State Library of Victoria

GRATTAN Institute

The Policy Pitch – *Fairer pricing for power* - Melbourne 15 July 2014

Australians are paying too much for power. Since 2006 the average household power bill has risen 85 per cent: from $890 to $1660 a year. The prices we pay are also unfair: some people are paying too much, others too little. Electricity networks transport power from generators to our homes and businesses. Like freeways, they are built at a size to keep electricity moving at times of maximum demand – peak hour, in other words. Yet, the price we pay to use networks is the same whatever the time of day or season. It provides little incentive for us to use the network efficiently or for network companies to invest efficiently, so they have to build to meet peak demand and avoid power blackouts. The result is that we all pay more than we should. Even worse, consumers who use more electricity at peak times and less at other times pay less than they should. Other consumers subsidise them by more than $100 a year.

In this Policy Pitch event, Tony Wood, the Energy Program Director from Grattan Institute, and Fran Kelly, the well-known ABC host of RN Breakfast and Insiders, discussed the recently released Grattan report that proposes specific solutions to address the problem.

Speakers: **Tony Wood,** Energy Program Director at Grattan Institute
Fran Kelly, Australian Radio Presenter

BEN CLARK: Good evening everybody, welcome to the State Library of Victoria this evening. My name is Ben Clark and I'm the Director of the Foundation at the Library and it's my pleasure to welcome you here this evening. Our event this evening is being held on the traditional country of the Kula Nation and I wish to acknowledge them as the traditional owners. I would also like to pay my respects to their Elders and to the Elders of other communities who may be here this evening.

It's my great pleasure to welcome you to *The Policy Pitch* presented by the Grattan Institute and the Library. The topic of this evening is *Fairer Pricing for Power*. I would particularly like to welcome and acknowledge John Wylie who's the President and a very committed President he is of the Library; members of the Library Board of Victoria; the speakers, of course, Tony Wood and Fran Kelly; Grattan Institute members; and members of the library's own corporate membership program. I would like to thank and also acknowledge members and friends of the library who are here tonight; they provide critical support for the library to enable us to provide programming over and above the core services of the library.

We are delighted to be partnering with the Grattan Institute to present this series. *The Policy Pitch* brings to the library professionals and public policy makers in the fields of law, health, environment, energy, politics and higher education, as well as new audiences to this incredible institution. We are pleased to observe how engaged you are, our audience, and, indeed, how you have been with the entire series. And now I'm very pleased to welcome this evening's speakers.

Fran Kelly, I suspect many of you know who she is and she's actually requested me to abbreviate her intro. So, of course, she's the presenter of Radio National Breakfast and she's currently in Melbourne presenting ABC TV's programme The Insiders. So welcome back to Melbourne, Fran.

FRAN KELLY: Thank you, it's a pleasure to be here.

BEN CLARKE: Tony Wood is the Energy Program Director at the Grattan Institute and he has a great breadth of experience in the energy sector. He's previously worked at Origin Energy, and that was for 11 years, and was an advisor to the first Garnaut Climate Change Review. Until recently, Tony was also Program Director of Clean Energy Projects at the Clinton Foundation.

Tonight, Fran and Tony are here to discuss the latest Grattan report, *Fairer Pricing for Power*. This report proposes specific solutions to make electricity network pricing fairer and cheaper – love that! Clearly we have a distinguished panel, an impressive expertise in this field, and I look forward to your insights on this evening's topic. Please join me in welcoming both Fran and Tony.

FRAN KELLY: Thanks very much Ben. And thanks everybody for coming, it never ceases to impress me how in Melbourne you can get really big audiences out on a cold winter's night after work. It's fantastic to hear ideas being discussed and fermented. I'm going to interview Tony, as I've done many times on the radio before, but this time in person and then afterwards we will be seeking questions from the floor. So store them up and there'll be plenty of time for questions, and we look forward to that.

Tony, in this latest report the Grattan Institute has really gone on the hunt for the formula to come up with fairer pricing for power. That's the Holy Grail because power bills have been on an incredibly sharp rise in this country, they've gone up 70% in the last five years which is quite phenomenal and people are feeling it. That's a lot of money, but is it unfair and what's unfair about the way power is priced here now?

TONY WOOD: I guess this particular piece of work, Fran, arose from a previous analysis we'd done on the way networks have been priced and the way they've been growing and there were three things that came out of that. One is the way that the regulatory structure puts pressure on the businesses to continue to invest; the way that the businesses get returns under that regulated structure; and the way they – the industry, the business, the regulatory bodies – just didn't see the change in demand, that is demand falling, all meant that we had some interesting problems.

One is the regulatory structure needed to be addressed, and there are things being done both at a state and a federal level and you'd have to be a little optimistic that some of those price increases we've seen in the last four or five years may start to at least ameliorate. And we'll see if they can actually come down a bit, but at least we shouldn't see those same increases. The second thing was if we have built too much then what do we do about that? Who's going to pay for the assets we don't need anymore, or that what we probably didn't need in the first place if they were, as some people have described, gold-plated? And that's a separate piece of work we may come back to because it's quite a tricky problem.

The third thing was the way we're pricing these networks is itself causing a difficulty because we don't have the right structure. And so when you look at 40%-odd, depending on where you are in Australia, of the total electricity bill is in the networks. The way those networks charge for what they do, which is to transport electricity from generators to homes and businesses through wires and poles, is basically causing incentives that are skewed towards the wrong sorts of behaviour. And the example that I'll give in terms of the fairness question is, if you're somebody who puts in place a large air conditioner for example – and this is not an against air conditioning point – but if you're somebody who puts in a large air conditioner you actually may not use that much more electricity, particularly if you only used it at peak times of the day; you come home on a hot day, you stick it on and it draws an awful lot of power. Problem is, when you do that, a lot of other people are doing the same thing, so you get this enormous spike in electricity demand and then it comes down again and so forth.

So what happens is you put a very significant load on that network. The network businesses have been obliged, because of the way they're structured and regulated, to keep building to meet that peak demand - that is to meet the AFL Grand Final day when 110,000 want to get into the stadium. The problem is they don't charge that way, so when this happens the person who has invested in this large air conditioner ends up effectively imposing a significant load on the network which has to be built for, but then it's only used for 10/20/30 hours a year and it's left idle the rest of the time. The question was, and this is a very long answer to your initial question Fran, the question is, is that fair when everybody effectively who isn't necessarily putting in a big air conditioner isn't using electricity that way?

FRAN KELLY: So there are a few elements to that answer. One is the point that we have the gold-plated or all that billions of dollars spent on the poles and wires and a lot of intense increase in that capacity over the last five years because all of those people with big air conditioners are turning them on at once. So to cope with that hour every day for however many weeks a year it is. So the networks had to do that because if they didn't then the grid would be overloaded and we'd have blackouts. So they've done that and then they had to charge all of us for it. What you're looking at here is the way they charge and you've come up with some new ideas on how they could do that more fairly so those people if you'd like, to keep the analogy going, without air conditioners don't pay for all the people with air conditioners.

The first notion you've come up with is a capacity charge. Can you explain what that would be, how that would work?

TONY WOOD: Well, the idea is that instead of being charged for the amount of electricity we put through the wires - which may for some people be reasonably steady over the day and across the year and other people might be very peaky – you actually are charged for the network on the basis of how much of that network you want. That is, if I want to be able to use a lot of electricity for a short period of time, such as at peak times, I should pay for a bigger chunk of the network than somebody who uses maybe the same amount of electricity over the whole year but uses it over a more steady period. So, the idea is that what you'd say to people is – and the companies can do this – look at the way you've used electricity over the last year. I mean, you wouldn't penalise somebody because they had one really bad day.

FRAN KELLY: I was just going to say, how is that fair if the analogy we've talked about, you're having a home wedding and you've got the band playing and you've got the catering ovens on and you've got the lights on and the disco balls and all of that; that's going to be a really big demand for that day. It would be unfair to base your per unit charge on that day, so how do you work out what's fair?

TONY WOOD: Well, then you're trying to balance things because if everybody else was having their party with their band and their etc. on the same day, of course, that would be a problem, but it doesn't work that way, right? Mostly the time is a bit more even than that. So the idea would be to say we'll look at, say, the top five days across the years in which you used the maximum amount of electricity. What were the top five points, average that. That would then become effectively the quarterly charge for your electricity for the next year. And what that would mean is that instead of paying, as I said, for the amount of electricity, you would simply pay a quarter of that amount allocated to everybody evenly based upon that peak demand.

And in addition to that, of course, if you had two people who use exactly the same shape of electricity but one used twice as much as the other, they would still pay twice as much but you'd actually be paying for the size of the pipe, if you like, or the amount of the network that you actually need. It's a bit like the way mobile phones are charged: you pay for the bandwidth of the gigabytes you want to bring down the line. If you spent all your time downloading movies you need a very big pipe; if you only spend a little bit of time on the internet looking at emails, for example, you need a small pipe.

FRAN KELLY: I'm not sure if you've got it, I'm not sure if I've got it. Are you saying then that if we have those at least five high-usage times then our per unit cost across the year for power is higher than somebody who doesn't ever have that kind of peak usage?

TONY WOOD: Yes, basically. So what would happen is those people who do put a large demand on the network would pay more and those who don't would pay less. The network itself would not have any change in the total revenue they collect from all of us.

FRAN KELLY: But if I'm always energy-wise I pay cheaper electricity?

TONY WOOD: Correct. At the moment, say, for example, you're someone who is maybe on low income, pensioner, stay-at-home, whatever, and you're electricity is reasonably flat, so you might use say 6,000kWh a year; if I'm in a house with a couple of kids and my wife and I both work, I might still use 6,000kWh a year but I use it a lot at peak times. Effectively, you are subsidising me at the moment. That's where it's unfair. You're effectively paying for the size of that pipe that I need at peak times. And if we changed it you would pay less and that would be clearly a more fair system, because you're putting less load on the system.

FRAN KELLY: And the benefit of doing that is not just that it's fairer, but also would it take pressure off the grid because we'd all be trying to keep our peak use down to keep our unit charge lower?

TONY WOOD: Over time that's what would happen. We all respond to prices, I mean, the very fact that I mentioned before Fran that we're all using less electricity on average than we were four or five years ago is partly as a result of price.

FRAN KELLY: Because our bills have gone up so much?

TONY WOOD: Yes. Bills have gone up therefore we've found ways of using less electricity. If we had a price signal that says, "Avoid using lots of electricity at peak times" then we would respond to that as well, we would change our behaviour, end result would be not only would it be fairer, but overtime the networks wouldn't have to build as much because we all will be putting less pressure on the network and once we did that, the cost will start to come down. Now, that wouldn't happen overnight, but the first bit would happen overnight. The fairness bit, where people who are being unfairly penalised because they're using even amounts of electricity, they would get that benefit immediately.

FRAN KELLY: There is another – and it goes to that price signal thing – element of your fairer pricing plan called "critical peak pricing". The news headline out of this report says that that could see people paying 700% more for their power at times. How is that fair?

TONY WOOD: Okay, let's take a bit more time on this one because it takes a little bit of unpacking, but once you get it I think it's reasonably clear. And that is that at certain parts of the network and the MCG, again, might be a better example. Really there's only a couple of days when the MCG is absolutely full and on that day, of course, at the MCG, the AFL Grand Final we all know you pay a lot more for a ticket on that day. Well, in some ways what we're talking about is critical peak pricing to do the same thing. The reason this is important is because there are parts of the network which are currently constrained, parts that are not. For the parts that are constrained, under the old system basically the companies would simply meet that constraint by building some more assets and everyone would pay for that.

What we're suggesting – and there are people who have been proposing similar concepts – is that the businesses would be asked by the regulator to demonstrate and will be required to demonstrate that they've thought about other possibilities. So for example, have they thought about introducing critical peak pricing? And the idea of critical peak pricing is to say in that part of the network that's constrained we'll offer what's called a critical peak price. And we know that, as I said, the network is really only used at those peak times, say, within 5% of the absolute peak for only 30 or 40 hours a year and we know that that only occurs over a very small number of days. Depending on where you are in Australia, that peak demand is really only reached even within 5% of that peak maybe 10 days a year.

So the deal would be is that for 355 days of the year you'd be given a cheaper price; for 10 days of the year your price would be higher, but only even then for those peak times of those days. So you would be given that information. In addition to that, ahead of that day – because the companies can't predict 12 months in advance, but they would know within a week because most of this is driven by the weather – you'd be given information. Maybe it would be an SMS message. Maybe it could even be, as they do in France, over the weather forecast the night before. You'd be given information to say, "Tomorrow is a critical peak day and the electricity that you use between, say, 2pm and 8pm will be eight times as much as it normally would be, six to eight times as much". Now that is a very sharp price signal and the reason you do that is because what you're trying to do is give people a really strong incentive to do what they can to reduce their electricity in those time periods.

FRAN KELLY: So, being human, the normal response to that would be, "Okay, between two and eight I'll try not to have the air con as much, I'll run it earlier, I'll run it later, or I'll turn off the washing machine and I won't use the dishwasher until later in the night" and things like that. So to minimise their usage, because every unit they use is seven or eight times more?

You mentioned France, and I think in France this system is called the Red, White & Blue System and on the weather forecast the night before on the telly they say, "Tomorrow is a red day between these hours". Does it work? Has it worked? Have they documented that?

TONY WOOD: It actually has. The interesting thing about this, for those of us who've been used to the way we price electricity in this country up until now, it sounds quite unusual and quite challenging. But in fact, the evidence is that when these sorts of pricing mechanisms are put in place people do respond. And as a result of this in countries like France they've reduced their total peak demand significantly by 10% to 20%. And that means as a result of that the network businesses no longer have to keep investing at the same rate; everyone benefits because that investment's avoided and we all pay lower prices. And that's why you could start to see some slowing down of what we've seen before, as you described, those nasty price increases.

FRAN KELLY: So when you approached this issue, was your goal cheaper power prices or less energy use?

TONY WOOD: We're not trying to penalising people for using energy; what we're trying to give people is the pricing signals under which people would then exercise choices to use energy efficiently and to use the networks efficiently. So if someone wants to go to the Grand Final on that day of the year they'll pay the high price for the ticket; other people will choose to watch it on television or they don't want to watch football anyway. In this particular case, you give people choices. If there are people who do want to run their air conditioner and watch television and run the dishwasher, washing machine, everything else for those days, that's fine. So it's not to stop people exercising choices; it's to actually give people the pricing signals so that the choices they make are not only in their best interests but in the best interests of the whole system. And once they do that, that can only be a good thing, I would suggest.

FRAN KELLY: We do have a few questions in-hand that people have sent in before tonight and I'll go to one of those now which was how can we get greater investment in greater power efficiency? Because I think that is sort of what we're talking about isn't it, taking the pressure off the grid and getting us cheaper and fairer pricing along the way? This is all part of that, in a way?

TONY WOOD: Yes, I think the system we have is inefficient. So what we've been doing as a result of not telling people, "Look, by using electricity the way we have been, responding to the lack of good prices, we've been actually building an inefficient system and we're all paying for that". By sending different pricing signals to people they'd change. And it sounds a bit economic tech-talk in a sense, but we actually do respond to prices and much more so than we respond to pleas to behave better.

FRAN KELLY: So it's an incentive to use less energy, that's what it is, isn't it?

TONY WOOD: In this particular case we're talking about using less of the network. If you use the same amount of energy, say, for example, you still run your washing machine but you run it in the morning -

FRAN KELLY: You use less peak energy?

TONY WOOD: Yes, so you just avoid using it at the peak time. Use less energy at the peak time. And there are lots of things we can do in our lives to change how much peak energy we use.

FRAN KELLY: So to go to that question from the floor, greater investment in greater power efficiency, presumably for this all to work we all need to understand it, therefore we'd need some kind of way of understanding where and how to use our energy. Is that where smart meters come in?

TONY WOOD: Partly indeed and without smarter meters what we're talking about is much more difficult to achieve. In Victoria we've had the experience of smart meters being rolled out. Most of us probably in this room have now what's called a smart meter. Many of us would remember when these things were put in it was done very poorly, it was communicated very badly and, as a result, many people got the wrong idea of what this was all about. In fact, many people were so worried about it that they actually physically stopped the companies putting the meters into their houses. For most people those meters are now in place. Unfortunately, because of the experience, we haven't been using them.

FRAN KELLY: Let me do a straw poll here, who uses their smart meter in their home? Who's got a smart meter in their home? Wow.

TONY WOOD: Everybody knows that anyway. The problem is because the previous government, the Labor government as it was, the program they implemented was very poorly done. We all got very negative about these meters. We spent the money; we're not getting the benefit of them.

FRAN KELLY: But they're still there and they have the capacity to allow the networks, the retailers and us to do what you're talking about?

TONY WOOD: Because now what we can do with those meters, the companies can measure not just how much electricity we use but when we used it. Previously the meter would be read once every three or four months and it would just simply take the difference between today's reading, what it was three months ago, what's the difference, there's your electricity bill. Now you can actually use that much more cleverly. The retailers will be able to use that information to structure pricing arrangements which will be at least as attractive as what I'm talking about and possibly even more so. I mean, what you should get is much greater innovation.

FRAN KELLY: Give me an example of what an innovative retailer might do using the smart meter as it currently exists or in this future that you envisage?

TONY WOOD: There's lots of technology. The meters themselves should only be an enabler of technology. This can sound a little bit spooky, but from next year most air conditioners will be required

to be able to be controlled remotely. That means that you could agree – it wouldn't be imposed upon you – with your power supplier that you would sign up to a deal in which your air conditioner could be what's called "cycled". That is that they could basically turn it off for 15 minutes and you wouldn't even notice because the air temperature in your room and your house wouldn't change hardly at all. As a result, if they did that they would again be able to reduce the load on the network.

So there are things you could do with technology which could – and you could do it yourself. I mean, right now I've got a property a couple of hours from here, I've got a generator and I've got a PV system because it's off the grid. On my iPhone today I can literally check that battery level and turn that generator on if I need to because the sun hasn't been shining; make sure I've got lots of electricity when I arrive. The technology is there, what we haven't been able to do as a result of not using it well is get the benefits of that technology.

FRAN KELLY: And I think with technology – I can't speak for others and I won't – but for myself, I'm not terribly adventurous at getting to understand it. So if it's not super-simple in front of me, I won't use it, but if my retailer is saying to me, "With this technology we can do this" that 15 minute cycle of your air conditioner by remote, so I don't know about, it's happening, I've agreed to it, I've ticked a box: how much significant pressure might that take off the grid and would that actually forestall them needing to build more poles and wires?

TONY WOOD: Again, all of these things would add up. To be able to say that any specific one would generate a particular outcome is a bit less clear, but we do know that from all the trials that have been done in Australia and elsewhere the use of sharper pricing signals and critical peak pricing on average can result in a reduction in peak demand of about 20%, or even more. Now that's pretty significant and it's worth going after.

FRAN KELLY: So why aren't we doing it already, if we know that? On the face of it, I imagine the answer is there are winners and losers, and when you've got losers you've got governments who are reluctant to take steps. Why haven't we done this?

TONY WOOD: I think part of it, we did have that bad experience with the introduction of smart meters in Victoria which people are still recovering from, and I think as we get through the next phase we'll see that maybe these things can help us operate our electricity system a lot more cleverly. I think the political leaders have been very loath to address these issues. And I think to some extent the regulatory structure has been slow. The businesses themselves would say that they've tried a few things, some of which have worked, some of which haven't but, again, the state governments in particular have been very loath to allow them to be more flexible, to allow them to be more innovative. And many people, because of the experience with rising prices, are justifiably suspicious that any of these changes could be for the good. Because most of us, when they see the word "change" they think change is going to be bad, they don't really think that maybe change could actually be good.

So I think it's going to be hard. The technology side of this, the capacity to do it is there now today as a result of the things we're talking about. I think it's going to be a combination of support from the community to say, "Yes, if we can get fairer, cheaper prices we'll go along with this" and then the

energy companies have got to respond to this, the regulatory bodies have got to support it. But I think we're starting to see enough frustration with the high prices we've been paying to say we need to change, and this is one of the changes.

FRAN KELLY: That goes to another question from the floor. The system seems unfair in that companies are benefiting at the expense of consumers, particularly low income consumers. Does the system need to be changed? What might be a new economic model that moves beyond the current grid concept?

TONY WOOD: There are some long term issues as to the way the grid's going to work. I think one of the interesting things about this particular move that we're talking about is that when you look at the data it's actually low income people who are more likely to benefit from the sort of changes we're talking about. So some analysis that was done by the South Australia Council for Social Services, they suggested that if we changed towards the capacity tariff structure we're describing, something like 80% of people on low incomes would benefit immediately without doing anything at all, just it will be automatically fairer. And then about 90% would benefit if they didn't change their behaviour in response to better pricing signals. Now, that doesn't mean there won't be some people -

FRAN KELLY: I was going to say, what about this person who is ill or is elderly, who's at home, has to have the air conditioner on during the hot days because they just can't suffer it or they've got an illness which means they can't, or they're running some kind of equipment because of their illness? They don't really have the opportunity to turn off that equipment or do without the air con?

TONY WOOD: Two things about that. One is if they are in that situation most likely they've got that system on most days, most of those days, most of the summer, for example. So again, they wouldn't have a very peaky load and so they would, again, most likely be people who would be benefiting. But in addition to that, if there are people who are in particular circumstances where a) they're on low incomes or b) they might have some particular problem with their health or whatever that requires them to use electricity in that way you've described Fran, then we're better off targeting that and saying we already have support mechanisms for people who are in difficult circumstances, those people do certainly need to get help to manage these sorts of changes. That, by itself, is not enough to say we shouldn't do this because overwhelmingly most people would benefit, particularly people on low incomes would benefit. For those few people who might be adversely affected, what we need to do is make sure they're protected and they're not adversely affected.

FRAN KELLY: I want to come to questions from the floor in a moment, but just before we do you've mentioned regulatory things and retailers trying a few things. What about solar PV? Because a lot of Australians have now installed solar PV panels, some are making money selling electricity actually back into the grid and, again, a question from the floor, what's the real cost of solar PV compared with alternatives? And how are solar PV users getting an unfair advantage or are they getting an unfair advantage?

TONY WOOD: Again, the devil will be in the detail of how people use a solar PV system and, to some extent, whereabouts in Australia you live. When you think about the way a solar PV system works,

you stick it on the roof of your house and basically during the middle of the day on a bright sunny day, particularly in winter when the temperature is a bit cooler actually, these things produce quite a bit of electricity. Most likely for many people they're at work, so it's sending electricity into the grid and you're being paid for that. Depending again on where you are in Australia, it may not actually reduce the peak quite as much. It could reduce the peak a bit, it may shift it a little, but often by the time people come home from work and school and so on and start really cranking up their electricity demand, the actual PV system is starting to fall away. So as a result of that, you're not getting as good an alignment as you could.

So what's happening is that the person who's put in that PV system, they're reducing their average consumption but, again, they're not necessarily reducing their peak load quite so much. So to some extent those people are also getting a benefit of avoiding a cost for the network which they should be paying for because they're still using most of the peak.

FRAN KELLY: So they still might be using the peak?

TONY WOOD: Correct.

FRAN KELLY: But they're actually getting paid because they're putting money into the grid at the time the grid doesn't really need it?

TONY WOOD: And the savings they've generated are not only based upon the avoided cost of providing the network. They're still using effectively the full capacity of the network that was built for them, but they're not paying for it. Again, that's example of it being unfair. And if you change the way we're talking about now, those people would be given the right incentives to put in – this is not, again, anti-PV – if you were given the right incentives to put in PV you might even put in PV with storage, so at the middle of the day when your system is generating more electricity than you need, put it in batteries rather than sell it to the grid and later in the day you could use it.

FRAN KELLY: But that's not as easy right now as it sounds because the batteries are still pretty expensive to be useful, as I understand it. So the fact is, under the changes you're proposing, the capacity pricing and the critical peak pricing, solar PV users would be losers in the short term?

TONY WOOD: Many would be. Not all, but many. Again, if you've got a system together with your PV system in place, your electricity demand is reasonably flat then it won't be a problem. But you wouldn't be getting the benefit you've been receiving up until now, that is the avoided cost that you've achieved by putting in your PV system would be less and, as a result, you will not see the same benefit from the PV system as you're seeing now. And that I'm sure will both be a surprise and probably annoy people who, in good faith, invested in PV. And that's why the government needs to make sure that when it's communicating something like these changes it needs to be very clear that this is about making the system fairer and in the long term cheaper for everybody, but there will be those who, again, not because they've done something wrong, but because they've responded to the price signals in the past they actually are not paying effectively the full cost of what they've been using.

FRAN KELLY: Okay. Let's go to you now. The two things that Grattan have put up are something called the "capacity charge" and the other is the "critical peak pricing".

AUDIENCE: This morning there was an announcement by one of the major legal firms of the settlement of $600million for a class action against SP AusNet for reputedly defective maintenance of their grid. I gather SP AusNet have paid without acknowledging or accepting that. In addition, we regularly talk about gold-plating the system and we have a system here which connects all the states to allow things like breakdowns in Loy Yang or whatever it is so we actually don't have blackouts very easily. Are we not guilty of trying to have it both ways and complaining about the cost?

FRAN KELLY: It's a good point isn't it, we don't want the blackouts but we don't want to pay the bill it costs to build the capacity so we don't have the blackouts?

TONY WOOD: It's an interesting question because in the early part of the century – which isn't that long ago, of course – particularly in Queensland and New South Wales, where the businesses were still owned by governments, governments allowed the systems to run down a bit and there were brownouts and blackouts in Sydney and Brisbane. As a result, the governments in those states almost went completely the other way and put really high reliability standards on their networks. Effectively they built more than was necessary and now they're paying for it.

So how do you get the right balance between what we want and how much we're going to pay for it? And of course, we all know that if someone says to you, "Are you worried about reliability of electricity?" most of us who haven't seen a blackout for a long time probably aren't much. But if you've just thrown away the entire contents of your fridge then you probably are, and so it's hard to get a reasonable answer from people about how much reliability do you need? Many people will say, "It's got to be 100% reliable" but when you think about that, maybe not. Who needs 100% reliability? Hospitals; some maybe hotels; some major facilities; Google probably -

FRAN KELLY: But that's a bottom line that means we do need it to be 100%? It's not like a freeway is it, where peak hour means you sit in a car park effectively which we can all bear. In a blackout there could be some life or death risks?

TONY WOOD: So some things need to be absolute, they need to be such that they're not going to have that problem. And most people who are in that situation will have those facilities in place because you can't, even today you can't depend on the grid 100%. But we also know, for most of us, that if the power system goes off for half-an-hour in the night the only reason you know about it maybe is your clock stopped, maybe you didn't get your wake-up call in the morning to get to the airport in time.

FRAN KELLY: For me, that's terrible.

TONY WOOD: But otherwise requiring something for most of us to be 100% reliable is a price that almost certainly we wouldn't be prepared to pay, but it's a difficult question to think about because most of us these days think, "Oh, of course we need 100% reliability". Well maybe we don't, not all the

time, and if the system wasn't available for three or four 10 minute periods a year, would we really notice? Most of us, no.

FRAN KELLY: Again, it comes back to the messages we're given really and it's about us all being educated.

AUDIENCE: The biggest mover, in my limited reading of energy, has been efficiency of appliances, particularly household appliances, and industry as well, but also storage. Storage is probably, like PV itself, is going to come down in price and be more applicable. Do you think our regulatory system is set up for people to actually exit the grid?

FRAN KELLY: Is it or should it be, is that what you're asking?

AUDIENCE: Is it? I think it should be, but right now in Western Australia you are mandated, required to join the grid. You have no choice. So a fairer system to me would be allowing you actually to exit the grid.

TONY WOOD: It's becoming for the first time I think a major topic, a question that people had never thought about before, which is whether you should be able to exit the grid. Should you literally no longer have to have wires connected to your house and how would that system work? There are proposals that would allow entire towns to not be connected to the grid, but effectively the township would supply their own electricity, which is almost like towns used to do in Australia in the past with their gas. We used to have local utilities. It's almost going back to the future in a sense in that regard.

The trick about this can sound a little bit theoretical, but it comes to a very fundamental issue and that is these networks were built to supply all of us, our homes and our businesses, with a connection to the grid and they've been built. And the regulator, the government agency, stood in the middle of this and helped to make sure this happened and put pressure on the companies to make sure it happened.

FRAN KELLY: It was a USO really wasn't it?

TONY WOOD: Yes, and so it's been built. The question is, having had that built for us, should we be allowed to walk away from that investment, say, "I don't want it anymore"? It's a bit like you bought your motor car and you're paying it off to a hire purchase company, "Oh, no, I don't think I want it anymore, there you go". Your hire purchase company might say, "Excuse me. That's not part of the deal here". And so the companies who built these networks would have at least an argument that if everybody started disconnecting from the grid the first thing that happens is – I'll give you a simple example. We all know about what's happening with motor car companies. If they stop taking electricity the part of the network that they were paying for is still there, that cost is spread over the rest of us, so everybody else pays for that. If that kept going and people at the household level started disconnecting from the network, everybody else would pay more, the price would go up, more people would be incentivised to disconnect from the network. And this is what's been described as a death spiral for networks.

Could it happen? I think arguably yes. How do you think about? Difficult, because I think there is this sort of implied social contract with these companies in which they built these things because they were expected to. Is that fair? Good question. I don't have an answer to that, but it's certainly one we should be asking. Is this the right arrangement, because maybe we should be allowed people to disconnect, maybe we shouldn't? It's a very good question and I think it's going to be one that needs to be aired a lot more because for the first time it looks like it could be a reality. Now's the time to start having a conversation of the sort you've just raised.

FRAN KELLY: And there are two elements that are I think bringing it to the fore at the moment. One is pricing, the price rises have made people think, "Well, is there gouging going on?" and that's a backlash against the networks and the retailers, but also the whole carbon emissions discussion. Some people would prefer to be a part of a renewable energy network, and I think in the UK there are cooperatives setting up, power cooperatives, renewable energy cooperatives, in villages and towns that are separate to a network. So that's spurring people on to think that way I think. So these two elements are coming into this, they're discussions that are happening right now.

TONY WOOD: Yes, and now's a good time to have it because we didn't do a very good job of managing those smart meters; we didn't do a very good job so far of managing PV; let's start doing a better job of having these discussions now.

AUDIENCE: I was just wondering, when we're thinking about the grid are we confusing two aspects, the fixed cost and the variable cost? The grid owner seems to be in a position where they've made an investment and they're reluctant to realise there are some costs to that investment. So it would be fair enough to say for people who leave the grid, maybe they should be paying something towards the maintenance of the grid. But in a lot of businesses when you make the investment and it's gone wrong or you overcapitalised, you're stuck with it, it's a sunk cost. So that seems to me part of the issue, that they've got enough market power that they can force people to keep paying for their overinvestment, rather than just contributing to the maintenance of that investment.

TONY WOOD: I guess, it's sort of a follow-on from the earlier question and that is that if you look at the generating side of the electricity industry, they've also borne the consequences of falling electricity consumption and, to some extent, the fact we've pushed in a lot of renewable energy through the Renewable Energy Target. So the consequence of that is their shareholders and those companies are wearing the brunt of that and the reason that makes sense is because they work in a competitive market and they, in theory, take higher risks, they accept higher risks, but they also expect to get higher returns. That's the deal, if you like. The deal for the network regulator businesses was that in exchange for taking for lower risk they would get lower returns. So that should be the deal. So if they are getting lower returns in exchange for lower risk, then it would seem unfair to them to suddenly say, "Well, guess what? We now want you to take all that risk that you didn't take. We now expect you to pay for the fact that people are using less electricity".

Now, that's not an entirely satisfactory answer in the long term. What I just said is probably theoretically true and you can think about it as being well, okay, maybe that sort of makes sense. But in addition to that, these companies also did build as much as they did and someone has to pay for

that. Should it be consumers? I think over time consumers, and therefore politicians, are going to say, "Well this is no longer acceptable". At some point we're going to have to bite the bullet and someone is going to have to think about writing off the value of these assets. Should governments pay for it? Should the consumers continue to pay for it? Or should the companies – and remember some of these companies are government-owned as well, not in Victoria but elsewhere – should they pay for it? That's a very important question. It's one of the ones we raised in our previous report. It needs some careful thinking because I don't think the answer is obvious, to be honest.

FRAN KELLY: Is it a bit like managing the transformation between four free-to-air networks, three of them commercial, to the brave new world of new technologies and the government took more than a decade to get that deregulation right and to bring the networks with them, because suddenly, the value of their networks are worth so much less in this world where we can access TV from everywhere?

TONY WOOD: Yes.

AUDIENCE: Tony, I'm interested, you haven't actually covered the solar aspect yet. It would seem to me there's an analogous thing happening there where, for example, I just heard today that Simply Energy are charging people extra if they have solar, so they're being asked to pay an extra component towards the network because they're not using as much on the rate side of things. Is there a complementary argument to what you're saying about higher charging for the rate of use to pay solar people more because they're a) providing the power right at the point of source, not needing much of the distribution and b) providing it at the very peak time in general where they're saving extra generation capacity and, of course, the distribution capacity?

TONY WOOD: I think the answer to that is at least partially yes. Part of the reason is because it's not always true that the solar PV system is producing electricity at the peak. And in fact there's an interesting argument as to whether you should have your solar PV system facing north in Victoria to get the maximum electricity or facing west to get the electricity when you really want it, which is when the sun's going down.

FRAN KELLY: Is that right?

TONY WOOD: Oh, yes. So that needs to be thought about. And if electricity was priced at different levels at different times of the day it would actually give PV owners more of an incentive to make sure that their PV system was producing more electricity at the peak time of the day. And, in addition to that, I suspect already you could afford some degree of storage so that instead of therefore selling electricity back to the retailer or back to the grid and you're worrying about this whole question of the transport through the grid, if you then could keep that electricity within your house and use it yourself later in the day when the price is very high, that would benefit you much more significantly. So it would start to send much better pricing signals I think.

FRAN KELLY: I don't know a lot about this area so maybe this is obvious, but did you say that some solar PV clients are being asked to pay more because they're not using so much?

AUDIENCE: That's what I read this this afternoon. Simply Energy are charging 14c a day.

TONY WOOD: I heard about that, I'm told one company is asking that. I don't know anything more about it. If anybody else does they may be able to enlighten you. It's not one that I am familiar with, although I have been told that was a proposal made by one of the companies today.

AUDIENCE: In Queensland we know they're paying zero for a feed-in.

TONY WOOD: Right. The other issue that arises, and again I made the comment that we haven't done a great job of managing PV and when I say "we", I mean in total no-one saw how quickly people would take up PV. There are over a million homes in Australia now that have got PV on the roof.

FRAN KELLY: And this government has still got a policy of 2million homes.

TONY WOOD: Yes, so that's a lot. The fourth biggest generator in Queensland is PV.

FRAN KELLY: They've still got it; I didn't say it was going to happen.

TONY WOOD: Well, I wouldn't bet on anything the way things are happening in Canberra at the moment. I mean, what happened this afternoon I don't even know yet. But I think the interesting question is in some parts of the network so much PV has been installed and during certain times of the day in summer there's so much electricity being generated it's more than the grid can almost cope with. And so they're almost saying, "Wait a second, that wasn't part of the deal. We're either not going to pay you for that electricity" or "We're going to charge you for producing electricity that way and effectively disrupting the network". Now, there are ways of managing that but all that's happened is in some ways the enthusiasm with which people have taken up PV has out-sped the capacity of the system behind it to cope with it.

I am sure that we can adjust to that, but it's not going to happen overnight and we'll see the sort of clunky arrangements that you just described where you say, "Wait a sec, that seems crazy" but when you think about, "Oh, that isn't what we thought was going to happen, we need to think about". So now's the time to be having much more extensive discussion, particularly with the regulatory bodies and the companies as well, to try and get a better system because it hasn't coped very well with the very rapid uptake of PV and, at the same time, the fact that PV costs have come down quite significantly over the last three or four years.

AUDIENCE: I've actually got a solar company. A lot of my customers are complaining about how much their price varies between before they get solar and then when they get solar, and I do have solar at my holiday house down in Rye as well and I've actually personally experienced this. Before solar I was getting charged 18c, when I got solar I got charged 45c per kW. Now, I think that's like that critical pricing already happening here in Melbourne already.

FRAN KELLY: Can I just ask, were you advised that that change had happened because you'd got solar or did it just happen?

AUDIENCE: Well, it was told to me. After I connected to the grid with solar then they said to me, "You're in this area, you're going to pay extra for the power when you need it and the sun's gone down". So, from 18c up to 45c overnight is ridiculous. But in saying that, I left that company, went to another company and they've dropped it down to 37c, but it's the same wires, it's the same poles. So how can there be such a difference in price?

FRAN KELLY: Tony.

TONY WOOD: The first thing I would have done is certainly shopped around, as you obviously did. And I know that this has been a very difficult area to be able to say to people before you put in solar make sure you're well-informed and really understand what's going to change. It isn't just going to be putting a PV on the roof, the fact that you'll be using less electricity. The way you're charged may very well change and you'd better understand that. And different retailers handle that in different ways. It is not simple and I know myself, from personal experience and even someone who's worked in the industry, getting someone to explain it to me is really tricky. And to be able to look at what I thought was going to happen when I put in PV and how much I might have saved to justify that investment, and what I actually saved is very hard to find in many cases. All I can really say is buyer beware because I think this is still a very complex area -

FRAN KELLY: But is it gouging or is it justified?

TONY WOOD: I don't know, to be honest. I'd suggest that you should be looking to have that example explained more clearly by your provider because it sounds a bit strange and I'd be happy to talk to you further in detail. But in the service of it, to be able to say whether it's fair or whether it's unfair is a bit tricky. It certainly sounds like it was surprising from your perspective and surprises are not good. So I think one of the challenges is people in many cases in good faith put PV on their roof, thought they were going to get something and ended up with something else. Were they told? Should they have been told? Did someone tell them? I think the evidence is that they weren't well-informed. Should they have asked more questions? Maybe in hindsight, but sometimes we don't work that way, we assume people are going to do certain things to us and they do different things.

But I do think that those examples – I've heard many of them – do mean that people need to ask more questions about what's going to happen with PV, because I think some of the things are probably okay but if you'd known about them beforehand would you have then gone ahead with your investment in PV? I don't know.

AUDIENCE: I just wanted to add that the person who asked the last question has a product that partly solves the problem; he's got a solar air conditioner that's run by panels. So in one sense the technology is coming to take away part of this problem with the peak. It actually exists.

FRAN KELLY: Okay. And, as Tony Jones would say, I'm going to take that as a comment. But thank you very much, that is interesting.

AUDIENCE: My question actually feeds from something Fran said when she said I'm not necessarily totally across how electricity bills work, I don't want it to be too complicated and I don't necessarily

understand it. And I think that's probably quite typical of a lot of Australians, it's complicated. When you look at these suggestions, particularly the pricing models you've proposed, did you take into account how easy they are to explain to a public who isn't necessarily that across how all this works? And if you were to think of that as being quite important, something you can explain to the public, did you think about just a simple, say, time of use tariff where you just have a couple of different tariffs, and one is the air conditioning summer peaks, which would not be as efficient as what you've proposed but might be something you can explain and people can follow and they can understand? Because one of the pricing models you put forward I couldn't really follow it myself, so perhaps a lot of other people might be confused as well.

FRAN KELLY: With great respect Tony, I think you've done a great job of explaining it, but I take the point, yes!

TONY WOOD: I have to say, when we write these reports, one of the guys internally in Grattan who helps us try and turn our language into something that's readable said this was one of most complicated reports he'd written in his time at Grattan. So that reflects that this is a complex issue and I think communicating it is fundamental, because if it's not communicated well then people won't be able to deal with it. In the UK recently they had to try and reduce the number of tariffs from thousands of pricing alternatives to something simpler.

Most of us are familiar with peak and off-peak hot water. It was introduced many years ago, the simple idea is that the meter doesn't read every half-hour, half the meter basically is spinning around during the daytime and half the meter is spinning around at night-time more or less, and so it can be then set so that you pay a little less at night-time, put your hot water on at that time and away you go, that works nicely. This is an extension of that and I think if people could understand that it's a bit like your mobile phone. One thing, by the way, putting in a capacity-based charge would not require people to do anything initially necessarily at all and people who are currently subsidising others would benefit immediately without doing anything. So it doesn't necessarily need change to achieve some of the benefits we're talking about, that's the first thing.

The second thing then is to look to start to communicate a program, if people are using less electricity at peak times they would save money and here's the structure that is offered. And the critical peak pricing, interestingly, is in some ways a bit easier to explain to many people, that idea of having this sort of Red, White & Blue tariff or giving people the choice the day before. I quite like the idea that, for example, if everybody in this room knew that tomorrow is going to be a particularly cold day and is going to be more expensive they might do something about it, but you've got to know the day beforehand. Under the current system you get an electricity bill, three months ago you're told you used a lot of electricity. That's no good to anybody. The system we're proposing for critical peak pricing would be well-publicised the day before, it might be the way they do it – if you ever have electricity go off in your suburb these days you get a text message from the network company, like City Power for example, who will tell you that this has happened and how long it's going to take to restore power. They can do that. Same thing could happen here or alternatively it could be on the weather forecast the night before, "Tomorrow's one of these peak days, be aware, do what you can to try and reduce your electricity consumption at the peak time".

I think if that was well communicated consistently over a period of time people would get it and if it was going to save them money, they would get it even more so because people are pretty smart really when it comes to saving money.

FRAN KELLY: And witness the amount we've dropped our energy use in response to high prices.

AUDIENCE: Under the current model there is no particular disincentive to peak power consumption and the unintended consequence is people are leaving the grid because power prices are high and we have massive cross-subsidies. Under the model that you propose, I can see the issue that there's no disincentive to consuming power at low consumption periods. So I'm interested to understand what you think are the negative aspects of this proposal?

TONY WOOD: You're right, there are two things here. One is the way we've got incentives or otherwise to use the grid, which is largely a fixed cost. If you got that right there is still this question of are we just using too much electricity? If you now run all these appliances but just run them at different times of the day that isn't necessarily a good thing in other ways.

FRAN KELLY: But that's a different report, right?

TONY WOOD: Yes, wait for it; this is next year's report. But a good example is simply that we don't right now – and depending on when the Carbon Tax is repealed – we won't have a climate change policy in this country and we will not be pricing into the cost of electricity the environmental consequences of the way we use electricity. Now, if we did that people will then have a different incentive to use, in particular, electricity that produces greenhouse gas emissions. So I think getting prices right starts to give people the right signals for what they want to do, use less, if it saves you money I think people will. So I do think people have reduced their electricity consumption already as a result of high prices.

FRAN KELLY: Just on that, because the carbon price hasn't been repealed yet but it's gone through the Reps and the deal's done with the Palmer United Party and it will happen this week almost certainly. That means the power bills will come off 7%, 9% if we believe what we're told. Does that mean power consumption is likely to rise?

TONY WOOD: That's a really good question. To be honest with you, I'm not sure because the Carbon Tax is actually a relatively small part of the electricity bill.

FRAN KELLY: Well, we're told 9%.

TONY WOOD: How much has that added? We'll find out because if electricity consumption actually turns around and starts going up again, the answer to your question Fran would be yes.

FRAN KELLY: Okay.

AUDIENCE: Google recently acquired a company called Nest for a large amount of money. A lot of people believe this to be a play in the demand response industry; they make intelligent thermostats.

Do you think anything that you've proposed in your report would encourage the demand response industry in Australia? And, secondly, how do you think Australians would feel if Google turned off their air conditioner?

FRAN KELLY: Google is our friend.

TONY WOOD: I think that the important thing is that the technologies that are available to enable companies to offer us solutions should not be precluded by the regulatory structure and I think one of the challenges is that the regulatory structure hasn't impeded them, but it certainly hasn't made it easy. And so as people make choices, as the technology is available, whether it's Google or whether it's anybody else. I mean, you can buy for $20,000 a piece of equipment made by Bosch, stick it in the corner of your house and it will manage your electricity and gas consumption for you automatically and it'll optimise the whole bloody thing. Now, $20,000 is more than most people are going to pay today, but it'll come down over time.

So I would just suggest that people like Google are looking at the opportunities here for smarter ways of using electricity and gas and so forth and I would encourage them to do that, and the more of that the better. And I think people will adopt them and I think it's a good thing.

FRAN KELLY: And just to wrap that up, because I think that was a great place to end. Really what you're telling us is that the companies, the networks and the retailers already have the ideas, they know what needs to be done to take the power off the grid, but they're making a lot of money as it is. They need to be educating the regulator and telling the regulator, it shouldn't be just sitting there waiting for the regulator to catch up, right?

TONY WOOD: No, it's got to be everybody. The governments have to be involved, the federal government because it manages the COAG Energy Council; the state governments because state governments have played in this sector for a long time and are very loath to get out of it. The companies have to be involved and they have to make sure to give the regulators the powers, but also then insist that the regulator use those powers to generate the sort of benefits that we need which are, again, I'd comeback to is we should be seeing fairer and cheaper electricity prices.

FRAN KELLY: And Tony, I'd like to thank you and Grattan for giving us this report which means you're giving it to those politicians so they can't pretend they don't know that there are ways through this, because we all now know that there are some ways to start. And that's the great benefit of a think tank like Grattan or the other think tanks in this country who actually do the policy work and come up and put it up in lights so we all have to start talking about it. It's great. Thank you so much and thank you for joining us.

TONY WOOD: On behalf of Grattan, thank you to the State Library, we have a very good partnership with the library, we now run *Policy Pitch* on a regular basis just about every month, one of these events. I encourage you to come to the next ones. Many of you I'm sure get our information through our website and, finally, can I ask you to join me in thanking Fran Kelly for joining us this evening, thanks Fran.

END OF RECORDING