

MR HARGREAVES: Therein lies the issue. You've got this rather large mysterious organisation—the university or whoever it is—which develops the software. When a person with a certain amount of knowledge wishes to challenge a premise behind part of that software, it seems almost impossible for people to get in there and do it.

THE CHAIR: You might take that up with the greenhouse office.

Dr Lovegrove: Actually, it is pretty transparent for technical people who want to follow it up. I've got a copy of the software. The First Rate software is based on NatHERS which is, I believe, the true simulation software. Anyone can get a copy of that—and I think the physical equations it works on are available too. It's not as if it's so proprietary that you can't get behind the physics, but you have to be pretty much a technical expert to do the work.

MR HARGREAVES: Say that, in the discussions you have with people about existing homes, you come across a practice somebody's doing which is rather brilliant, and new. If you want to have that included in the criteria for the NatHERS rating, good luck! That's the issue I see as a problem.

Dr Lovegrove: That's true. A number of architects in the passive solar area are not happy with that because of novel features like Trombe walls and things like that—although you can kind of trick the software.

THE CHAIR: People have been doing that for years. It's not as though they are new to Canberra.

Dr Lovegrove: Let's say "novel" for the percentage of Canberra houses with them—they are certainly not new. With the clever passive solar features that give you an 11-star house, the software isn't set up to naturally do that. You can kind of trick it in funny kinds of ways by inventing pseudo windows, but it's not doing that. There's an argument that, if we want people to build to that level, then our ratings software should be recognising those things.

MR HARGREAVES: An example came before the committee. This guy's got an Enviro insulator that goes on the outside water heater of an existing home. You have your philosophy for greenfields. That reduces greenhouse gases and electricity consumption.

Ms Harrup: The appliance is not part of the software.

MR HARGREAVES: Yes, but he's got the CSIRO tick—and all that sort of thing. Because he's done that, there is now the possibility of a reduction in greenhouse gas emissions and energy use in respect of the data he uses to create this doodad. But, if you want to get credit for that in your EER, you can't get it in there. If, for example, there is another way in which you can reduce it significantly like this does, there's no way you can get any credit for it.

Dr Lovegrove: There's quite a philosophical discussion there. At present, the rating deals only with the fabric of your house. It doesn't deal with appliances; it doesn't talk about how you heat the house and how you obtain hot water.

I'm of the view that it's good to have a separate number that quantifies how good your house is as an architectural thing. Nevertheless, I would be all for having a second bit, where you rated your appliance or something—but not to mix it up. I don't think that putting a jacket on your hot water heater should be seen as an alternative to insulating your walls. You should look at your house and try to make it as good as you can.

MR HARGREAVES: Shouldn't it be a case of both—not either/or, though?

Dr Lovegrove: Exactly.

MR HARGREAVES: There is a difference between having an internal hot water system and a solar-driven one. The third is a solar-driven one. You've got an internal hot water system run on gas and an external one run on electricity. They ought to have different indicators of efficiency for the person buying the place.

Dr Lovegrove: Yes. There's definitely room for somehow measuring that, and rating that sort of stuff.

THE CHAIR: But not, essentially, as a measurement of the efficiency of the building fabric? That is an add-on.

Dr Lovegrove: Yes. When I buy a house, I want to know how good that house is architecturally. I know I can replace the hot water system, but I'm stuck with the house. That's my personal view on it. I'd love to have two numbers—a house architectural star rating, plus a big combined rating, or something like that.

MR HARGREAVES: Going back to the cool thing, if I read this correctly—apart from the attitudinal change and that—it is going into existing buildings to discover ways in which people can live happily, reduce the amount of greenhouse gas emissions and energy consumption and still have a comfortable little house. You'll be looking around for things people can do at fairly low cost to achieve that.

Linked to that at present is the energy efficiency rating we get. Suppose I'm a landlord—or I'm a renter, or anybody, for that matter—and I want to jack that up from a two to a 2½ star. Regarding the showerhead and all the things that can be retrofitted to a house, should they, or should they not, be able to be taken into account, to jack up the EER rating?

Ms Harrup: There are also relatively low-cost options for increasing the star rating of a house which are insignificant, compared with the sale price of a house. The average zero-star house in Canberra would cost about $3,000 to bring it up to two star. That is fairly insignificant when you're selling a house.

THE CHAIR: What would you do?

Ms Harrup: Ceiling and wall insulation, and external blinds on the east and west glazing is enough. I feel I have to say this. I work on education, but we have found that people are very interested in the energy efficiency ratings scheme in Canberra. As far as addressing the bulk of the housing market is concerned—that is what we're trying to do—it's an improvement on what we've had before, but there is definitely a lack of understanding throughout the general community.

A house is sold every seven years, so it could take seven years before someone gets directly involved in this rating. There has been much evidence to show that people don't understand a lot—and it's quickly put aside by the real estate agents or the people they come into contact with when the house is being sold. I feel it's really important that we start to address that by educating the people a prospective homebuyer comes in contact with, so they understand the ratings scheme and the benefits of it—so that it then starts to enter the mindset of a homebuyer that you do take it into consideration, along with the gardens and the colour of the paint.

I would like to see professional bodies implementing education for the real estate agents, and perhaps also the lending agencies, so they begin to understand that, if a homeowner buys a home that's going to perform well in energy terms, then they're going to have much lower running costs and therefore more money to pay on their mortgage.

MR HARGREAVES: On that basis, Trish, when real estate agents become licensed, they must be able to demonstrate that they know how to do home finance and building construction. Do you think we ought to make it part of the licensing arrangements that they be fully conversant with current energy savings?

Dr Lovegrove: That's a very good idea! A bit of a chat on solar hot water systems might be worthwhile. Part of the Cool Communities idea was to promote solar hot water systems. One of the interesting things is that we have run into the problem that people want them, but they're having a fairly hard time getting them.

THE CHAIR: What's the impediment to getting them?

Ms Harrup: Through the Cool Communities program, we've been making people aware of the fabulous grants, subsidies and rebates presently available for solar hot water systems. You can access the Commonwealth renewable energy certificates. There's also an ACT government rebate which effectively halves the price of a solar hot water system—and there is an additional 10 per cent reduction if you're a Cool Communities household. We had a great deal of interest, and yet the end result was very few solar hot water systems on roofs. They encountered many difficulties along the way. We have to overcome those barriers.

THE CHAIR: What are the barriers?

Ms Harrup: Many plumbers simply don't want to put a solar hot water system in. They try to talk the homeowner out of wanting a system. They will try to convert them to either instantaneous gas systems or whatever else they sell. Although the retail outlets selling hot water systems may have solar systems in stock, from the feedback I've had from householders, they were actively convinced by the person sent out to the house not to get a solar hot water system.

MR HARGREAVES: Does Rheem own Solahart?

THE CHAIR: Rheem owns Solahart, yes. Therein lies part of the problem.

MR HARGREAVES: Therein lies the problem!

Ms Harrup: One person from a Cool Communities household was building a new house. He had specified to the builder that he was to have a solar hot water system. The plumber plumbed for an on-ground electric storage system and then refused to change the plumbing. He was told that they couldn't have a gas one.

THE CHAIR: He got paid?

Ms Harrup: Yes. The householder gave up in the end. There are too many battles to be fought in building a house. We lost that householder! We have tried to promote gas-boosted solar hot water systems, in that they have very low greenhouse gas emissions.

THE CHAIR: They are very expensive to install.

Ms Harrup: Yes. One plumber told a householder that it would be dangerous to have gas up there—that he couldn't possibly do it.

THE CHAIR: When I got the quote, it was embarrassing!

MR HARGREAVES: Which of the three systems—electric, gas or solar—has the higher maintenance costs?

Dr Lovegrove: An electric system clearly has the lowest maintenance costs. Between gas and solar, I don't know. It's probably much of a muchness.

MR HARGREAVES: I'm considering that, if I owned every type of heater I could possibly buy, I would be encouraging you to buy the one that's going to fall over the fastest, so I could get a maintenance contract from you.

Dr Lovegrove: From a plumber's point of view, the quickest job is to replace an electric or gas one—and do it frequently.

MR HARGREAVES: My understanding is that Rheem make an absolute motser. They make more money out of maintaining existing electric heaters than they ever did selling the things. If, in fact, a solar hot water system is going to cost less in maintenance, then you wouldn't be encouraging it too much, would you?

Dr Lovegrove: I don't know what it is. I know people at Rheem. I will try to understand the mentality of what's going on. It's not quite as bad as you're thinking.

MR HARGREAVES: I'm glad to hear that!

Dr Lovegrove: Their solar business is growing by about 30 per cent per annum—mainly from the MRET scheme. The solar hot water industry is growing nicely, but most of these companies are happy with gentle growth. They don't want other competitors coming in—as long as they have their niche market.

MR HARGREAVES: What other competitors would there be, to Rheem? Can you think of any?

Dr Lovegrove: There's Beasley, Rheem, Solahart and Edwards. Solartech is a new little one coming in. There are three and a half, you could say.

MR HARGREAVES: I haven't heard of any of the others.

Dr Lovegrove: Solahart has the biggest marketshare of solar hot water systems in Australia. It has only 5 per cent of water altogether, roughly speaking. We, as a cons council, and ANZSES as well, would like to see some fairly dramatic things like making solar hot water systems compulsory for new houses. If we did that, then suddenly their mentality would change. At the moment, they've got a niche market that's growing comfortably. They're happy; there are very high margins; so why should they bother? It's all fine.

The only thing that would shake them up is the prospect of the market becoming so big that other companies start up, make serious inroads and build new factories. A solar hot water system should be half the price it is, if it was going to the bulk market.

THE CHAIR: It's not rocket science!

Dr Lovegrove: It's not rocket science. If they were half the price they are currently, it would be more economical. It's an obvious thing to do.

MS DUNDAS: Referring to the issues people face when trying to install a solar hot water system, have you encountered people who have been stopped because of planning processes?

Ms Harrup: Yes. I was just thinking of that. We all saw Caroline Le Couteur in the newspapers. If your hot water system blows, you've probably got a 48-hour period before you want to have your next hot shower. You want to be able to ring someone, organise a quote and have the system put in. There's a limit to how long you are going to go without that shower. The majority of systems go in to replace a system that's failed. There's only a small part of the market that's going to make a long-term decision to pursue it.

THE CHAIR: To throw out an existing system?

Ms Harrup: That's right. All the impediments need to be removed.

MR HARGREAVES: Simply having it on the front of your house facing the street is a crappy reason for knocking it back?

Ms Harrup: It needs to face north. We need to accept that, if it is facing the street—

MR HARGREAVES: It's bad luck!

Ms Harrup: Once they become more common, we will be used to seeing them—and I don't think they will be an offence to the eye.

MR HARGREAVES: Would you suggest that it's a bit rich to knock back a solar hot water system on the top of a house, on a roof facing north to the street, but allow a big metal butterfly to be stuck on the side of a building?

Dr Lovegrove: I haven't seen a metal butterfly for a while!

THE CHAIR: You don't need a DA for a metal butterfly, Mr Hargreaves!

MR HARGREAVES: That's exactly my point. Perhaps the priorities are around the other way!

Ms Harrup: There is another thing that seems to be an impediment. A householder may decide that they want a new system—and they need it quickly—so they ring a plumber. That plumber doesn't want to do a solar hot water system, so they steer them towards something else. If all the plumbers were au fait with the solar hot water systems, that wouldn't be a problem. You have to go to a specialist to get your solar hot water system, yet the first thing you do is call a general plumber.

MR HARGREAVES: Is it true that, when the thing goes, the automatic response is to check the name on the tank and ring the same people?

Dr Lovegrove: Yes. Then you don't have to change the plugs.

MR HARGREAVES: That's what happened when mine blew. I had no idea that I could have changed it—other than the size of the tank.

Ms Harrup: The Cool Communities householders I've spoken with, who've gone to solar hot water systems, have put a great deal of effort into the research, in pursuing companies to go out and give them quotes. That seems a bizarre way to operate a business, but they've made the decision that they're going to have solar hot water, and actively pursued it.

THE CHAIR: You have to work at it—it doesn't just happen.

Dr Lovegrove: One of the ideas being thrown around to maybe change the psychology of it a bit is to arrange for a rebate to be paid to plumbers if they install them. Maybe the rule should be that they have to do some accredited training. There are stories around about uneducated plumbers installing them badly—without good insulation on the pipes and stuff. Maybe you should train plumbers to install solar hot water systems, and then they're eligible—the plumber gets a rebate every time he does it.

MR HARGREAVES: Or you halve the rebate.

THE CHAIR: You divvy the rebate—share that between them.

MR HARGREAVES: The house owner gets 'x' and the plumber gets 'y'. The total is the rebate.

Dr Lovegrove: That would be one approach.

THE CHAIR: Divvying up the rebate?

MR HARGREAVES: Yes. In other words, providing the incentive for both people to do it. It picks up the point you're making, doesn't it—that you've got plumbers and gasfitters and all this sort of stuff and they go down the area of an expertise. We want to steer people into another part of the expertise, to make the balance right.

There seems to be evidence that the money is a lot easier to come by if the plumbers and gasfitters are doing the greenfields stuff, but that going back and doing a heater that has exploded in the suburbs is a heck of a lot of extra work. The return on your labour is not as good as being in a half-built house, fixing it up.

Dr Lovegrove: That's probably true.

THE CHAIR: Do you get a feeling that the plumbers don't know the product and that they don't want to do it because it's more work—or is there the feeling that they're perhaps receiving a bounty for continuous gas hot water?

Dr Lovegrove: I haven't heard anything that extreme.

THE CHAIR: If I'm a plumber and I go out and buy 20 hot water systems of various sorts, I'm going to get them cheaper than if I go out and buy one.

Dr Lovegrove: That's got to be true.

THE CHAIR: I don't know that it's necessarily nefarious, but there could always be an incentive.

Dr Lovegrove: Think about instantaneous gas. If you're a plumber, you can fit 10 of them in your ute, can't you? They're only this big. How easy is that? Let's carry them around and install them, instead of carting huge tanks around—and subtle things like that.

THE CHAIR: But they use a huge amount of gas.

Dr Lovegrove: And water!

THE CHAIR: Yes. Thank you very much.

MR HARGREAVES: I was going to ask something while we have Keith here. For the record, Keith was very good and carted us to Crookwell to see the farms. Have you any comment on the latest bunfight in the newspapers at the moment, about two farmers having a go at each other over the wind farm? One says that it's too noisy.

Dr Lovegrove: I haven't seen that. Is this at Crookwell?

THE CHAIR: No. It's down in Victoria somewhere.

Ms Harrup: There is a turbine within 400 metres of a farmer's house.

MR HARGREAVES: The bloke who's got the farm is getting $15,000 a year for doing bugger all, and having the big turbine on his property. He's "happy as", but the bloke next door's upset because it makes a racket—and they're "ugly as".

Dr Lovegrove: He's probably really upset because he's not getting the money!

MR HARGREAVES: Apparently there is an inquiry, or something or other, trotting around Victoria at the moment. The pros and cons of it are being debated.

Dr Lovegrove: It's an important issue. There is the general philosophical issue that it is simply renewable energy. We're a cons council, and there is ANZSES as well. What we're on about is ecological sustainability. Just because the hardware is renewable, it doesn't mean you just put it in a wilderness area—or something like that. There's always a bad way to do it. The onus is on the companies developing the wind industry, because it's growing exponentially now.

They are always going to be tempted by looking for the cheapest and most windy site. If they don't keep the community onside with them, they must have rocks in their heads. Their support's coming from the people with the green values—that's how they even have an industry. They should make the effort to make sure every installation carries the green community with it.

That being said, I've heard some fairly reputable stories—that there's a lot of beat-up, manipulated opposition in Victoria for local political reasons—that people are trying to capitalise on it and beat it up. That's a shame, but it's probably inevitable because that's the kind of world we live in. The more important thing is that you've got to carry the community with you, with all of this renewable stuff, and not put it just anywhere.

THE CHAIR: Yes, it's very interesting. I'm not so familiar with the Victorian cases. However, in South Australia in various places on Cape Jervis—you drive around Adelaide and down McLaren Vale—there are car stickers saying, "Great idea, wrong place." Cape Jervis is tremendously windy. It seems to me that the green movement queered its pitch with the people in South Australia. They're all sitting there saying, "Why is the green movement opposed to this?" It's a very interesting question. It often seems to be a great idea in theory but, when you get to build it, you get a very nimby approach.

Dr Lovegrove: Looking at all the windy places in Australia, we could do 100 per cent of our electricity with wind, but I don't think there are enough acceptable sites. There are plenty of sites that won't upset anybody, and we can do a hell of a lot there. We certainly haven't exhausted those.

My research area is larger-scale solar thermal power stations. At the end of the day, I think we are going to need a mix; and for those things to go out near Broken Hill. They give you built-in storage for night-time operations, so they complement wind farms and it's all great. We make a mixture of these things. We don't need to put stuff in places where people don't want it.

MR HARGREAVES: What's the Monaro Plain like? You're a collector of sites for possible farms for photovoltaic, wind farms and, as you say, the mixture. The Monaro Plain, down near Cooma—it's called that because that means "no trees" is a windless, godless and soulless place, if ever you've seen it.

THE CHAIR: That's no way to talk about your electorate!

MR HARGREAVES: It's not my electorate.

THE CHAIR: It's not your electorate—it's your region, though.

MR HARGREAVES: How does that rate in your list of candidates?

Dr Lovegrove: For a solar resource?

MR HARGREAVES: In respect of solar and wind. You've looked at the sites. How would that be, as a complementary thing?

Dr Lovegrove: On wind I couldn't comment too much. The windiest places are the south extremities of the continent, obviously enough, but there are local bits. With the Crookwell wind farm, people did local mapping and found one hill that's much better than all the neighbouring hills.

There are probably hills like that in Monaro—I don't know. Solar-wise, Monaro's probably more or less the same as Canberra. It is on a big kind of band. You get the most sun at Marble Bar, Alice Springs and places like that.

MR HARGREAVES: Yes, reflecting off the ironbarks!

Dr Lovegrove: It's not that big a difference. I think Canberra gets three-quarters as much sun as Alice Springs! The sun levels we get here are kind of equivalent to southern Spain. People in Europe reckon that's pretty special, so by world standards it's not bad. To be honest, if I were the commercial developer of a solar station, probably Broken Hill would be the optimum place. If there were local development reasons and the local council were trying to help you out, that might be enough to make you shift to a particular area.

THE CHAIR: The further you move into remote areas, the more you lose on connecting it to the grid.

Dr Lovegrove: That's right—there's a trade-off. That's why you're not going to put it at Alice Springs.

MR HARGREAVES: That's what made me think of the Monaro Plain, when you were talking about the night-time storage and stuff like that. We've got the hydro production. It occurred to me that, if we could have three different types of electricity production complementing each other in the one spot, they would access the grids pretty quickly, particularly just outside Cooma.

Dr Lovegrove: Yes. Right now, we've got a grid set up to radiate out from the Hunter Valley, basically, because it's mostly coal-fired electricity that's running the place. The further you go out, the more stretched the grid gets. In the beginning, you installed solar stuff out on the edge of the grid. You relieve the load—relieve the amount being sent out—so that's a plus.

If you eventually switch it around the other way, and you've got all the generation out at Broken Hill, then you'll have to strengthen the grid so it can come back the other way. Imagine you had no grid whatsoever and were starting afresh. The further you went inland, the more sun you'd get, but the more expensive the grid would be. There'd be some sort of optimum somewhere. It probably is around Broken Hill, to be honest.

THE CHAIR: Thank you very much.

STEPHEN ROBERT BERRY and

BRONWYN POLLOCK

were called.

THE CHAIR: Welcome back. I do not have to read you the riot act because you have heard it. Thank you for coming back. You have returned because, after we had you in a couple of weeks ago, we actually realised that we do not really understand how NatHERS works. We thought it would be a good idea if somebody explained it in gory detail. Initially, I thought there were just some follow-up questions and we could write to you about it, but then we decided that we really did need to understand better how NatHERS works. Would you introduce yourselves and actually give us an exposition on how NatHERS works?

Mr Berry: Okay. I am Stephen Berry from the buildings, finance and government team within the Australian Greenhouse Office. The Australian Greenhouse Office is the national administrator for the nationwide house energy rating scheme or NatHERS. NatHERS is a scheme that it is in place to rank designs according to their likelihood of maintaining human thermal comfort. It is not about working out exactly how much energy any house is going to use; it is about ranking houses in order of likelihood that they will be thermally comfortable for the residents.

THE CHAIR: It is not about how much energy it would use, but how—

Mr Berry: That is right, it is not.

THE CHAIR: It is more about perception.

Mr Berry: It is a ranking so that you can work out which houses are better than other houses, and so you can set a benchmark to say the society does not accept any houses with the likelihood of a worse performance than that.

Why was it done? It was funded by all Australian governments to achieve a reduction in the consumption of energy required to maintain thermal comfort. It was not about all energy use, it was just about reducing the energy needed to maintain human thermal comfort.

How does it do that? It calculates the energy flows in and out of buildings according to the properties of the materials and the design's impact on ventilation flows. It uses real—

THE CHAIR: I am sorry, Stephen, can you say that again?

Mr Berry: Okay. It calculates the energy flows in and out of buildings. You have natural energy flows in—solar radiation and so on—and, depending on the energy level difference, there is energy flowing out of the building as well. Heat escaping from buildings is a simplified way of describing it.

It calculates energy flows in and out of buildings according to the properties of the materials used and the design's impact on ventilation flows, the way the windows and the rooms are arranged to allow for ventilation. However, it is mainly about the building materials. It uses real weather data on solar radiation, ambient temperature and wind speed and direction. It uses known properties of materials and how they affect energy flows such as radiation, conduction and convection.

The focus is very much on just the building fabric and the design because the building fabric is there with the likelihood of a hundred-year life.

MR HARGREAVES: Not at my place, mate, I'll tell you.

Mr Berry: There are a few buildings that do not last a hundred years but, on the whole, the building fabric will last that length of time and there are many buildings in Australia which are much older than that. The likelihood of significantly changing houses that are being built in Amaroo at the moment is pretty low. It is pretty unlikely that we are going to going to change significantly the building fabric of those for a hundred years. In the inner urban area, with urban in-fill, we may be changing quite a lot, but that does not apply to the majority of buildings out there.

It does not include appliances, the reason being that there were other mechanisms for delivering change with appliances, and they are changed on a more frequent basis. Hot water appliances, for example, are changed at around the 15-year mark, depending on what kind of system you have—some are earlier and some are later.

THE CHAIR: What are those mechanisms?

Mr Berry: Minimum energy performance standards for appliances and equipment. All the Australian governments are committed to minimum energy performance standards. The Australian Greenhouse Office manages that program on behalf of all Australian governments.

THE CHAIR: Is that the star labelling system or is that something different?

Mr Berry: Star labelling is an addition to that. That is the disclosure part. However, there are minimum standards. You cannot sell a fridge in Australia that does not meet a certain minimum performance standard, and that standard keeps going up. As technology changes and our industry gets comfortable with the change, I think it is—depending on the appliance—roughly every five years that we up the ante, we increase the stringency level for a particular appliance. Some appliances last a shorter period of time so the standards for those are changed more frequently than those for others.

It was felt that the building fabric was going to be there for a long, long time so there was a need to focus on that. The appliances were already being addressed through another mechanism, the minimum energy performance standards, according to their frequency of change.

THE CHAIR: Stephen, assuming that we know nothing, how do you actually calculate energy flows in and out of buildings? Is there some sort of algorithm that underpins the software?

Mr Berry: A number of algorithms are used. First of all, the solar radiation data are well known and the climate data are well known, so we know exactly what the sun path is at all times of the year, all moments in time. We know the patterns of cloud cover so we can estimate exactly what the energy from the sun entering the building is likely to be. We also know all the temperature information—wind speed and humidity levels, for example—so that information is used to calculate the energy coming into a building at any time from external sources.

We know the properties of the materials so we can calculate how much energy is passed through the materials. For transparent materials like glass, we know exactly how much energy can flow the material, at what speed. We know exactly the properties of the materials. What NatHERS does is model the combination of all the materials and look at the energy flows through the materials.

Energy only goes one way, from the highest energy level to the lowest energy level. If there is more energy on the outside, it is flowing in. If there is more energy on the inside, it is flowing out. It does that at the same time so, in some parts of the house, there may energy flows in and, at the same time on, say, the shaded southern side, there might be energy flows out.

It calculates all that on the basis of what is considered to be a comfort band for the residents. There is an assumption, according to scientific evidence, that people are most comfortable in a certain band—ranges of temperature, humidity and air speed. That is a well-known factor and we know the energy flows through materials, and so NatHERS determines the additional energy required to maintain the comfort level within that building for humans.

It does not calculate the likely appliance efficiency because it does not assume any appliances are there. It just shows, so all buildings can be compared to each other, the absolutely amount of energy needed to maintain human comfort for a certain occupancy pattern. Then there is another set of assumptions about average user behaviour. How many hours a day are people in the building? How much energy is actually coming off the people? You are probably producing 60 to 70 watts.

MR HARGREAVES: You are vibrant.

THE CHAIR: You are only producing about 50, John.

MR HARGREAVES: Yeah, but I have not had my first drink for the day.

Mr Berry: At different times of the day you are producing different amounts of energy. All Australian governments have agreed on an average set of occupancy settings. Those are not supposed to be exact for any particular house because, at some point in the house's life, it might by occupied by a family of seven and, at another point in time, it might have a single occupant. It is just an average of a reasonable occupancy setting so that all houses can be compared to each other.

THE CHAIR: But when we were having the conversation previously with Keith Lovegrove, there was discussion about curtains. Does NatHERS take into account

curtains or is that an accretion that comes at the user stage? Does NatHERS establish the algorithms that underpin the actual rating scheme?

Mr Berry: NatHERS allows all different elements to be considered, including window furnishings, so you can include curtains. Whether window dressings are considered for the ACT is an ACT government decision and different states and territories treat that matter differently. There is a process at the moment, for the scheme, which will come up with a national standard for that. In the past, there has not been a national standard for whether curtains are included or not.

THE CHAIR: I see, so that varies from place to place.

Mr Berry: Yes, but we hope we will solve that problem in the next few months.

THE CHAIR: Okay. I am not quite sure whether this is a question for you or for the ACT, but I gather that, at some stage, there was a change in the way the rating was calculated and that that perhaps explains why, fairly regularly—if you pick up the real estate pages you will see this—there are houses that have been resold in new areas, such as Palmerston and Amaroo, that do not actually have a four-star energy rating. You frequently see this. I think I am getting the impression that that is a question for the ACT.

Mr Berry: It is probably more appropriate for the ACT government to answer that. I would prefer to leave that to the ACT government experts in that area.

THE CHAIR: Okay, that is fine.

Mr Berry: There may actually be a difference between how the tool is used for building regulatory purposes and how it is used for the mandatory disclosure requirement. It may also be as simple as different people using the tool and interpreting the information differently. There is the likelihood of a small percentage of error.

THE CHAIR: The issue of auditing of the users is possibly an important one.

Mr Berry: It is a very important one, to maintain the standards. It is very important that the assessors are well trained, and that there is an audit program to ensure that they are maintaining that high standard of performance. There are a number of reasons for this. The house may have actually physically changed in that period of time, from what was designed to the way it was renovated, so you may have a difference in performance.

MR HARGREAVES: You would, wouldn't you? If you extended a room, almost by definition, you would get a change.

Mr Berry: Yes. Even though that particular room may meet the standard required, because of a change in the arrangement of rooms, the change may actually decrease the overall performance of the building.

MR HARGREAVES: Or increase it.

Mr Berry: Or increase it, yes. We hope it would increase it.

THE CHAIR: At the moment, if you, say, put on an extension here and rated the extension, it might perform according to the standard. However, if you actually rated the whole house as a result of that, it may not perform to the standard, but you could not actually do anything about that.

Mr Berry That is right. That could happen. The likelihood is very small.

THE CHAIR: Yes, it probably is very small.

The other issue that I wanted to raise is about something you said when you were here before. You said that overseeing the NatHERS system was the responsibility of the energy ministers. Why is that?

MR HARGREAVES: As opposed to, say, the environment ministers.

Mr Berry: Okay. It is a historic reason: during the energy crisis in the 1970s, CSIRO did some work that led eventually to NatHERS, the scheme. Energy ministers have been very interested in opportunities for reducing the energy consumption of residential buildings. The energy consumption of residential buildings is very significant. It is also now a significant greenhouse issue. However, yes, it is a consequence of the history: it was energy ministers who had the money available and were working on that particular issue. It could quite comfortably be managed by the environment ministers.

MR HARGREAVES: Is it time for a change, Stephen?

Mr Berry: I cannot answer that question.

THE CHAIR: That is a political question.

Mr Berry: We recently put a proposal to the Ministerial Council on Energy through the energy efficiency and greenhouse group for the management of the scheme to move to the building regulators, because it had been introduced into building codes. The Ministerial Council on Energy decided that it was more appropriate to establish an arrangement between the energy ministers and the regulators, rather than hand over the entire program.

THE CHAIR: Whom do you classify as the regulators?

Mr Berry: The building regulators are the Australian Building Codes Board.

THE CHAIR: They would be desperately comfortable with that, wouldn't they?

MR HARGREAVES: The people controlling energy policy are the people who are actually driving all this stuff at the moment and tinkering around with it. However, over time, it has emerged that, in fact, the big winner out of this is the environment, so has the national body considered that its location should be discussed at, say, COAG or something like that? They are not going to take it on, but they will dish it out.

Ms Pollock: I am Bronwyn Pollock from the Australian Greenhouse Office. The issue of where control of something sits is less important than that of who has input into the debate.

MR HARGREAVES: Would you suggest that was true if a conflict of interest existed, though?

Ms Pollock: It is complicated to deal with things such as the future supply of energy to Australia. Obviously, there are a lot of supply-side issues which are quite logically the responsibility of the energy ministers.

However, there are also a lot of demand-side measures. If the demand-side measures are the responsibility of the environment alone, then the capacity for demand to reduce the call on energy may not be effectively considered in discussion on the supply side. Likewise, if it is all within energy, you are not going to consider appropriately the environmental impact. It is an area where you have to have an overlap of interests, and an overlap of ministers. As long as the interactions are working, is not necessarily problematic where something sits.

MR HARGREAVES: Is such interagency cooperation working across the board?

Mr Berry: The NatHERS technical advisory committee includes, from last year and for the first time, the environmental agencies. It moved from just involving energy agencies with the development of the scheme and the tools, to include the building industry, the design industry and the environment sector. So we now have environment agencies such as Queensland EPA, SEAV, SEDA and SEDO involved in the development of the NatHERS scheme, in addition to representatives of their governments, who are looking at building regulation and also energy policy.

THE CHAIR: I see. I think that might have done it.

MR HARGREAVES: That covered what I needed.

THE CHAIR: I think I understand. I just have to just understand that it is an algorithm, it is complex and it is like magic.

MR HARGREAVES: We were talking about the possibility of somebody getting into the system and saying, "Okay, I have a process which can retrofit a dwelling, which can reduce greenhouse gas emissions, which can reduce energy consumption, and in that sense will actually contribute to it being a better place," blah blah. However, that cannot be considered in terms of the house energy rating system because it is an appliance. It is the effect of an appliance.

I accept what you are saying about the changes over time to appliances and the reasons for excluding them. What I cannot understand is why curtains can be regarded as part of the house and not an appliance because, I have to tell you, I can take the curtains down, mate, but I cannot take the hot water system out.

Mr Berry: That is one reason why some state governments do not allow you to include curtains in the calculation. There is the potential for appliances to be included, but some

of the Australian governments have to determine whether that is appropriate, and so the ACT has an equal right to do that.

MR HARGREAVES: It has not come up, is that what you are saying?

Mr Berry: No, the appliance issue has been debated for many years. It is a very important issue and it has been raised by a number of different organisations over the years. I think that the debate is still developing and so input from the ACT government would be quite appropriate.

Ms Pollock: There are a number of local governments who use a star rating system and have requirements for what are effectively appliances that are plumbed in, hot water being one of them. The Leichhardt development plan, for example, which is probably the most famous case of it, requires a lot of things to do with the star rating, insulation and so on, but it also requires, for new and renovated premises, that solar hot water be used wherever possible. If that is not possible they can use gas-boosted systems. There are a few exceptions: if you have a small terrace, hidden, and there is no light getting in there, an exemption may be possible.

They found that, by requiring these things, they forced large developers of properties, who were doing major townhouse developments, to consider that as well as the star rating. So there is always the capacity to add something extra to a plan.

THE CHAIR: The point that Keith Lovegrove made is that he wanted to know how the fabric of the building functioned, and that perhaps there is scope for a parallel or add-on system that says, "This is how the fabric of the building works. These are the other energy efficiency measures that are in the building which are not part of the fabric," where the blanket for your hot water system, your solar hot water system and those sorts of things could be factored in. There is an additional calculation. Does that fit into it?

Mr Berry: There have been quite a few proposals to consider how appliance and greenhouse efficiency of energy source can be included in this. One is that there may be a star rating, for regulatory purposes, for the thermal performance of the building fabric, but another star rating for the energy or greenhouse performance of the building, which would include the appliances, their efficiencies and the greenhouse intensity of the fuel.

Ms Pollock: It is obviously a lot more complicated a calculation because, when you move into a new building, you take a lot of the most energy intensive appliances in with you. The calculation of a lot of the energy used by appliances is about how we use them and also how the energy turns over, over time, for example, whether you are running a dryer for every load of washing or leaving all of your appliances switched on all of the time with standby energy. The building fabric is largely static so, if you use an average on a given thing, it is not likely to vary markedly over time. However, with appliances, how you use them and when you use them will actually have a marked impact on their energy use.

MR HARGREAVES: Can I ask a couple of questions going down the curtain track? Double glazing and so on is taken into account when the formula is ticked off. In some places they have that reflective film you stick on your windows. That is taken into account, too, isn't it?

Mr Berry: Definitely. All the properties of the materials, including films that are put on the glass, or anything that is put on the outside or inside of the walls, the floor, the ceiling and the roof, are taken into account.

MR HARGREAVES: With respect to hot water systems—and I am not talking about the actual system itself, because it does not really matter—does whether they are on the inside or the outside of houses have an effect on the rating?

Mr Berry: Appliances are not included in the rating.

MR HARGREAVES: At all, full stop?

Mr Berry: At all, full stop, at the moment. If that is something that the ACT government wants—

MR HARGREAVES: You would agree that there is a big difference between having the thing in the house, having it outside your house or having it on the roof?

Mr Berry: There are lots of issues about its performance: whether it can be inside or out and regarding occupational health and safety—whether, if you bring a gas appliance inside, it is flued. However, the properties are going to change, because—

MR HARGREAVES: I am thinking about the effect on the greenhouse gases and the effect of energy use reduction, in terms of whether an appliance is on the inside of the house or the outside of the house. I would imagine it would have a significant effect.

Mr Berry: There is quite a large effect, because of the temperature difference, which changes the rate of energy flow. That is markedly different if the appliance is inside the building compared with outside the building.

THE CHAIR: But you do not measure it because you do not actually take into account whether or not there is a hot water system, as far as NatHERS is concerned?

Mr Berry: That's right. NatHERS, at the moment—

THE CHAIR: Is not concerned about hot water systems.

Mr Berry: That's right.

MR HARGREAVES: Perhaps NatHERS ought to think about it. I am finding a bit of a contradiction here. I can stick a film on a window, but I cannot put a cover over the external water heater and have both of them affect the rating of the place. Both of them are retrofitted.

Mr Berry: Yes. What appliances should be included is an issue that the governments of Australia have considered and will probably continue to consider. The question is: at what point do you have a cut-off? What appliances are in or out?

MR HARGREAVES: I was just thinking to myself, of all of the appliances which are to do with a house—quite apart from the range of little items—the three that seem to me to be the big greenhouse gas contributors, and ones that rip the energy out of the place, are hot water systems, air-conditioning units and refrigerators.

It seems to me that, if an air-conditioner system is built into the house on construction, then it has an integral impact on the energy rating of that house, on the probable usage of energy. With water heaters, every house in our country has a water heater of some kind. It just seems to me that you do not find too many houses without a hot water heater there somewhere. So the differences between the two, three or four types of water heaters, in terms of the energy efficiency of the house, ought to cop a rating contained within the statement that this is an energy efficient house or it is not an energy efficient house.

THE CHAIR: I think there is a misunderstanding. It is not an energy efficiency rating of the house. It is a rating of the fabric of the house. Now I understand it. If you actually want a rating of the efficiency, the greenhouse cosiness or whatever of the house, it has to be an add-on.

MR HARGREAVES: I am not disagreeing with you there at all.

THE CHAIR: Maybe you add them up to get a final figure.

MR HARGREAVES: But I think the treatment, the film on the window, because it is a retrofit or it can be a retrofit, it ought to fall into the second half of this thing, not the first half of this thing. It is the same as curtains: you can take them down, you can stick them up, you can do all that sort of thing. It really ought not be part of the basic fabric of the house.

THE CHAIR: Or you can fail to close them at the right times.

MR HARGREAVES: I can tell you that this place that I live in has nice north-facing everything, including me, but I have changed the window treatment on the thing three times in two years. Yet, when I bought the place, it had an EER rating which is, funnily enough, dependent upon it having curtains in all of the windows, and there was not one curtain in the house when I bought it. The whole place had vertical blinds. You see the point? What I am talking about, in terms of NatHERS, is whether or not the curtain treatment or the film on one side of the glass ought not be part of the system. Maybe that has already been thought about.

Mr Berry: Certainly, the technical advisory committee will be considering whether window furnishings will be included in the recommended operation of NatHERS Family Tools in the future. We are going through the process of improving the calculation engine for a second generation of NatHERS Family Tools. The testing process is happening right now for that, and so we will have, for next year, a new family of tools that calculate things differently, utilising the best scientific evidence available and new algorithms, and give an expanded scope of coverage, particularly on the issues of ventilation and the calculation that we use for that. There are a number of other changes to it.

There is to be reference documentation for the second generation of tools, and that will incorporate the recommended treatment of all different parts of the house, including window treatments.

THE CHAIR: Just one final question: is there any plan to extend NatHERS to commercial buildings?

Mr Berry: There is no intention to expand the nationwide house energy rating scheme, or something similar, to commercial buildings. However, there are already a number of very good quality energy modelling tools for commercial buildings that have been developed overseas. They are quite appropriate once you add the Australian climatic data, so the Australian government saw no need to invest in a new one.

THE CHAIR: So we are not reinventing the wheel, but are there steps afoot to apply some standards to commercial buildings in the same way that we are applying them to residential ones?

Mr Berry: The Australian Greenhouse Office contributes the Commonwealth's funding to changes to the Building Code of Australia to establish minimum energy performance standards for all building types. On Monday this week, the draft regulatory document was released for classes 2, 3 and 4. Class 1 was introduced on 1 January this year.

THE CHAIR: Sorry, what are these classes?

Mr Berry: Class 1 is detached dwellings, class 2 is multiunit dwellings, classes 3 and 4 are residential parts of other building classes, and work is progressing on classes 5 through 10, for all different types of commercial buildings. So there will be minimum standards. Building environment indices have been released, most recently Green star, from the Green Building Council of Australia. That tool was released so you can examine the environmental performance of a commercial building. There are rating systems available to examine the environmental performance, there are tools available to rate just the greenhouse performance of existing buildings, and there are tools available out there to examine the likely energy performance of commercial buildings.

THE CHAIR: But, at this stage, do they have any mandatory effect?

Mr Berry: There is no mandatory requirement for the use of any of those tools at the moment within building codes and there is no national planning code at this stage.

THE CHAIR: Thank you. I think that is it. Thank you very much for coming back again and making it clear.

JOANNE WARREN-WILSON was called.

THE CHAIR: Thank you for attending these hearings of the Planning and Environment Committee into renewable energy and efficiency. You should understand that these hearings are legal proceedings of the Legislative Assembly, protected by parliamentary privilege. That gives you certain protections, but also certain responsibilities. It means that you are protected from certain legal action, such as being sued for defamation for what you say at this public hearing. It also means that you have a responsibility to tell the committee the truth. Giving false or misleading evidence will be treated by the Assembly as a serious matter. Please introduce yourself for Hansard and outline your position.

Mrs Warren-Wilson: I have given a handout of one page to each of you as background. I am Joanne Warren-Wilson. I am the senior energy planner for the ACT Planning and Land Authority. I am responsible for energy efficiency in subdivisions, that is, block designs for new subdivisions, which takes in solar access rights. I am responsible for new residential design under the ACT house energy rating scheme, and I will talk about that and how it ties up with NatHERS .

I am also responsible, under ACTHERS, for the operation of the disclosure of the performance of energy efficiency of dwellings at the point of sale. That was introduced some time ago, as you know, by the Greens, and was supported. I am also responsible to research schemes so that I can develop appropriate guidelines and have the appropriate schemes introduced in the ACT for commercial buildings. My duties I've actually outlined in there.

THE CHAIR: You say that you are the senior energy planner. How big is the group that you work with, or are you it?

Mrs Warren-Wilson: I am it, so I do have my hands very full.

MR HARGREAVES: That addresses Mrs Cross's empire building.

Mrs Warren-Wilson: Just to follow on with that, I have the solutions and the ideas, but I don't have enough hours in the day. And this is a growth area, dare I say.

THE CHAIR: One of the things that struck me about the ACT government is that with all of these things everyone is spread very thinly. We wrote to the Chief Minister about this earlier in the inquiry because, when it comes to looking at energy efficiency and renewable energy, there are people everywhere—there are people in the EPA, there are people in DUS, there are people in ACTPLA and there are people in Treasury—who all deal with these things. Do you have a feeling that everyone is talking to each other? Are they in the same hymn book or even on the same page?

Mrs Warren-Wilson: The thrust is in the general direction and certainly we're trying to go that way, and that's about the environment and whatever measures we can introduce to support it. In any organisation, especially when it has different function responsibilities, you're going to have good liaison in certain areas because of networking and you're certainly going to have a lack of liaison in certain situations. Of course, we've all been subject to both of those.

THE CHAIR: On a scale, is liaison working well between all the disparate areas?

Mrs Warren-Wilson: I liaise with people and I find that I'm actually having that responded to now from Environment ACT, because they are interested in the greenhouse gas emissions and they have a big hat, whereas I have a very close marriage on energy efficiency for a smaller contingent which impacts on their bigger hat. So I'm talking to Environment ACT on their greenhouse strategy, for example, the ACT greenhouse strategy, and other areas where they have ideas of putting new systems in or new standards. I also liaise with Treasury. As you said, this direction has people all over the government.

One of the things we find is that when you have a committee which is a national committee and there's one representative, it's very difficult because quite often that subject will fall into many different areas and this person may have to go on one occasion but another may be needed on, say, residential energy. The Treasury is responsible for energy policy at levels much higher, so there are all of those components and we are dictated to, unfortunately.

THE CHAIR: Not this time when the Greenhouse Office was here but previously there was some discussion that the ACT wasn't being represented on the NatHERS—revamping advisory board, whatever it was called.

Mrs Warren-Wilson: This is a little bit of corporate history, corporate knowledge, and maybe I'm the one who actually has that knowledge and other people have come in later. I don't know how long this inquiry is going to go on for. Are you coming towards the end of it now?

THE CHAIR: It is going to go on forever, I suspect. No, we will have an election in 13 months, so we'll have to finish before then.

Mrs Warren-Wilson: As far as representation on the technical committee, can I tell you some history?

THE CHAIR: Yes.

Mrs Warren-Wilson: First of all, any of the house energy rating schemes, the HERS schemes, that we have were decided in a COAG agreement in 1992. That's where it all started. We, as the ACT, led by putting in the first mandatory scheme. There have been voluntary schemes and we ended up working with SEAV. I presume you know all these mnemonics now.

THE CHAIR: SEAV?

Mrs Warren-Wilson: Sustainable Energy Authority Victoria.

MR HARGREAVES: The short answer to that is no. As I was listening to the table tennis game before between the mnemonics I thought to myself that I would work it out when it's in *Hansard*.

Mrs Warren-Wilson: They actually picked up the development of the front end onto NatHERS . In that COAG agreement there was a requirement that NatHERS would be the benchmark for Australia, any HERS schemes would conform closely to NatHERS , and I'm no different. ACTHERS has to conform closely, and VICHERS. Now we're using a model called FirstRate—that's only the software tool—but they all have to conform closely to NatHERS. You were talking about why can't we do certain things. I would love to include those space cooling and heating components and the hot water systems, it's the way to go, but we are tied to our benchmark because of that agreement. We can talk about those developments later.

MR HARGREAVES: The vibe I have been getting out of this—not just today, but right through this inquiry—is that it's really difficult to change the national benchmark, or even challenge the national benchmark, that it's difficult for one jurisdiction or an individual to do that.

Mrs Warren-Wilson: Can you keep that in mind? I just want to answer Vicki's question on whether we are represented on the technical committee.

MR HARGREAVES: Yes, I can keep it mind for about 20 minutes.

Mrs Warren-Wilson: When NatHERS was being developed, it was actually right back with ANZMEC, the Australia and New Zealand Minerals and Energy Council; it was not only Australia but also New Zealand. You heard Stephen Berry of the AGO talking about how this was developed, because it was an energy component and there has been a shift now to the environment. There was a disbanding of the task force. I was actually part of the energy management task force. That was disbanded and NatHERS went along—and I can't comment on that—but there has been a revival.

We had several meetings to talk about where we could go with this. It was decided that NatHERS should be looked at very intensely to try to get it to do what it originally said it was going to do. I was part of that national committee, and that was beneath the E2G2, which is the energy efficiency greenhouse group, and that representation is usually at the CEO level of the appropriate department.

We talked about who should be on the technical committee, remembering that E2G2 has funding from the national level for each of the states and territories, and we voted that the people who should be on the technical committee were the people who had been involved in the development of it, and that would include people like Angelo Delsante from CSIRO. Remember that AGO was saying that they went to CSIRO and built the engines.

THE CHAIR: Yes, they were the original designers.

Mrs Warren-Wilson: He has that history and he is really spot on. We decided that we were going to consider people like Alan Pears and Trevor Lee, but that didn't come to anything. You heard that we have SEDO, the Western Australian Sustainable Energy Development Office, and SEDA, the New South Wales Sustainable Energy Development Authority, and we decided that the people who would best represent us were the people who had that knowledge. So we are represented.

THE CHAIR: You don't feel that it's a deficiency that we're not being represented on the technical board.

Mrs Warren-Wilson: When you said about liaison, we are represented, but I haven't had any feedback. What we also did was we nominated AGO to represent each of our governments, and E2G2 would fund originally half of the position and AGO would fund the other half, and that's our administrator. But in the interim, I understand, the committee I was on was disbanded, so now it's going from E2G2 to the administrator of AGO, so the link has broken there.

THE CHAIR: And also some of the corporate knowledge has frittered away.

Mrs Warren-Wilson: Yes, there's a bit of a vacuum in my knowledge. Sorry, your question was?

MR HARGREAVES: The question was: is it difficult to influence change on that for one of the jurisdictions or an individual—for example, if an individual wants to challenge some of the premises underpinning the standards and wants to make a case to have that challenge considered? It has been coming through for quite a bit of the inquiry that people just can't do that—they just don't know how to do that, they can't get through or there is a brick wall or something else.

Mrs Warren-Wilson: The national benchmark, as I said, is NatHERS and we were actually discussing how we were represented. That link is now broken, so I have difficulty in answering that question because I'm not in the loop any more.

MR HARGREAVES: The short answer to that, if you're not in the loop any more, is yes.

THE CHAIR: How does the ACT get back in the loop? Is it important that the ACT get back in the loop?

Mrs Warren-Wilson: It is. We need feedback from AGO as our administrator. I don't know what has been provided in the first round of AGO, but I would imagine that they are looking at a national tool so that there are not going to be diverse HERS throughout Australia—for example, VICHERS, ACTHERS, NatHERS. From what I understood this morning, it looks as though in the next few months we're going to have a national tool which will be recognised by the BCA. I should say about the BCA being the mandatory—

THE CHAIR: The BCA?

Mrs Warren-Wilson: Sorry, the Building Code of Australia. That is really our safety net for building and it is the minimum standard we need to function at for all buildings in Australia. What we've tried to do in the ACT is to go for an idea of excellence to be above that and that currently is in the ACT addendum. There were a couple of things that were raised this morning that I'd like to input to.

THE CHAIR: Okay; we just have a question.

MS DUNDAS: It might be something that you are going to address anyway. You have told us how ACTHERS addresses new residential design and you're telling us about existing properties. We were having a conversation earlier today about energy efficiency ratings for rental properties and how the COOOL communities project is dealing a lot with rental properties. I was wondering whether you had anything to add to the discussion about energy ratings for rental properties, whether they should be mandatory, how they would be applied, and what we can do to encourage landlords to make their houses more energy efficient.

Mrs Warren-Wilson: Initially, ACTHERS was for residential design only, and I need to talk about that too, because that addresses your question on curtains and what it really means, because it's at the design stage approval. Introduced was the Energy Efficiency Ratings (Sale Of Premises) Act. It came in on Christmas eve in 1997. It was passed by the Assembly. It was implemented on 31 March 1999 and it said that at point of sale there had to be two things done: the advertisement had to appear with an EER, an energy efficiency rating, and the contract for sale was not complete unless that energy rating formed part of it.

Because it was nominated by the Greens that the tool to use for implementation of the EER(SOP) Act would be my ACT house energy rating scheme, I had to have the two working as one. The responsibility for implementation was PALM's at that stage—Planning and Land Management, now ACTPLA. The compliance of it was by Justice and Community Safety; it was always their responsibility. Tied to that piece of legislation was that as soon as the EER(SOP) Act, the one for the point of sale, became operational, so would the amendment to the Residential Tenancies Act, and that required that, if there was a rating, it should be made available to prospective lessees.

MS DUNDAS: But it's quite clear that it's an "if" in the legislation.

Mrs Warren-Wilson: Yes.

MS DUNDAS: If you look through Saturday's paper, no rental property has an energy efficiency rating advertised.

Mrs Warren-Wilson: Indeed, and that's the problem. JACS had the responsibility of putting that piece of legislation in. I don't know how they managed to do that, but I would have nightmares trying to have a compliance program that says that if you've got a rating then it should appear, how you approach the compliance with it. My suggestion is that an amendment to the Residential Tenancies Act would make it much easier for that compliance and, apart from that, just as the argument for the EER(SOP) Act was that it was another piece of information about an asset which was going to be purchased, then to a lessee it's going to be another piece of information for them to make an informed decision about which property they're going to rent. The people who say that they will go for the cheap property might be the people who can't afford to pay the energy bills. So it's a very simple amendment to the Residential Tenancies Act.

THE CHAIR: Instead of paying $10 a week more in rent and saving $20 on their energy bill.

MS DUNDAS: To change it from an "if" to mandatory.

Mrs Warren-Wilson: Yes, and I see that as a solution there.

MS DUNDAS: The real estate industry would not support that move, according to the last conversation I had with the industry about it.

THE CHAIR: Who is worried about that?

MR HARGREAVES: It has never been something that has worried the committee.

THE CHAIR: Can I go back to a couple of issues? I'd like to get onto how ACTHERS and the add-ons work. Before I do that, I want to go back to something that you said earlier when I asked you about consultation and you said that you consult.

Mrs Warren-Wilson: Yes.

MR HARGREAVES: Is that a one-way street?

Mrs Warren-Wilson: Oh, no, once I consult, I start getting the network working and then people are aware. It's very difficult for a person, say, sitting in Treasury to realise that somebody is sitting way out there in one of the authorities who is responsible specifically for this particular area. I find that for every officer in a public service it must be very difficult, especially when they are trying to resolve something and they're saying, "Whom should I speak with?" It has become more obvious that I'm the person now in the ACT.

THE CHAIR: How long have you been in the position of senior energy planner?

Mrs Warren-Wilson: Since Christmas 1997. It has been a growth industry since then.

MR HARGREAVES: Not in your section, by the sound of it.

MS DUNDAS: In terms of liaison, you are trying to bring cross-government agencies together to understand more what is going on and in this paper you list that you work with the construction industry, et cetera. Have you been liaising with the COOOL communities project and environmental groups which are working on the ground?

Mrs Warren-Wilson: Environment ACT are dealing with those, really.

MS DUNDAS: So it is like a two-step process: you work with Environment ACT and Environment ACT works—

Mrs Warren-Wilson: And they have programs, yes. And we have different areas of responsibility. That is what I was saying: there is a very tight marriage between energy efficiency and greenhouse gas emissions for the sectors. I would like to go back one step. It doesn't start with building the residence or the orientation of the building on the block and the building envelope; it starts at the new subdivisions. I need to talk to you about that because I do audit every new subdivision—it comes across my desk—and we work in line with AMCORD, which is the Australian model code for residential design. It's a national code.

MRS CROSS: I think we need an encyclopaedia for these acronyms.

Mrs Warren-Wilson: Indeed, it's jargon, jargon. Connected to that is the development of ACTCode, which is the residential code for the ACT. Every subdivision that comes across my desk has to conform with certain algorithms and I look at those various aspects. The contours of blocks facing towards north or away from north will affect the solar access. It will look at the size of the frontage and the overshadowing of buildings, because we have concept plans and outline plans showing where the buildings will be. It considers what the building will be like on that block in relation to what the building will be like on the next block and the impacts. I have a rating of 75 per cent. It must be three stars and above.

THE CHAIR: What do the three stars mean in this context?

Mrs Warren-Wilson: That's an energy rating, very similar to the residential design and like MEPS, the mandatory energy performance system for appliances. We've tried to keep everything as stars, so if people see a star they know what it means and then they go into that area to see what that star actually means. Having said that, with the residential design it says, "Okay, you now have a good block to build your home." Then the home is built and it can be only, in our area, four stars or above.

How a star is measured—I thought this was one thing that would assist from the AGO's response here—is in megajoules per square metre per annum of thermal energy. We have a rating which is so many megajoules per square metre per annum for stars and you can put a value against that for your energy bills. If a person has a five-star design built on a block and the block is appalling, it's one of those that fall below the three stars, then the house will function as a five-star house.

What I want to see is that the subdivision is going to offer an advantage. You may have a five-star performing house but, if you've got a really good solar access block and you have that extra solar passivity, then you don't have to use your energy as much to get to that point, having the design work for you. So the two things are separate but they work together.

THE CHAIR: You're actually saying that if you had a three-star or four-star block you wouldn't necessarily need a five-star house.

Mrs Warren-Wilson: No, I'd say that we'd still have to have a mandatory minimum four-star house and, hopefully, we can raise that.

THE CHAIR: Do you see a way of increasing the performance of subdivisions? At the moment, 75 per cent of them must have a three-star rating.

Mrs Warren-Wilson: I have the ideas, yes. One of the things that I've put forward and I feel quite confident about is 75 per cent of the blocks being three stars or above is fine. I think we can probably take that up to 85. This is my feeling. But we need to also write the subdivision guidelines, or I need to, to reflect that we should consider new developments, such as terraces, which we haven't really looked at in the energy guidelines before. We are now having designs where you have a whole run of terraces.

Yes, they must be oriented in the correct way to get the right solar access, but they may have rear lanes and therefore they don't need as wide a frontage and they have the sharing walls because they're all in one block. I have to actually write in there that that block does not have to be the same as a detached, standalone dwelling block.

THE CHAIR: You need to write more flexibility into the subdivision designs to take account of the different housing styles.

Mrs Warren-Wilson: I need to extend the guidelines to consider those situations, yes, but only for those developments.

THE CHAIR: It has been said to the committee and it has been raised with individual members—at least it has been raised with me—that on many occasions people go to a land auction and the documentation requires that they build in a particular way, that a lot of the planning is already done, and the view is that the person who buys it to develop it is basically marking out the pegs and pouring the concrete and they don't have any scope to develop beyond that and often that the subdivisions do not meet the solar access standards. Is that your experience?

Mrs Warren-Wilson: Indeed, the documents are developed to go to auction. That is a different part of government and I'm not involved in that, but I do see them coming across my desk and that's where I have identified that I need to be involved in further extending the subdivision guidelines. We don't have subdivision guidelines at the moment. They're in energy guidelines and are picked up there. I'll bring them out and develop them in their own right. We do not recognise at this stage the new developments of these terraced buildings and, yes, I need to do that.

THE CHAIR: Are you confident that all the subdivisions that are developed in the ACT meet the mandatory 75 per cent three stars?

Mrs Warren-Wilson: Of the ones that I see, they will for the single, standalone, detached dwellings. I am in consultation with the developers—not the ones who actually win at auction, but the people who are developing these packages—on what I see as a solution until I can get the guidelines to cover it. I'm not sure whether I see all of the ones coming across my desk, but I am trying to see them.

THE CHAIR: You have qualified the ones that you see. Do you have any feel for how many you see?

Mrs Warren-Wilson: I was hoping I was seeing 100 per cent, but that needs tighter scrutiny in my opinion.

MRS CROSS: Do you see them all? If you don't, why not and is it out of control? Do they choose not to? How does that work?

Mrs Warren-Wilson: I presume I'm seeing them all. If I'm not, I'm not aware of that. As I said, in large organisations, if something is sent for circulation, sometimes that circulation doesn't get to people. I've tried to make sure that that circulation list is not going to someone who then has to circulate it to a whole lot of other people but that it comes direct to me. That has just been addressed recently.

THE CHAIR: That might be the case now, but it was actually pointed out to me concerning particular developments in Gungahlin that what they bought at auction was a mandatory development plan. The builders themselves said to me that they could have done it better, that there could have been better solar orientation and that they didn't actually meet the ACT government standards. That was for something sold by the Land Development Agency or its precursor and you don't necessarily see the mandatory development plan that goes with the auction documents.

MRS CROSS: How does that fall through the cracks and why doesn't Mrs Warren-Wilson see that?

THE CHAIR: I don't know. Do you see the mandatory development plans that go with auction documents?

MRS WARREN-WILSON: I should see them before that and that's what I'm trying to do; I'm picking it up when it's at the concept stage, otherwise it's already almost a fait accompli.

MRS CROSS: Given that you're a public servant and you're the senior energy planner for ACTPLA, why would the GDA not consult you?

Mrs Warren-Wilson: I think you need to go ask them, not me, but I'm sure they think they are. That's what I'm saying about the circulation; it is probably human error or lost in in-boxes, who knows, but I'm trying to get it direct.

MS DUNDAS: I know that you can't comment on government policy, but do you think that there's room within ACTPLA to expand the energy planning unit so that there is room to actually develop these ideas, continually assess the guidelines, and do them whilst still doing everything else that you need to do?

Mrs Warren-Wilson: Indeed.

MS DUNDAS: Do you have any gauge on how big that team should be?

Mrs Warren-Wilson: I've done a benchmark in other states and, just for residential design, in Victoria and also in New South Wales when I did this 3½ years ago they had five people in each state. They now have separate teams in Victoria for commercial research, so we're pretty well understaffed, yes. I really do need some staff, and not necessarily at high levels, but certainly two other people.

MRS CROSS: Have you asked for them before and have they been denied to you?

Mrs Warren-Wilson: No, they weren't denied, but I don't think they went through the process. Certainly with different structures going on, it's very difficult with the budget to get extra resources, or even accommodation. This is the point: where do we put people?

MRS CROSS: Where are you based?

Mrs Warren-Wilson: I'm based in Dickson at Dame Pattie Menzies.

THE CHAIR: I'm getting the feeling here that, while there's a lot of goodwill, we're missing the mark a bit. Are there instances where, either advertently or inadvertently, things have happened that have undermined your situation when you have been trying with straitened resources to do all this work? It seems in some way that ACTPLA is not in the loop.

Mrs Warren-Wilson: No, I didn't say ACTPLA wasn't in the loop. I am saying that the AGO—there was the E2G2, and I've defined what that means—disbanded the committee I was on. That was the one that I said I wasn't in the loop on because that happened.

THE CHAIR: Do you generally feel that you're in or beginning to be in the loop across the ACT government?

Mrs Warren-Wilson: I'm okay as far as energy efficiency is concerned, because I'm the one person now that people are recognising for the government on residential, et cetera, and for the commercial development. I'm finding it difficult to try and get to those conferences, et cetera. It's just a resourcing situation.

THE CHAIR: Going back to ACTHERS and the ongoing discussion about whether you should include appliances, curtains, et cetera, is it the case that the ACT does include curtains?

Mrs Warren-Wilson: In certain cases. I'm sorry John's not here, because these are the areas that he's very interested in, but when we say ACTHERS for a new house, the house hasn't been built yet. It's part of the development application process and it's one of the points on the checklist that have to be met before that development application is approved.

MRS CROSS: Window furnishings.

Mrs Warren-Wilson: No, I'm saying the requirement for a DA.

THE CHAIR: The energy rating.

Mrs Warren-Wilson: The energy rating itself is just one of those points.

MS DUNDAS: It's done before the house is even built.

Mrs Warren-Wilson: It has to be because you won't have a design to build the house to. "This is what's being approved. This is what I intend to have built." The house is just purely and simply the fabric and it cannot include curtains. The person may never put curtains up or they might put up, as you mentioned before, vertical blinds.

The other thing is that in 1995, when we brought this in, there weren't vertical blinds. They became a vogue or fashion statement subsequently. When it was first introduced, there was the idea of how to rate a house, because we know people are going to move into this environment and put curtains in, so we will make some assumptions. This was right in the initial stages of ACTHERS when it was ACTHERS with an "S" for the

scheme and "S" for the software; they were both ACTHERS. There was probably between three-quarters and one star being added as an assumption for fitout—that you would have carpet in certain areas and you'd have lined drapes with pelmets. That was in the software. Remember that we had to conform to the COAG agreement for NatHERS.

Subsequently, there have been alterations made to that, with FirstRate now the software and ACTHERS still the scheme. FirstRate can be rated to say, "Okay, there aren't any curtains in the place." Certainly, the design should be rated for the design of the fabric of the building, not what a person is going to fit it out with. That's where our four-star became much, much harder at the introduction of FirstRate. We actually went up about half a star on houses because we were saying the design now has to meet four stars, which it did before, but now there's no assumption being included.

THE CHAIR: So it's now the case that curtains aren't counted, but they were previously.

Mrs Warren-Wilson: In new design, yes, they are certainly not countable. I can categorically make that statement.

THE CHAIR: But if you came into a house that somebody was selling—

Mrs Warren-Wilson: But that's a different piece of legislation.

THE CHAIR: There, if you had lined curtains, you would get a rating for that.

Mrs Warren-Wilson: Yes, and that's under the EER(SOP) legislation which was introduced.

MRS CROSS: Just for clarification: You said that curtains don't count now, unless they have a backing and a pelmet; is that right?

Mrs Warren-Wilson: No, sorry, let me go back one step. I've got a block of land I've just purchased and I want to build my home. I go along to ACTPLA and I say, "I want to have this house built." They say that you have to do streetscaping, that it has to be back so much from the boundaries and all of those things that are required in a development application process. One of the things that has to be considered is that it must meet a mandatory four-star minimum for the building fabric. No curtains, no carpet, nothing, just the fabric.

That's at the design stage. Then it's built, and I need to talk to you about the built stage because that's where the hiccup is and where John has some problems. The EER(SOP) Act which was introduced is about point of sale on-selling of existing homes. If a person is buying a house and it is performing because it has certain things in it, they have to be considered. The rating assessor will go into the place and say, "It's got R4 batts in the ceiling, R2 in the walls. It's got carpet in certain areas. It's got so many vents that are not covered. It has a fireplace that doesn't have a flue. It has vertical blinds, which don't add anything to the rating."

At that stage there's a difference. It's also a check for the purchaser. They come in and there are no curtains at all and they were supposed to have full-length drapes and they

say, "Under the EER(SOP) Act you provided a rating and the curtains aren't here," so there are penalties in that, yes.

MS DUNDAS: The problems that exist with the EER(SOP) Act and how it's applied and the penalties that are there would need to be picked up if we changed the residential tenancy for renters, because you can do a rating on a house that is going to be rented and then take the curtains away.

Mrs Warren-Wilson: I think you'll find that there are already penalties in the amendment that refers to that Residential Tenancies Act rating and you just have to say it's mandatory under this new rating. You'll probably find the penalty is already in there because they're two separate pieces of legislation. On John's WERS window thing, that is part of the rating.

THE CHAIR: Is that the film on the outside?

Mrs Warren-Wilson: Yes. If the film was there when the house was to be designed, it must be on the plans and therefore is picked up under the Building Act and therefore would be considered under the quality of the windows. There is also a scheme called WERS, which is windows energy ratings scheme, and there are so many combinations of windows.

MRS CROSS: Is that where the double glazing thing comes into it?

Mrs Warren-Wilson: Double glazing, everything.

MRS CROSS: Aluminium versus wood frames.

Mrs Warren-Wilson: Yes, the whole works. If a person changes it and then they sell their home, then that gets picked up at the point of sale, so it's quite good because it's an educative thing.

THE CHAIR: Is the energy rating of windows taken into account in the original rating?

Mrs Warren-Wilson: Yes.

THE CHAIR: So that you can affect your rating by the sort of window you install, irrespective of whether it's double glazed—a wooden frame or you can get energy efficient aluminium frames?

Mrs Warren-Wilson: Yes. A person can buy a zero or one star performing home and make a lot of different changes to it. When the rating is done for the point of sale, that particular rating also has an optimised page in it. The software allows you to pinpoint where your best increases in performance will be. I've said to my assessors, "Please give the reasonable solution that it is not going to be double glazing of the house right through and cost $25,000, when it might be just purely and simply putting on an external blind to stop the sun hitting that window, which is a very cost-effective solution." I've actually included that.

THE CHAIR: I asked a question before about how there seem to be houses that must have been built on a four-star energy rating, but when they are being resold they are getting three and 3½ stars. Is that because somewhere along the line we took the curtains out of the rating, or is there something else?

Mrs Warren-Wilson: Indeed, and certainly with the previous production of the ACT greenhouse strategy Brendan Smyth actually said, "I'm going to increase the mandatory minimum." I did some research at that stage and found that, in fact, the four stars of FirstRate was equivalent to 3½ stars of the old ACTHERS software, and that was the actual increase, so it looked as though it was still four stars but it was actually another half star. When we say that by COAG we should be conforming to NatHERS, we do because with NatHERS in New South Wales the mandatory minimum is 3½ stars, so we conform to the government's requirements to go up that extra half a star.

THE CHAIR: It has been said to us that, as a bare minimum, we should make the mandatory energy rating five stars and it has been otherwise said to us that we should be looking at incremental increases over time, increasing the star ratings as time goes by. From your position, would you see that that would impose an onerous burden on home builders?

Mrs Warren-Wilson: I'm glad you asked this question. At the moment, the mandatory minimum is four stars. I think we probably will move to five stars. I don't think we should do it before 1 July 2005. That's when Victoria goes to it. I will not be able to do it in a small pool like the ACT with the numbers we have unless I liaise very closely with the peak building groups and have their input, and also I'm at the moment negotiating to have a small research study done on the delta between four and five stars and what that cost means—the minister is aware of this—to affordable housing, so I've tried to consider all of those things.

I was surprised to see that somebody made a comment about how much it cost, especially when our study hasn't been done and I'm just negotiating it, but I think that they're probably referring to Victorian figures, and they actually are talking about going from 2½ stars to five, because in Victoria it was a voluntary scheme, so therefore it can be from any amount. But we're interested, because we've always had a mandatory minimum, in moving from four to five. Recognition of a house that's performing above five—

THE CHAIR: I want to talk about that as well.

Mrs Warren-Wilson: I've already said it, so I might as well continue. That's not a change to the scheme. We're still conforming very closely to NatHERS. Therefore, it's something that this government would like to do and therefore we can recognise houses. I haven't got the ability to have it done automatically, but by December I'll get my assessors to stamp it accordingly that it is 5½ stars or six stars. They have to stamp it.

THE CHAIR: The software, I presume, will actually give you a measure if you put in all the stuff.

Mrs Warren-Wilson: It will show the point score.

THE CHAIR: It will show you the point score. From that you could work out how many stars, so you actually have the capacity now to measure whether something is performing at six, eight or 10 stars. In a sense, you don't have to review the software to have a 10-star or a 20-star energy rating system.

Mrs Warren-Wilson: It won't go to 20. It won't need to be reviewed because it's in there, yes, correct. But I've already asked for the six-star recognition to be input and that has been input and they're working on it. The AGO is doing that, obviously given that commitment from the national forum I was on, so that's being done.

THE CHAIR: Okay.

Mrs Warren-Wilson: You were going to talk about going above five stars?

THE CHAIR: Yes.

Mrs Warren-Wilson: It's not just a straight graph. I noticed that Keith Lovegrove was saying what a good performance was and the software cannot model something like trombe walls. That's not true; it can. You don't put in trombe walls, but you put in thermal mass. You can measure those walls and pop it in; it's in there. He doesn't use it all the time, so I can understand that he is a bit rusty.

THE CHAIR: So you can measure trombe walls.

Mrs Warren-Wilson: Indeed, and our assessors would. It would be put in as thermal mass; they'd just measure them. The thing about the graph is that it performs very well for a conventional home between 3½ and 4½ stars. That's what it was developed for. But if you look at the actual graph, you're going to have it come across from the left hand side low. It will come to you 3½ and four and then it will start swinging up exponentially. We are already swinging up exponentially when we go to five, because, remember, with the new home being built, they won't have curtains in them, they won't have carpet in them. It's the design with the glass there that has to perform that five-star. Once you get to six, then you're going to have impact for cost, very heavily.

THE CHAIR: Once you get beyond there?

Mrs Warren-Wilson: Yes, the exponential, you're starting to get against cost and performance. It's very tight.

THE CHAIR: Okay. Anything else?

Mrs Warren-Wilson: I just want to say that one of things for the public, including real estate agents, is education and I've actually put my website there. I developed an energy website for residential design and the guidelines are up there. Everything that needs to be done for ratings is on the website, and the real estate fraternity is informed through JACS, through the registrar of real estate agents, so all of the information is available on the web.

THE CHAIR: Okay. Thank you very much.

GARY ROYCE EDWARD VOSS was called.

THE CHAIR: Welcome to the Planning and Environment Committee. You should understand that these hearings are legal proceedings of the Legislative Assembly protected by parliamentary privilege. That gives you certain protections but also certain responsibilities. It means you are protected from certain legal actions such as being sued for defamation for what you say. It is a public hearing. It also means you have responsibility to tell the committee the truth. Giving false or misleading evidence will be treated by the Assembly as a serious matter. Thank you. Could you identify yourself for Hansard?

Mr Voss: My name is Gary Voss. I am General Manager Commercial with ActewAGL. I would like to offer apologies on behalf of my CEO, John Mackay, who had a longstanding arrangement to deliver a speech of some import. He apologises for his inability to attend.

THE CHAIR: The committee wanted to explore renewable energy, which now has some public currency, and look at where Actew is going in the age of contestability in relation to encouraging energy efficiency. You gave a presentation to a seminar of this committee about 10 months ago, and we are in the process of finalising the first of a series of reports to get an update of where Actew is. Wind energy and energy efficiency have some public currency now. Can you touch on the area of developing some relationships under the solarisation proposal, which was put forward at the committee inquiry in October?

Mr Voss: The reduction of energy use in the home and business was the first of the three platforms I outlined in my presentation. The second was making the energy we have to use the most appropriate form of energy. The third was, if we have to use electricity, that it be to the extent possible from predominantly renewable sources. The most significant approach to the reduction of energy use in the home and business that we can encourage is to offset energy use with things like solar electricity generation and solar hot water systems, apart from all the other things we encourage through our various publications, like just reducing energy use and shorter showers.

At the moment have two programs under way. One is a program to encourage the use of photovoltaic energy in the home. We were very close to having what we thought was a very exciting program in place when the AGO pulled 50 per cent of the rebate for domestic photovoltaics. That put a pretty big dent in our capacity to make the offers we were going to make.

THE CHAIR: Sorry. When did the AGO do that?

Mr Voss: Early this year. I will have to check the dates. The AGO took the maximum rebate for a photovoltaic system from $7,500 to around $4,000, which meant that, instead of paying a little over $10,000, maybe $12,000, for an installed system, people are now paying $15,000 and $16,000. That makes much harder what was already quite a hard ask of getting people to put this on their roofs.

MRS CROSS: Funny that didn't come up in estimates.

Mr Voss: It is a federal program. Along with that, they also restricted the number of rebates they were going to give out, but that restriction has now come off and has been replaced, I understand, with a reduction in the maximum rebate. That has made it rather hard and left us less scope to have really exciting initiatives. The initiatives we do have in place reward people who install photovoltaics with a high level of rebate on their electricity bill. We implement what is called "net metering": only charging people for the energy they actually take off the grid.

THE CHAIR: You don't buy what they put into the grid?

Mr Voss: No, we don't buy what they put into the grid. Part of this more all-encompassing proposition that we were working out was recognising the value of the green energy they produced. With the change in the rebate structure, it simply became uneconomic to get that across to people. It became very challenging.

THE CHAIR: Why did it become uneconomic? Presumably, because there was less electricity to buy.

Mr Voss: The economics of buyback still make sense, but the bottom line to customers is that they now pay $16,000 or $17,000 for a 1½ kilowatt panel system, and they can't get a sensible return on that money; whereas, if they were paying $12,000 or $13,000, they might be able to get a sensible return. That makes it hard to sell; it's quite a lot of money.

THE CHAIR: I ask this question all the time: how much does 1½ kilowatts produce?

Mr Voss: That produces about 30 to 40 per cent of the energy needs of a typical household. A typical house in the ACT uses about 7½ megawatt hours a year of energy, and these will produce about 2½ megawatt hours a year of energy.

THE CHAIR: I hate it when they translate from kilowatts to megawatts.

Mr Voss: That is 7,500 kilowatts hours and 2,500 kilowatt hours.

THE CHAIR: Yes, okay, I know. How many people in the ACT would have domestic PV cells?

Mr Voss: I am not sure of the precise number but it is in the 10 to 20 region. We had hoped to get that well above 100, but it has become somewhat challenging.

MS DUNDAS: That was one plan you were progressing. You said there were two.

Mr Voss: The second was the solarisation proposal. Since the seminar about 12 months ago, we've been working intensely on the solarisation proposal. We have had a person working full time on that for nine months this year developing the economic model that would underpin solarisation. It has gone through a few iterations. Can I ask whether the committee is across the solarisation proposal? I don't know if Andrew Blakers has been here and outlined it.

THE CHAIR: He made the presentation at that first hearing in October last year. Mrs Cross wasn't a member of the committee at that time, so she may not be entirely up to speed.

Mr Voss: Solarisation is a proposal whereby a third party funds the installation of solar hot water and insulation in a home. Rather than pay an upfront cost, the home owner—or occupier, as the case may be—would pay a charge on their energy account over time, which could be five to seven years, in order to recover the money.

We've been working closely with the solar hot water system people—Solahart in particular—with the insulation people and with a couple of energy consultants around town, one of whom does the government's energy advisory service now. We've also been working with Andrew Blakers' team at ANU. We now understand in some detail the economics that underpin the proposition, and we recognise that it is an extremely challenging proposition to get up.

MS DUNDAS: Why?

MRS CROSS: So it hasn't been implemented yet?

Mr Voss: It hasn't been implemented yet.

MS DUNDAS: Why is it challenging?

Mr Voss: There are a number of reasons it is quite challenging. One is that the economics are very difficult. To recover the cost of the capital, depending on what the particular usage pattern is in the home, may cost more than what the home owner saves in energy. The original proposition of solarisation was that they would pay less.

MS DUNDAS: So instead of the price bills remaining static for five years, they would actually increase.

Mr Voss: Yes. In the bulk of applications you have to increase the bill to put solarisation on.

MRS CROSS: If you work it out over not five years but 20, assuming that most householders will live in a house for 20 years, it will pay itself off in the end.

Mr Voss: Because of the time value of money, once you take it beyond about five or seven years, it is really difficult to make any difference.

MRS CROSS: This is probably a rhetorical question: is it because your organisation is looking at its bottom line—how quickly it can make an adequate profit for its shareholders?

Mr Voss: We haven't assumed ActewAGL or any other organisation will be funding it. We've taken a fairly industry standard return on funds. Because we were seeking to make this a sustainable program, we have to expect that they will get an industry standard return on that money—and we are looking at a very low return. One of the

propositions was that it would be secured through some instrument on the property, so that the government would support the program by making it a fairly secure investment.

MRS CROSS: You've probably also factored in that your profits will be reduced considerably because of your getting involved in such a venture.

Mr Voss: The model looks at the impact on the overall energy equation—including the offsetting of energy network charges—from two points of view. One side of the model looks at it just from the home owners' point of view; the other includes the impact on the community as a whole.

One of the problems is that an electricity network is already constructed out there and needs to be maintained forever, and it costs a certain amount of money to do that. As you'll be aware, our network charges are regulated by the ICRC and taken to the extreme. As the amount of energy used in the network decreases substantially over time, the price per unit naturally then has to be increased to recover the cost of maintaining and operating the network.

You have to factor in the long-term cost of continuing to have the electricity network there; it's not as though the network can be taken away. That's one of our challenges. If the entire population of the ACT reduces its energy consumption, the retail component of the wholesale energy component will reduce, but the community still has to pay for the network to be there. That is factored in. Our retail margins are not part of the equation we've factored into this solarisation.

MRS CROSS: In a business, in return on investment, you factor in not only the maintenance but also the replacement of bits and pieces down the track. You can also write those off—

Mr Voss: Yes, the depreciation.

MRS CROSS: Exactly. Having come from a business background, I don't understand why it is such a challenge when you could factor in the transition. You don't have to eliminate the electricity component completely; you can have a transitionary phase where you write off what you've invested in the previous 10 years and then invest money into looking out for the environment and the consumer, while continuing to make a profit. It's a transitionary thing. Are you looking really long term, or just five to seven years?

Mr Voss: The sort of equation in our modelling at the moment assumes that, in the long term, we have to continue to get sufficient revenue into the electricity network to operate and maintain it and to replace it through the depreciation charge.

MRS CROSS: So you need help from the federal government to subsidise that transitionary period, which would mean just a bit of an increase in taxes. I'm sure most taxpayers would be happy to pay that, given that it's probably an extra cup of coffee a month. Would that help?

Mr Voss: I would leave the issue of taxes to the government. I'd prefer not to comment about that.

MS DUNDAS: To narrow it down a bit—

MRS CROSS: It is a doable thing.

MS DUNDAS: concerns have been raised about one organisation being both the regulator and the supplier of the electricity market. We've broken that down with full retail contestability. How do you, as a corporation, manage that? You're promoting energy and electricity saving initiatives on the one hand, and on the other you're working to the bottom line, based on the amount of electricity you can sell.

Mr Voss: There are a couple of issues. First, we have a whole suite of mandatory obligations as an energy supplier, and we work to exceed all of those mandatory obligations. In the ACT we exceed others very substantially in the amount of green energy we sell. Our green choice program, as you may be aware, is a leading Australian green energy program.

So, as an organisation, we set out not just to meet our minimum obligations but also to do as much as we could to encourage energy savings and green energy consumption—and, indeed, as evidenced by our current wind farm program, to introduce new sources of renewable energy. Our objective as an organisation is to do the absolute most that we can sensibly do to encourage our customers to use green energy and to provide it for their use.

MS DUNDAS: You have a diversification strategy as part of your long-term plan. Without breaching commercial-in-confidence, can you provide us with greater information about where ActewAGL is looking to diversify? You've mentioned wind farms, but what else is there?

Mr Voss: The development of our wind farms satisfies two business needs. One is that we make available to ourselves green energy to sell to our customers—to meet not only our mandatory obligations but also the successful green energy program that we have. We are looking at wind farms in order to have that energy available to us at a price that we can set, rather than being a slave to the market for renewables, which we feel will increase in due course.

We could do that without investing in them. We could just buy the energy from them, as a lot of retailers do. Instead, we've looked at investing in these so that we can diversify our business. We recognise that renewable energy is going to have a very strong influence on the energy market in the future. One of our business drivers in looking at these wind farms is to take an appropriate piece of them.

We certainly do not intend to take all of the risk nor get all the returns on the wind farms. But we do intend to take an appropriate proportion of the equity and generate a return, so that our profits are generated through things other than just selling energy to our own customers. That's one of our significant diversifications. There aren't a lot of others available at the present that are economically viable, and we're not going to do anything that's not sustainable in the long term.

MRS CROSS: What timeframe is this wind farm involvement?

Mr Voss: If we can find appropriate resources, we would expect to be starting to develop a wind farm during next calendar year.

MRS CROSS: For completion by when?

Mr Voss: That depends on the size of the wind farm, but it could well be within 12 months. We're currently looking at three sites, so there may well be a rolling program if we can get them all up over a number of years.

MRS CROSS: In the ACT or around the region?

Mr Voss: Immediately surrounding the ACT.

THE CHAIR: Have you decided that there aren't many areas within the ACT that fit the bill?

Mr Voss: The majority of areas in the ACT that are windy are national park of some description. We clearly do not intend to create more of an environmental deficit than there is benefit to be gained from the wind farm, so we are not seeking to put wind farms in environmentally sensitive areas, nor in areas sensitive to the community. Some two years ago we effectively mapped the entire ACT wind and decided that within the ACT the bulk of the wind was in the mountains. That is an extremely hard ask, so we started looking around at more degraded environments, like the farming environments, around the ACT.

MS DUNDAS: Have the January bushfires changed the modelling in any way, in that you now have land that used to be pine forest? There have been a lot of discussions about what should be done with that land, and I am sure the residents of Duffy would hate to have 12-foot high wind towers next to them. Has that been explored in terms of what were once commercial plantation sites, which are currently empty?

Mr Voss: Yes. Given the impact of the bushfires on the parts of the ACT which are still windy but are not in national park or other sensitive areas, we have revisited the wind map that we did of the ACT to see whether any of those areas that are now, as you say, quite degraded could be used for wind resources. But that is in its earliest days, and we're very sensitive to the community and the environment.

MS DUNDAS: Are you involved in the non-urban study currently looking at what to do with those closed sites?

Mr Voss: We haven't yet put forward a position, because we're still looking at the computer modelling. Indeed, if we find something using the broadscale modelling that may look appropriate, we will then have to get narrow scale analysis done on it. At that point we would raise with all of the relevant units in the government that there may be an opportunity to introduce this idea. But we don't want to jump the gun yet.

THE CHAIR: Touching on something that Mr Hargreaves raised earlier, a bunfight has broken out in Victoria between neighbouring farms over whether or not there should be

wind farms in the area. Do you see as a problem that what might be styled windy is a good idea but is in the wrong place? Are you encountering that?

Mr Voss: We're not encountering that as yet, because we're in the early phases of monitoring. The sites we've selected have been selected specifically so that it doesn't impact on the community or the environment. There is a lot of good media to be had out of these conflicts in Victoria, but a lot of these sites have been chosen for their wind resource, without perhaps adequate consideration of the fact that they're icon tourist sites. In other circumstances of which we're aware, the wind farms were there first and the neighbours have moved in.

There are a bunch of issues in those sites in Victoria and South Australia that we would hope, and have already taken steps, to avoid entirely. We live in this community; we're not arriving and finding a good spot. We live here and nothing could be worse for us, as an organisation, than to get the community mad at us. We're not going to do that.

MRS CROSS: It wouldn't be good for PR.

Mr Voss: It certainly wouldn't be good for the community. So we are going to embark on an intensive community consultation campaign.

MRS CROSS: When you're sitting around a board meeting or a management meeting with the CEO, Mr Mackay—who we have a lot of respect for—and you've got to weigh up the business side—given that you're head of commercial—and the altruistic side, which is the community and the environment, I imagine that there'd be a bit of a conflict there.

Given that you are a business, the commercial would have to win, so how do you prioritise? What time have you given yourselves to address the commercial while addressing the environmental? It isn't easy having to balance, as Roslyn mentioned earlier. There is a conflict there: even though you want to be good corporate citizens, you're in a more difficult position than other businesses that can just donate money to a cause. You provide a product that we're trying to regulate—but not eliminate—in some way because we want to look after the environment.

Mr Voss: ActewAGL's business plan has four clear stakeholders whose interest we are trying to maximise—and this is a publicly available plan. Those stakeholders are our customers, our shareholders, the environment and our community, and they all have equal weighting in our business plans. We do recognise that on occasion there are trade-offs. Doing something in one area may well not be all that easy to accommodate in one of those other areas, but they all have equal weighting. Whenever we're making these decisions—which, as you say, are sometimes quite difficult—we look at the bottom line: the sum of the outcome across all of those stakeholders.

We do an enormous amount in our community. We owe that to our community because they are also, for the most part, our customers and, for the most part, provide the returns to our shareholders. Our environment is treated in much the same way. We look at it holistically and don't just pursue one of those objectives at the expense of all the others.

MRS CROSS: That's very encouraging to hear, so can I then go back to the solarisation proposal—the one that you said was a challenging matter? How long have you set aside to address that challenging matter?

Mr Voss: As evidence of our commitment, shortly after a second presentation on solarisation at the National Museum, which must have been late last year or early this year, we engaged a graduate from the ANU with engineering and finance qualifications. He has been assigned almost solely to that project for nine months, working closely with all the stakeholders I mentioned earlier.

We are at a point now where we understand all the issues. We are working with Andrew Blakers and the ANU at present to work out precisely where to go next. It is likely that the solarisation, as originally envisaged, may well not be achievable in its simplest form. But there are a whole bunch of off-shoot ideas that are coming out of the work that look like they will make commercial sense, and we are starting to work on those now.

MRS CROSS: When do the nine months expire?

Mr Voss: We employed this fellow not long after Andrew Blakers' idea on solarisation was put up. It now being September, he has been working on it for nine or 10 months.

MRS CROSS: Has he got an ongoing contract?

Mr Voss: Yes. We are now exploring lots of different ideas that have emerged from the work he's done.

MRS CROSS: What expertise does the graduate have—postgraduate?

Mr Voss: He is an experienced engineer who recently graduated with a finance postgrad qualification.

THE CHAIR: Can we go back? Excuse me for being dim, but I'm not quite sure what the problem is with the solarisation. You're saying that you can't get a commercial return on the capital invested in five to seven years. Is that right?

MRS CROSS: You said you couldn't cover costs.

Mr Voss: It is a complex model. For quite some number of dwellings an investor would be unable to get a return while reducing the overall energy bill to the customer.

THE CHAIR: So for quite a number of dwellings—

Mr Voss: For the bulk of residential dwellings the bottom line would go up, so they would pay slightly more.

THE CHAIR: Perhaps we should be concentrating not so much on putting solar hot water systems into the mix as on retrofitting to make the houses more energy efficient in other ways. I don't quite understand. Is it about the housing stock?

Mr Voss: No. Essentially, the solarisation model is a good one. That's why we've been working very hard on it. Part of the problem is to make this attractive to the home owners. We have to offer them not only an environmental benefit but also a benefit in real terms. Part of the original attraction was to make it cheaper for people.

Using the original model of solarisation, it is quite challenging to make that cheaper upfront. But a number of options have arisen, which we intend to work on over the next months, that we may be able to get up. They include the timing of when, for example, solar hot water systems are offered. If you time it when someone's existing hot water system fails, it is significantly more attractive than if you just stick it out there and ask people to wheel their old water system down to the tip. The issue is: can we arrange a program so that we can apply this and roll it out through our energy shops so that when normal systems fail we can introduce the solarisation option?

MRS CROSS: How many hot water systems blow a year? Do we have a number? Is it 100, 200 in Canberra?

Mr Voss: No, it's several thousand a year.

MRS CROSS: Okay. Isn't there an incentive there for you, given that you are the primary energy provider, to just have package deals?

Mr Voss: Certainly. That's what we're looking at.

MRS CROSS: I don't understand the problem.

Mr Voss: Part of the problem is the economics to the customer.

MRS CROSS: You said that it's a matter of economics and recovering costs—

THE CHAIR: What you're saying, Mr Voss, is that the original model that Andy Blakers put forward, where the money you save on your energy bill would finance the changes that you make, doesn't stack up.

Mr Voss: Using commercial financing and using your average home, that model doesn't quite stack up.

THE CHAIR: I don't really understand about the average home. You're saying that, by increasing the insulation in a house and taking off and replacing a hot water system, you don't make the energy savings that we thought you would.

Mr Voss: You do make the energy savings, but in some homes the cost of doing that work is more than the energy savings you make. In others it's less.

THE CHAIR: Why?

Mr Voss: Because of the different energy consumption profiles of the home. If someone doesn't use a lot of energy in the first place, they won't be saving a lot of energy. If you have someone who uses an exceptional amount of energy, the solar hot water has to

be heavily boosted. As I say, the model is quite an interesting and complex one, so that there is a band in which it works.

MRS CROSS: Wouldn't you just work on averages?

THE CHAIR: You are working on averages. That means you take into account the people who don't use much and the people who need to have boosting to glory.

MRS CROSS: Exactly, which is why you come into the middle.

Mr Voss: I would like to assure the committee that we are seriously working with the ANU to get something like this up. One of our fundamental platforms is trying to reduce the amount of external energy brought into the home, and this is one of the ways we want to do it.

THE CHAIR: On the subject of replacing the hot water system when it blows, the experience of the COOOL communities people, who were here before you arrived this morning, was that many people who thought they would go out and buy a solar hot water system—that is, cold purchasing: not when the need arose, but because they decided they would do their bit—were plumbers. Retail outlets attempted to actively talk people out of buying solar hot water systems.

MS DUNDAS: The other point was that, when they do blow, the 48-hour turnaround time for replacing them also encouraged plumbers to say, "It's too hard to put solar hot water on in the timeframe of when you want to have your next hot shower. We'll just stick an electric one in." Can you answer those concerns?

Mr Voss: There are a few issues associated with that. I don't actually represent the retail side of our business, but I am able to say that in the next little while a campaign will be launched to encourage people to think about alternatives when they're replacing their electric hot water system. As you say, electric hot water systems blow. A vast number of those electric hot water systems are replaced by plumbers, and we can't manage the behaviour of those plumbers.

MRS CROSS: Speaking from personal experience, some of them say that they get some sort of incentive from ActewAGL for recommending non-solar solutions.

Mr Voss: We're able to control to some extent the behaviour of our ActewAGL retail channel. That is the channel through which our campaigns going forward will be directed to encourage people to think about doing other than simply replacing the electric hot water system.

The first of those campaigns is to make people think about installing the high efficiency gas hot water systems rather than putting the electric back in. As Environment ACT's work has shown, those hot water systems are in fact better overall value for the customer and the environment than a straight electric boosted solar hot water system.

THE CHAIR: What do you mean by high efficiency gas?

Mr Voss: That's typically the instantaneous high efficiency gas hot water system.

THE CHAIR: Doesn't that use a hell of a lot of gas?

Mr Voss: No. Studies done for the government's solar hot water incentive showed that the high efficiency gas hot water systems have an advantage over electric boosted solar hot water systems for both the environment and the customer. They're a lot cheaper to buy. So, one of our programs is to try to get people to switch from electric to that high efficiency gas—

THE CHAIR: Sorry, to use brand names, but is that what you mean by the Infinity?

Mr Voss: The Rinnai Infinity is one of those brands. It is that type of thing.

THE CHAIR: So you don't actually have a storage tank; you just heat the water as it goes by?

Mr Voss: That's correct. That has been independently shown to be advantageous compared to electric boosted.

MS DUNDAS: And it's still water efficient.

Mr Voss: Highly water efficient.

MS DUNDAS: It is why you don't need to use more water and wait for it to heat up.

Mr Voss: You simply replace the hot water system in situ, so you have the same amount of pipe and the same issue of Canberra's freezing cold pipes in the morning needing some heating up. The instantaneous ones have exactly the same issue. Another program, which we kicked off in the bushfire areas with Solahart, was to give people free gas connections and a rebate on their energy bill if they installed a gas boosted solar hot water system in the bushfire areas when they were reconstructing.

That initiative, because the gas boosted solar hot water systems are the most efficient form of hot water currently available at all, we worked with Solahart to deliver that opportunity to people rebuilding the bushfire areas.

THE CHAIR: So what sort of rebate was that?

Mr Voss: We give a $100 rebate on the energy bill as well as the free gas connection.

THE CHAIR: You don't actually get the government rebate because it's a law requirement.

Mr Voss: The government rebate is provided direct to the customer.

THE CHAIR: But does that apply in the bushfire area?

Mr Voss: Yes. ActewAGL, through our retail channel—which is the only channel we have really to touch our customers—is introducing programs that encourage people to think about moving from storage electric to much better environmental solutions, like the

high-efficiency gas or the gas boosted solar. To address an issue that was raised earlier, that is counter to the best interests of our electricity business, which will obviously sell much more electricity for the old-fashioned electric storage hot water systems. We're actually doing things to encourage people to move away from the highest energy using appliances.

THE CHAIR: Anything else? Thank you very much, Mr Voss.

The committee adjourned at 12.32 pm.