



**Australian Government**  
**Productivity Commission**

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**PRODUCTIVITY COMMISSION**

**INQUIRY INTO ELECTRICITY NETWORK REGULATORY  
FRAMEWORKS**

**MR P. WEICKHARDT, Presiding Commissioner**  
**DR W. CRAIK, Commissioner**

**TRANSCRIPT OF PROCEEDINGS**

**AT CANBERRA ON MONDAY, 10 DECEMBER 2012, AT 11.02 AM**

**Continued from 6/12/12**

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**MR WEICKHARDT:** Good morning, ladies and gentlemen. Welcome to the public hearings for the Productivity Commission inquiry into electricity network regulatory frameworks following the release of a draft report in October 2012. My name is Philip Weickhardt, I'm the presiding commissioner on this inquiry, and my fellow commissioner is Dr Wendy Craik.

The purpose of this round of hearings is to facilitate public scrutiny of the commission's work and to get comment and feedback on the draft report. Following this hearing in Canberra, we will be working towards completing a final report to government in April 2013, having considered all the evidence presented at the hearings, in submissions, as well as in other informal discussions.

Participants in the inquiry will automatically receive a copy of the final report once released by government which may be up to 25 parliamentary sitting days after completion. We like to conduct all hearings in a reasonably informal manner but I remind participants that a full transcript is being taken. For this reason, comments from the floor cannot be taken but at the end of the proceedings for the day, I will provide an opportunity for any persons wishing to do so to make a brief presentation. Participants are not required to take an oath but should be truthful in their remarks. Participants are welcome to comment on the issues raised in other submissions. A transcript will be made available to participants and will be available from the commission's web site following the hearings. Submissions are also available on the web site.

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I'd now like to welcome our first participants, the Australian Services Union. If you could just give your name and capacity in which you're appearing and then perhaps make some brief introductory remarks. Thank you for your submission.

**MR McLEAN (ASU):** Thank you. My name is Greg McLean. I'm the assistant national secretary of the Australian Services Union; that means I work in the national office of the organisation but I'm the officer that's reasonable for coordinating our public sector interests across the country, including of course the electricity industry.

I would like to jump straight into some comments on part of the report if that's satisfactory. We have been involved in the electricity and generation industry since,

believe it or not, about 1897. Our organisation has been representing employees involved in the electricity industry back in the days of street lighting in Sydney City Council and its first sale on to the general public and also similar timelines for I think Tamworth street lighting, so we've followed that debate and discussion all the way through from its local government perspective right through to the reforms that saw corporatisation take place in most of the states by way of amalgamation and mergers of what were previously known as county councils; our involvement in publications of a book called Power and the Future in the early 1990s, and these days we operate in all states of Australia, representing members in the electricity industry, including privatised and non-privatised industries across the country.

We do hold particular points with a number of issues in the report, including our concerns around public sector ownership. I note that whilst it was reported in the media that your publication, Electricity Network Regulatory Frameworks, was reported in the media as promoting privatisation of state-owned businesses, it in fact does not suggest one of two alternatives in that model which is the privatisation or, if not, governance should be improved and non-commercial objectives and policies should be removed.

There are a couple of points with that and I notice that there are some extensive regulations or regulatory frameworks published by the OECD in respect of public sector versus private sector competition. The original forms of electricity reform that took place in this country under the market development and grid and network expansions, that took electricity businesses beyond their geographical footprints at a local level and created a national market, a national transmission system, and those reforms that were promoted as part of national competition policies by the Hawke and Keating governments at the time saw state-owned corporations involve themselves in competition one against the other. That allowed for private sector participants to compete on what was previously a government playing field, if I could use that term.

We've also been fortunate enough to follow a lot of that reform through in different states. I have myself spent a period of time as a director on one of those state-owned corporations for some years. I see in particular areas such as the states of New South Wales and Queensland where these network businesses have an incredibly important role in maintaining local plant and equipment in towns, where they retain large-scale employment opportunities for a raft of people of different educational backgrounds and having the ability to have a decentralised network with operational regimes in a variety of country towns might seem to some people to be inefficient, but at the times of bushfire, major catastrophes, extensive storms, the ability to have those towns have their own equipment and plant to get on with the job of repairing the network is quite important. So regional locations, whilst they may seem on paper to some not to be the most favourable economically, provide a number of benefits to those towns both in employment, both in money spin,

secondary jobs, the maintenance of schools, hospitals and other services that are in those towns.

Most of the larger distribution companies that have regional networks - and I talk about Queensland and New South Wales here in particular - have solid regimes in place for when storms, floods and other things take place where they know where to actually go; it's to the stage almost where to park the equipment on what hill so that it can be ready to repair. Of course the restoration of supply is incredibly important post bushfires and the amounts of poles that some of these poles and wires businesses own are well in the millions. They're quite extensive in their operations, and having a workforce that's based in a lot of those towns is quite important. I think the best way to ensure that from our perspective is by government ownership and continued regimes where a lot of these public services are held to account by citizens in the terms of state elections and making sure these businesses develop and maintain services to the community.

Of course there has been some large-scale discussion in recent years around what might be called the gold plating of the system. Some of the distribution companies prior to the corporatisation entities created did go for gold plating, and some of the stories of some of the previous county councils would quite shock you if you knew some of the things that went on insofar as these being luxury sort of organisations where they often concentrated a little bit more on some of the convenience of office rather than some of the benefits to the community.

The commercial focus that was taken by way of corporatisation I think has been a great asset to those businesses because it's given them a different direction and a different focus. It has meant that the CEOs and senior officers of those companies have been paid higher salaries than they would have been in the past. However, they're much lower than what one would expect in the private sector for comparable employment opportunities.

State-owned corporations are also required to balance out environmental issues, balance out community concerns and balance out the delivery of services by way of laying out their networks and poles businesses. Indeed, during the era of previous state government in New South Wales, I think for the record it was Minister Sartor who had an idea of ensuring the same level of supply of electricity would be guaranteed to regional country people, the same as it was in the Sydney city. For instance, if you're not familiar, the Sydney city basin, most of its substations are all linked in almost a circular or a pattern formation so that technically you could lose two or three major substations in Sydney and not have an effect on supply. Clearly this is not possible with those long-stretched lines that stretch out across the state unless you go into massive duplication. So that view was much, much stronger about spending money on the system during that particular era of government, but it did change under new ministers without a change in

government.

The current regulatory costs that are faced with the building of the electricity system, I think probably a couple of points: (1) state-owned governments have made a fair amount of money out of some of these enterprises as seeking a return on their assets. I think the normal commercial thing is about 7 per cent or so, and I think that's what they secured in South Australia during the privatisation exercise there. There's usually a minimum percentage there. Of course they do pay tax equivalents. As you know, they're not taxed entities. They do have to pay a tax equivalent that is no longer managed by themselves but is managed by the Taxation Department, so there are some constraints on them there as well.

I think all were surprised when Energy Australia lodged its appeal for its first rounds of cost determination by the AER and then saw a second regime take place. I think others also followed suit and we saw the amounts of money that were then on the table which were quite large to say the least. My sort of concern at the time was where do you get the skills in labour to spend that amount of money? It's a very good idea to put a huge amount of money in public sector or private sector infrastructure but you've also got to have the people that are going to be able to do the jobs, and the market forces that have been shown recently in the mining industry is sort of an example of what can happen with wages when people are really needed and there's a fairly strong market, so to speak. So they can be important balancing issues.

The employees in the electricity industry have done reasonably well in comparison to other industries in salaries and conditions of employment changes but there's also been massive changes in skill levels, massive investments in the industry and a whole change in regime approaching how those workforces are managed, and they have contributed significantly to national competition reform over the last 20 or more years in the industry. So I think there's been some wins there for those people as well. Staffing levels have moved up and down and there was a period of time where people were concerned about the staffing levels and that saw large increases in apprentice numbers and employment numbers. If you have a look at our submission, I think we've made reference to the number of employees on an apprenticeship table, comparing public sector versus private sector on page 5 and 6 of our report.

We also took the opportunity in our report to include an additional recent submission we had prepared by Dr Phil Toner which, for some of the work that we've done in the past and some of the avenues that we've concentrated on as a union movement, this particular report that was commissioned by ourselves and the ETU, I think is actually probably one of the better ones I've seen for a while that addresses a number of the points around some of the financial aspects of their operations. So they're important areas for us to look at.

We've been before this commission before on a number of other opportunities where it's been possible to place more views on reforms and changes. We've also noted that the government's white paper first published or the very first draft of it, the preliminary draft when it was launched in December 2011, set out a series of possible points with that, and I know that after that date, we did place a white paper submission, like a number of other organisations did, again about employment, regional employment, ownership models and such. We also saw recently the government announce its final white paper position which does not call for privatisation of state-owned assets. Recently in the organisation was that concern about mixed reports from the government - or from the media rather than the government, but mixed reports from the media on ownership models that we sought counsel and advice from the Office of Prime Minister, and it received a comprehensive letter from her, outlining that the government's view is not to support privatisation, these are matters for state governments and the view of the government is not one of pursuing privatisation.

When I attended the first round-table distributor on the energy white paper some three years ago in Sydney, it was a really healthy discussion about ownership models and investment in the industry. There was very, very little discussion except for a representative I think of AGL who attended that did speak on privatisation, but I didn't get a chance to ask him too many questions. He wasn't there all day. But the rest of them around the table, including those supporting green sort of movements and alternate discussion on power supplies also had the same view that it's about the operation of the network, not so much the ownership models.

We do know, through the charts that we've looked at in the past, including in our submission that the public sector entities have been far more stronger in their employment of apprentices and trainees and preparing themselves for the future and of course those regional bases that are incredibly important models, and I would cite the sort of regional work that has been done by Ergon in northern Queensland and the work that's been done by what's now called Essential Energy in its regional based employment and the investments it's made in towns and countrysides to ensure supply or restoration of supply within adequate and/or best times. I think if you look closely at restoration times of supply - and I don't know how much of this is published - have certainly increased dramatically in this industry and the industry continues to require huge technical investment in advances.

We all know the electricity industry was very much a small bikkies affair until someone invented the television set and that changed the whole way in which this industry operates. It was the first appliance that ever needed a reliable and consistent supply of electricity and from there, we know where we are today. There are mixed models in ownership across the world. We work closely with other unions in other countries that work within the electricity industry and there are very strong views on public sector ownership across a number of countries these days. There's the mixed

ownership model that takes place in the US, there's of course the public ownership model in France, and then there's of course the UK model. But I think there's also some other questions about preparing for the future and with such places as the UK being a private-run model and now a net importer of electricity from France. I think there's also a question about government planning and government investment in these industries.

Insofar as where we are at the moment with the regulator's tariffs that it requires for supply and the amount of money that the distributors are going to recover, I don't know what's going to happen when the five-year cycle is completed because that was what they originally got their large sums of money for, so to speak. If that's no longer required, do the prices go down? What would have happened if the current regulatory period had have been extended from five to 10 to 15 years? This is the first time we've had a national regulator do the job, so to speak. Whilst the national regulator has been responsible for transmission charges across state borders and within state jurisdictions, this is the first time it's done the distribution industry, so I think there's a bit of a learning curve there as well, and of course there are the standards that are set by state governments that ultimately are the determinator for the AER. So there certainly is a need for a mixed bag response and I think there's a need for some consideration of technologies that give stand-alone capacity.

I noticed last week there was a reference by the prime minister in her statements about turning off some large-scale generation to put more electricity back into the system during peak periods. That's done now by a number of organisations. I think Westfield shopping centres and others lower their temperatures a little bit and save a bit. There are large-scale manufacturers that have the ability to turn their loads off and I see these as contributing to those four or five days per year.

However, as we're a country of growing population, numerical numbers, a country where living standards are growing dramatically and a country where our ageing population is growing and expecting a lot more out of life, we do need an electricity system that is going to be reliable and at a particular level. I recently received an email from one of our members working in - - -

**MR WEICKHARDT:** Sorry to interrupt you, but we have to finish at 11.30.

**MR McLEAN (ASU):** My apologies. I didn't realise I'd talked that long. That will be fine. Sorry about that.

**MR WEICKHARDT:** That's all right.

**MR McLEAN (ASU):** I honestly didn't realise I'd been talking for so long.



**MR WEICKHARDT:** Thank you. It's a useful introduction. Perhaps I'll just clarify a couple of things. First of all, we did on balance recommend privatisation of the networks but said that if governments did not accept that - and we understand it's their prerogative to make the decision - then there should be certain changes to the way those institutions are governed. We note your comments about the benefits of regional employment and apprenticeships in local communities and all those things. They all have benefits but every benefit tends to have costs and so what we're absolutely determined to do in all our investigations is to try to look at benefits and costs and weigh those two up and make sure that we end up with recommendations to government where the benefits exceed the costs and vice versa.

I guess our assessment was - and looking with every lens we could and every set of references we could - that the private-owned network businesses - and we're not talking about generators here, we're only talking about network businesses - appeared on almost all dimensions we looked at to be run more efficiently than those that were in state government ownership, therefore what we were concerned about was the ultimate cost to consumers.

Given the fact that you say you represent employees in each of the formats in their previous I guess vertically integrated state and the state-owned corporations that have now been corporatised and in the private entities, it would be interesting to hear from you the differences that your members experience in those different formats. How do your members in the privately owned businesses report on what they're experiencing there?

**MR McLEAN (ASU):** I'll look at it two ways. Firstly, there's been a significant change in employment numbers in, say, Victoria compared to other states. A lot of those employment numbers were quite catastrophic when they first started off, if I could use that term. The reform in Victoria was quite devastating, the way it was done. We own, as a union, a block of land in Malvern, I think it is, one of the towns in the valley, and we bought it for \$100,000. The reform in electricity started and its price dropped to \$60,000. Ultimately we ended up selling it for \$40,000. To us, it was an investment in an office that we were going to have there, so that created some obvious concerns.

The New South Wales industry, when it was reformed, also lost significant employment numbers through corporatisation and there was a great turnover in staff that were in senior positions and also age, which created I think a new dimension in the industry. However, the views of our members have to this day been ones that they do prefer the public sector model because they believe it delivers more to the community and there's also a question about how those businesses operate as well.

**MR WEICKHARDT:** Sorry, operate in what way?

**MR McLEAN (ASU):** As I said earlier, a state-owned corporation has got responsibilities to balance out environmental concerns, regional employment and some other government operations, as well as the cost of charges. It's also under a bit of political pressure to make sure there are jobs created in those towns, apprenticeships and employment numbers, whereas in Victoria and South Australia - the South Australian network is quite small compared to New South Wales. The Victorian system is the third largest. Queensland and New South Wales are the larger systems. We believe that the way in which those organisations have been managed has meant better quality outcomes for the communities by way of what's taken place in corporatisation reforms in Queensland and New South Wales.

**DR CRAIK:** Do you believe that the objectives that are kind of community-oriented objectives and employment things that are above and beyond what's absolutely needed to run the electricity network, do you think they should be funded by transparent community service obligations paid for by the taxpayer as a whole as opposed to being built into the electricity charges?

**MR McLEAN (ASU):** A couple of points: yesterday I picked up and read an industry electricity magazine that said that in New South Wales, an indigenous employment award had been won by a particular electricity authority. I'm not aware of the indigenous employment award being run by a private sector company in New South Wales.

**MR WEICKHARDT:** Possibly not in New South Wales, but if you - - -

**DR CRAIK:** WA.

**MR WEICKHARDT:** - - - looked throughout Australia, you would find the biggest employers of indigenous people are the mining industry, almost all of whom are privately owned. I think Rio Tinto is the largest employer of indigenous people in the country.

**MR McLEAN (ASU):** I don't know about that; I think local government might be. Local government is far larger than the mining industry.

**DR CRAIK:** As a whole?

**MR McLEAN (ASU):** Yes, as a whole. The current local government data survey that's been done will show that clearly; it's over 12 per cent of growth in the last three years. 195,000 employees is a pretty big industry. But, yes, I do believe that's the case because I think they need to give back to the communities that they take moneys from. I think people in regional Australia are entitled to the same standard of electricity service as those in city areas. The country areas of electricity service have improved dramatically under the corporatisation model in New South Wales

and Queensland compared to where they were in the old county council models, there's no doubt about that. There's been adjustments in tariffs, but quite literally there were hundreds of tariffs across New South Wales for each different one of the 25 distributors, as there's so many layers of it.

The fact that those distributors could no longer play the games they used to play in the past where they would go and attract business to their local town and new abattoir or whatever by subsidising electricity prices for that abattoir at the expense of the local community, that no longer takes place. There's a market out there. Everybody buys electricity at the same price, no matter where you're located.

**DR CRAIK:** Don't state governments do that now though in some states?

**MR McLEAN (ASU):** Subsidise?

**DR CRAIK:** Yes, subsidise electricity prices. I vaguely recollect something about an aluminium refinery in Victoria.

**MR McLEAN (ASU):** I think there's been a number of - well, that's in a privatised state.

**DR CRAIK:** Yes.

**MR McLEAN (ASU):** I think there was also the question in Victoria about who is paying for the rebuild post the bushfires. The Victorian electricity network I understand is not the private operator; I understand there's huge contributions by the state government as well.

**MR WEICKHARDT:** In terms of the environment, there's some pretty tough state legislation and federal legislation in terms of the environment. Are you suggesting that the private entities don't comply with their environmental obligations under the law or are you saying that the state-owned corporations do more over and above what the law would require in terms of the environment?

**MR McLEAN (ASU):** I think the state governments do more, most definitely. I'm not suggesting the others don't; that would be wrong. But the state government ones do do more I think because they're required to, both in a sort of political sense, there's pressure on the local backbenchers. These entities have to lodge a public report, far more public report details than the private sector does. Public sector reporting regimes are much stronger than the private sector.

**MR WEICKHARDT:** In terms of environmental performance?

**MR McLEAN (ASU):** In general terms, but also in respect of environmental

concerns, there is different legislation in different states that requires different outcomes of course. In some of them, there's a higher standard expected of state-owned corporations and state-owned enterprises to lead the field and create the example, rather than in, say, the private sector ones. The reform and the clean-up of the old power stations like the Ashford power station in New South Wales, that was something that the state-owned corporation was expected to manage for the state government; the fact that Essential Energy supplies and maintains the water services for Broken Hill, because the local council probably can't afford to do it. There are a range of things out there that they do that go above and beyond the call and I think that's because they're seen as a leading community organisation. With a community comes jobs, comes employment, and I would suggest economic growth as well.

**DR CRAIK:** Do you think it's fair enough that that's paid for by the electricity company customers as opposed to taxpayers, you know, paid through the electricity bill as opposed to - - -

**MR McLEAN (ASU):** It's paid for by everybody. The big end of town pays comparable - BHP, Coles, Woolworths, whatever who can afford a little bit more, I suspect - and then the average person pays for the electricity that they use as well.

**DR CRAIK:** They still get an electricity bill.

**MR McLEAN (ASU):** Time-of-use metering is one of those things I think that will help us. My only concern is that I don't want to see people disadvantaged, that they won't use electricity at certain times of the day. But the trials for those electricity time-of-use meters that have been run by Essential Energy across here at Queanbeyan - and also their switching centre, if you haven't been to it, at Queanbeyan, their smart grid location is well worth visiting - Energy Australia has done similar things in Sydney's western suburbs and at Newcastle. The protocols in bidding for electricity to come on to the market such as they have in California - they've used different regimes there where the bidding process is green, is environment, is nuclear, and I think coal is the bottom one on the list. Who is going to pay for the electricity industry meters is another question. The Californian model is the company pays and it's averaged out for the consumer over the life of the meter.

**DR CRAIK:** Do you guys have a view?

**MR McLEAN (ASU):** I think it's not a bad idea if you want to see people embrace it quickly, but there's got to be a way found to do it. They're not cheap to do, but there needs to be both a pricing mechanism and also an encouragement mechanism. Tonight when you go home, you'll put recycling and your paper and your bottles in and you will recycle and you will save your council a lot of money and you will care a lot more for the environment, but you don't get paid a cent for that. So I think

there's also a bit of an education program that's required behind it, as well as financial incentives.

Some of the financial incentive stuff that we saw by a couple of UK power companies a couple of years ago was disgraceful; sending out notifications to parents on how to save electricity by turning off the heating in their homes and sending their children to bed wearing beanies, rugs and jumpers. Now, surely we can do better than that in our society.

**MR WEICKHARDT:** One would hope so. I'm afraid we are out of time, but touching on that subject, someone ultimately does pay and what we're trying to do is find the most equitable way that people pay. There are employment consequences of high electricity prices that put some businesses in a situation where they can't compete and they can't employ people. So there are complex issues that we're grappling with, but thank you very much indeed for coming along.

**MR McLEAN (ASU):** Thank you.

**DR CRAIK:** Thanks a lot, Greg.

**MR WEICKHARDT:** We now welcome our next participant, the Energy Networks Association. If you could each individually give your name and the capacity in which you're appearing, please.

**MR BAIN (ENA):** Jim Bain. I'm the project manager for the Productivity Commission inquiry.

**MR CRAWFORD (ENA):** Garth Crawford, principal adviser, economic regulation.

**MR WEICKHARDT:** Thank you very much indeed for coming along and thank you or your submission which we appreciate. Assume we've read that and we've got some questions about it, but if you want to make some introductory comments, please feel free to do that.

**MR BAIN (ENA):** Okay. Good morning, commissioners, and thank you very much for the opportunity to speak with you this morning. By way of a two to five-minute introduction, I'd just like to say our objective this morning is just to highlight a couple of points in our submission and answer any questions you may have.

As mentioned in our submission, in general terms, the ENA is in firm agreement with many of your 57 draft recommendations, including, for example, your comments on benchmarking and your comments on the consumer panel. We saw on Friday that COAG are also enthusiastic about a consumer panel, a challenge panel and an advocacy panel, so they have picked up that. We're supporters of that and we hope to be involved in the development of that panel in due course.

We also applaud some of the qualifications you've made in your report and recognise the fact that this industry has been going for over a hundred years and the asset life is typically 40 or 50 years and it's not easy to come up with quick-fix solutions when you're looking at those longer time frames and those long asset lives.

In our submission we specifically commented on four areas where we believe the draft recommendations can be improved. In chronological order, I'll just go through those four items. Garth may wish to comment on some of them or we may want to answer those in question time. But the first one, in draft recommendation 5.4 about ex post reviews, we support. The report put in by Jemena Networks, included the Castalia Consulting company report and a summary of that report said that:

Ex post reviews are unnecessary and counterproductive. The incentive for inefficient overspending claimed by the commission does not exist and such reviews are likely to impose additional costs and risks on network businesses and customers.

That report went quite a way to justify that statement. The second draft recommendation we wished to comment on was 11.2, talking about additional licence conditions and our comment there was we believe that is getting too prescriptive. It adds administrative burden to distributors and it detracts from the opportunity for innovation by network businesses.

11.3 and 11.4, the ENA supports the approach of those draft recommendations that have been adopted by the commission but we would encourage the commission not to be too prescriptive in detailing what's required behind pricing. Pricing, as you're aware, is an art and it really needs the input of DNSPs to come up with a simple, efficient, cost-reflective network tariff that's related to their individual customer bases. So what we're saying there is we agree with the principle; we don't want the level of prescription that has been put forward.

The final comment was on draft recommendation 21.4 - and a number of other submissions I note have also commented on this - we don't agree with that because it's sort of bypassing the existing authorities and processes. There is an extensive amount of knowledge held in the AER and the AEMC and we would not support the recommendation to fast-track rule changes. So they are the four items we wish to highlight. Garth, would you like to add anything more at this stage?

**MR CRAWFORD (ENA):** I think we'll just answer questions.

**MR BAIN (ENA):** Okay.

**MR WEICKHARDT:** Okay. Thank you very much indeed for that and thank you for your previous submissions before the draft report. We much appreciate it. Perhaps we might go down your list to start with, but we'll start with the ex post reviews. I confess I haven't at this stage read the Jemena submission but I will do so. Given the fact that the AEMC have now opined on the issue of rule changes and they have indicated that they propose an ex post review, do you have the same reservations about that rule change?

**MR CRAWFORD (ENA):** We do. We're on record discussing the idea of ex post reviews with the commission through that entire process. What we did essentially was put in principle a case that we don't believe ex post reviews are effective. They weren't part of the original AER rule change which initiated that rule change process because the AER and the ACCC has previously had that power and then said that it should be rejected in using it because it doesn't believe it's effective. However, what we've said to the AEMC is, "If you are going to implement the potential for ex post review," and that's what the AEMC have said, that there's the option of ex post review if you breach the allowed revenue benchmark for capital expenditure, "then there should be a strong set of principles around that," because

obviously what you want to avoid from an investment certainty point of view is a kind of hindsight bias, if you like, in terms of the regulator second-guessing commercial decisions which were prudent and efficient at the time in the circumstances.

So, yes, I agree that the issue is now somewhat past, in the sense that the AEMC has spoken on the issue. We'll be working hard with them to make it work. One of the principal areas of our concern has been when the ex post review process would commence and the transition rules which the AEMC has set in Victoria in particular has the ex post review potentially taking place from the calendar year 2014 to 2015 within the already in place regulatory period which the AER is administering. That is, the rules of the game are changing even while the prices have already been set for the existing regulatory period and that's been a significant concern for our members, considering that these regulated businesses raise capital in the market space and indeed in equity markets, on the basis of having a regulatory certainty around their pricing reviews and now effectively the rules of those games are changing midway through, so we've had concerns around that as well.

**MR WEICKHARDT:** Isn't it the case that at least to date, the Victorian entities have not overspent their capital forecast and therefore it's unlikely that the ex post review would be triggered if that - - -

**MR CRAWFORD (ENA):** I'm not sure all businesses are in that position. I believe one or two of them may not be, but our case would be rather, in principle, it's the wrong thing to do to change rules midway through a period. We agree the ex post review, if the AEMC had that view, should be implemented but it should be implemented at the start of a new fresh regulatory period where those businesses would have certainty when they're planning their capex, but this is capex which could be subject to an ex post review.

**DR CRAIK:** What did you think of our view about the suggestion of - you know, if you thought it was likely that you would overspend your regulator allowance that you sought pre-approval or that regulatory investment test was found not to have followed due process? What did you think of those - - -

**MR CRAWFORD (ENA):** I guess we're always in the world of second best, given our principal policy position is that ex post reviews shouldn't be implemented. That has potential to work in some circumstances but not in others. My experience from the gas access regime, for example, is that it had reopeners and trigger events which were designed for like circumstances if you were going to breach your capex and ex post reviews exist in gas. Those were never triggered and my feeling about why that has happened is because once they're within the regulatory period, these businesses seek to manage these targets and efficiently make decisions, and reopening that regulatory sort of bargain, if you like, or the regulatory compact, is a



very significant commercial risk and process for them to go through. So I guess my hope would be that the AER and the businesses would be in constant dialogue around what is happening and noting that the ex post review is not a mandatory obligation, it's an option available to the AER, that there will be sensible conversations had between the business regulator on an ongoing basis about how capex out-turn is looking compared to forecast.

**MR WEICKHARDT:** Where there have been overspends and clearly there have been some major ones, do you believe that they have been mainly due to projects that were not envisaged, coming on to the program in the regulatory period, or were they due to cost blow-outs of projects that were foreshadowed but ended up costing twice or more than they were originally forecast to cost?

**MR CRAWFORD (ENA):** I don't think there's one general answer to that. I guess what I'll say is what primarily drives capex is demand forecast and demand forecast error and then also customer growth and low growth and peak demand growth, and all of those things are extremely difficult to forecast, so it is inevitable that a capex forecast will be wrong.

**DR CRAIK:** You probably haven't had a chance to catch up yet with our discussion with Grid Australia on Thursday.

**MR BAIN (ENA):** No, we haven't.

**DR CRAIK:** I'm not being critical, but we had an interesting discussion about their new model for planning and an enhanced AEMC model, I think they described it as, but one of the things that we got to discussing was the possibility that the AER approves a revenue base, but for large projects there's a contingent project approach, so that for every large individual project, there's kind of a separate approval process within the regulated period. I mean, obviously you people haven't had a chance to think about it or see it, but I guess we'd be interested in your views.

**MR CRAWFORD (ENA):** A contingent project mechanism exists currently.

**DR CRAIK:** But this would be for all projects over a certain value.

**MR CRAWFORD (ENA):** Right. I think the AEMC will extend it I think to distribution as well.

**DR CRAIK:** So I guess we'd be interested in your views if you come back to us.

**MR CRAWFORD (ENA):** We might have a look at that and develop our views.

**MR WEICKHARDT:** Perhaps we could move then to your second point on

additional licence conditions. I guess there are a number of issues around those. Your second and third points are probably related because our concern was, when we looked at the whole issue of network pricing and network augmentation and efficiency, that we moved to a cost-reflective pricing regime, and at the moment, the rules suggest that distribution businesses can have regard to long-run marginal costs but have regard to - it might mean, "Well, yes, I had a look but I didn't like it and I move on and I ended up with a completely different basis for applying costing." If you support the principle that customers ultimately should pay a cost-reflective price, how do you believe we could get there without there being some more prescription in the rules?

**MR BAIN (ENA):** I think the thing is to leave it up to the DNSPs to supply a principle that pricing has got to be cost reflective. But to be quite honest, a company like Ausgrid that's got 1.3 million customers, you could have 1.3 million different cost-reflective prices if you took that to the nth degree. Pricing is an incredibly complicated business and at the end of the day you want something that is cost reflective but at the same time is simple. I notice in Victoria they talk about three time-of-use prices, peak, shoulder and off peak, but to be quite honest, I think even three pricing periods is too complicated. From a generation point of view, I know peak and shoulder prices have been pretty well within a couple of per cent of each other anyway. So I believe there's an argument to simplify that to two pricing periods. I suppose that's what I'm saying; it is a very complicated thing to do cost-reflective pricing.

**DR CRAIK:** But even the Sydney Harbour Bridge has at least three levels of tolls, if I recall correctly, time-of-use tolls.

**MR BAIN (ENA):** Yes. I haven't been over the Sydney Harbour Bridge lately.

**DR CRAIK:** People seem to manage.

**MR BAIN (ENA):** Yes, but as well as the time of day, you have got the seasonal summer and non-summer periods too, so that gives you four different - - -

**MR WEICKHARDT:** People in other countries seem to have managed without the world ending, Jim. If you go to places like Texas or Arizona, you will find quite, by our standards, complicated pricing regimes which people seem to get their minds around. Most people have got mobile phones and seem to get their minds eventually around them, some of them perhaps after being burnt but they get their minds around the fact that there are pricing regimes here. I guess the concern we've got is at the moment the distribution companies or the network companies in general, even though they have had the ability under the rules to have regard to and therefore move to more cost-reflective prices have not chosen to follow that path and that's meant that inherently there are cross-subsidies in place where ironically the poor and

disadvantaged consumer is actually cross-subsidising the people who have got airconditioners hanging off their walls and using them during hot summer days.

Given the fact that history suggests that the status quo hasn't produced the right result, if we simply leave it to the network businesses to do their own thing, why won't they just continue to do what they've always done?

**MR BAIN (ENA):** This technology is unfolding. We go back to 1996 and we were all going to have smart meters within two or three years. That hasn't happened. It is evolving. It's an evolutionary process, as I said, not a revolutionary process. DNSPs do offer time-of-use pricing where they're allowed, but one of the issues is retailers. Are retailers passing that on? Retailers aren't that sort of innovative in a lot of areas. At times there's not a lot of incentive for them to pass on a different tariff.

**DR CRAIK:** So does ENA agree in principle that there shouldn't be cross-subsidisation?

**MR BAIN (ENA):** Cross-subsidisation?

**DR CRAIK:** Through tariffs, so - - -

**MR BAIN (ENA):** Yes, we do.

**DR CRAIK:** So do you think the regulatory framework ought to encourage that - - -

**MR BAIN (ENA):** I think the regulatory framework allows for that at the moment.

**DR CRAIK:** But clearly it doesn't in terms of if it's not necessarily passed through - - -

**MR BAIN (ENA):** By the retailers, you mean?

**DR CRAIK:** Yes. So I guess what I'm saying is do you think the entire regulatory framework should ensure that the cross-subsidisations are not passed through?

**MR BAIN (ENA):** I suppose - - -

**DR CRAIK:** I'm not trying to trap you, if you can - - -

**MR BAIN (ENA):** Maybe that's an evolutionary process too that the retailers need to be more attuned to what these costs are and then to be able to offer different tariffs. That's coming out now. You're seeing in Victoria that these tariffs are evolving now. Maybe they will be translated across other jurisdictions once they get

going in Victoria.

**DR CRAIK:** But clearly time-of-use pricing, there has to be sufficient differential in the categories of time to actually have an impact.

**MR BAIN (ENA):** Exactly, and that's a bit of an art. I know some of the Ausgrid tariffs or Energy Australia had a ratio of 10 to 1 between peak and off peak. Now, that's the sort of thing that does make people move. In Victoria I've seen ratios of 1 to 8. Now, that makes people move, but where you get ratios of 1 to 1.5, I don't think people take any notice. So you do need those, but you come back to being cost reflective: do those ratios of 10 to 1 reflect cost-reflective basis of pricing? That's why I think you come back to - - -

**MR WEICKHARDT:** It is complicated and certainly the last thing we could envisage was every one of Ausgrid's customers having a different cost-reflective tariff. I think the costs there would far exceed the benefits. But given that time-of-use tariffs depend upon people having suitable meters, interval meters, in place, can we just turn to that topic of interval meters which has been much discussed and there are many different views and models. I note in your response to some of our information requests, you make the point on attachment B that:

ENA supports the removal of the barrier in the rules to network businesses rolling out smart meters (the requirement in the rules for a retailer to act as the FRMP.)

I'm not sure what that stands for but - - -

**MR BAIN (ENA):** Meter provider, FRMP.

**MR WEICKHARDT:** Anyway, we accept that they're the meter provider for type 4 meters. Can you give some background to why that position was written into the rules in the first place and the degree to which you feel, if it weren't there, that distributors would have actually rolled out in some cases smart meters on their own volition because they saw some benefits to their own network in doing so.

**MR BAIN (ENA):** Distributors have been rolling out smart meters. In the case of Ausgrid, they've got 400,000 smart meters I think - - -

**MR WEICKHARDT:** That's in a trial, isn't it?

**MR BAIN (ENA):** No, that's been rolled out for some time now. Those meters have been rolled out, which is one thing, but the second thing is how many people have taken advantage of those smart meters, and I think only 30 per cent are actually on a time-of-use tariff. So the meters are there but people haven't taken advantage of

them.

**MR WEICKHARDT:** So how have Ausgrid rolled them out against this requirement in the rules that distributors can only roll out types 5 or 6 meters.

**MR BAIN (ENA):** Smart meters I don't think have been defined as a type 4, 5 or 6. I mean, smart meters are a separate category altogether and I think they have - - -

**MR WEICKHARDT:** Unfortunately I'm starting to understand a bit more about these categories than I thought I wanted to but I understand now that category 1, 2, 3 and 4 are different grades of smart meters and 5 and 6 are different grades of accumulation - - -

**MR BAIN (ENA):** Accumulation, yes. But distributors can get exception to install type 4 meters but I think actually the smart meter is a different category again. As I say, it's not type 1 to 4 and it's not 5 or 6 and it hasn't been defined yet but I think they still need approval to roll out those meters and they can get it. It's not too difficult to a process.

**MR WEICKHARDT:** If network benefits are achieved and we've heard people say that the networks can get information from a smart meter, however you define that, in terms of understanding the way the network performs, voltage and things that are occurring at a local area, fault diagnosis and fault remedies, connection and disconnection remotely, if all those things can occur, why is it that, say, only Ausgrid, apart from the Victorian distributors, have chosen to voluntarily roll out smart meters?

**MR BAIN (ENA):** It's not only Ausgrid, I think they've done it more than anyone that I know. Essential are putting them in, Endeavour are putting them in and my understanding is pretty well all replacement meters now are smart meters or time-of-use meters. The big issue is, do they have the communications to back them up or are they simply using them as accumulation meters. The cost of metering is not the actual cost of the meter itself, the big cost is the communication system and the IT systems to support getting that 30-minute data. You know, to read an accumulation meter you read it four times a year and you get, I think, five sets of data come off it four times a years, so that's 20 sets of data.

To come back to the 30-minute collection of data, you've got five bits of data every 30 minutes for 8762 hours a year times two. It's just vastly different the information and technology requirements. For instance, with type 4 meters which have a mobile phone on them, those mobile phones dial into those meters every day and I think the best rate is about 40 cents per call, so over a 30-day period there are 30 days at 40 cents, so about eight or 10 dollars a month for that data. So for a small consumer paying \$10 a month, \$120 a year, it is a big amount of money. Even

looking at quotes from NBN and people like that they're still very high, so in Victoria they're putting in - there are other communication systems which are substantially cheaper than using Telstra or potentially NBN. Then there is the IT requirements to manage all that data.

**MR WEICKHARDT:** Coming back to the issue of the rules, at the moment there seems to be a divide between those people who support a "market-led or contestable rollout" which seems to be code for the retailers for doing this, contestable to me would have meant anybody could do it and it doesn't seem that those people who favour contestable favour the distributors being involved in it because I think there is concern that they may have other advantages or benefits that put them at an advantage to the retailer and the retailer seems to want to keep this service to their own benefit because they see benefits for their customers in doing that. Can you put the distributor's point of view here as to why you want the rule removed and why you think distributors should have an ability to roll these out?

**MR BAIN (ENA):** The big benefit of the distributors being able to do it comes back to the communication system and distributors control a specific geographical area and there's a benefit in putting a common communication system across that geographical area. In fact in the UK you're probably aware what they've done there is installation of a meter is contestable but communication system has been mandated, so they have regulated that communication system but anyone can put in a meter.

**DR CRAIK:** Is there anywhere in the world where a retailer would put in a communication system to back up smart meters? Wouldn't the distributors have to be the ones to put it in or am I missing something?

**MR BAIN (ENA):** At the moment that's the most cost effective way of putting in a communication system. With the NBN if the cost per call comes down to five or 10 cents per time that may be a way to do it.

**MR CRAWFORD (ENA):** The other thing I'd just add is that this issue of distributor or network participation in otherwise contestable areas is not a new issue. Regulatory regime has already handled that to some extent. For example, distributors often used to be linked to energy retailers and offer those services on a ring fence on a transparent basis which was separated from the regulated services they provide. So should we go down this route of a contestable environment, that's not a new issue, that's simply an extension of that issue which already exists and which is already handled adequately by ring fencing provisions and others in the regulations.

**DR CRAIK:** I guess what I'm asking is, is it possible to have more than one communication system to support smart meters in a given area put in by different

people?

**MR BAIN (ENA):** It is but clearly it's not as cost effective as having a single communication system. But this technology is changing very quickly. In 12 months' time it might be different.

**MR WEICKHARDT:** So is the UK model you think a sensible model we should be looking at with a mandated communication system?

**MR BAIN (ENA):** Personally I think it's the way to go. A lot of other people have spent a lot more time on smart metering than I have.

**DR CRAIK:** Can I ask you about the issue you raised about national licence conditions, you were concerned about extra licence conditions. I guess our view was - and not necessarily happened immediately - but it would seem not unreasonable within terms of licence conditions that gradually the AER could lead to a set of national template licence conditions that would apply across the board. I understand that networks are different in different areas and so are reliability standards probabilistically determined are different in different areas but the framework for setting them would be the same right across the board. I'm curious about your view about licence conditions.

**MR BAIN (ENA):** I think we have said here we'd like analysis of the benefits of a national licence. On the surface of it I can see there could be benefits of having a national licence if you come in at a very high level to start with and then be developed a period of years.

**MR CRAWFORD (ENA):** I think one of the risks that we saw and this was an idea which was around 2005-2006 I think were the original reforms there was some work done around a national licensing system and I think one of the unfortunate tendencies was you saw the idea of a national licence take shape but then potentially state and territory governments would continue to impose their own licence and so you would actually end up just with a duplication of regulations with a sort of chapeau which wouldn't have any meaning or - - -

**DR CRAIK:** Our view was to try to migrate from the state to - - -

**MR CRAWFORD (ENA):** That's right.

**DR CRAIK:** Then there's a national electricity market so you have a standard sort of - - -

**MR WEICKHARDT:** Acting like a national building code which recognises that if you're in a cyclone prone area you build to that cyclone code but you don't

mandate that everywhere. You could have a national framework but certainly when you look at things like benchmarking at the moment it's made virtually impossible in a meaningful way because of the jurisdiction-by-jurisdiction variations. So the complexity for the regulator, the complexity for the network businesses of having different jurisdictional requirements at the moment I think adds to inefficiency in costs really.

**MR BAIN (ENA):** It's not that relevant to the distributor because they are pretty well all within a single jurisdiction, so unlike retailers that go across a number of jurisdictions there is not a real benefit there for distributors like there is for retailers.

**MR WEICKHARDT:** This is the regulator though.

**MR BAIN (ENA):** Yes.

**MR WEICKHARDT:** Do you leave it to the distributors?

**DR CRAIK:** Comparing, yes.

**MR WEICKHARDT:** That adds to the regulatory cost and the regulatory burden for the regulator.

**MR BAIN (ENA):** I can see in the longer term it would be.

**DR CRAIK:** And at the end of the day, the consumer.

**MR BAIN (ENA):** Yes. It's not easy getting this consistent legislation in place. We've seen the NECF, when did we start that, 2004 and we've now got the ACT, Tasmania and South Australia coming in on 1 February and the other states are still wrestling with it.

**MR WEICKHARDT:** You go on in terms of these issues on licence conditions and pricing and you say, "Demand response to time based pricing may be a valid element to consideration in this process but the ENA does not consider it requires separate specification above and beyond other elements." The reason we singled it out was the augmentation to meet critical peak demand which is driving a lot of investment seems to be a critical issue to address and in clipping those peaks and stopping that driver of capex which is used for assets employed for a very short period of time seems to us to be a very, very important issue.

**MR BAIN (ENA):** It certainly is an issue. I think the importance of it probably has been exaggerated at times. We have what, 60 per cent of the total electricity load in the NEM now already have time-of-use meters and already are exposed to that, so we're looking at the remaining 30 to 35 per cent of the market.



**MR WEICKHARDT:** That's the most peaky component of it because the 60 per cent that are exposed to time-of-use pricing tend to have reasonably constant demand apart from offices and shopping centres.

**MR BAIN (ENA):** A lot of it is the commercial market which has its peaks but the industrial market is flat.

**MR WEICKHARDT:** There are some other questions on other issues, but just dealing with the last of your issues, you don't agree with bypassing the AEMC. Clearly the issue of making changes to the rules is something that everyone is very sensitive to but I guess we were concerned about review after review after review and paralysis by analysis. When you look at rule changes - and, of course, in some cases it's your members that are driving requests for rule changes, is the time taken to consider and review rule changes in some cases inordinately long and is there some way by which a sensible - with checks and balances - process could be put in place to fast track this?

**MR CRAWFORD (ENA):** There are fast-track provisions existing in a rule change at the moment. I guess our concern with the proposal goes to the issue of one of the things in the Energy Regulatory Regime which we actually think we've got right, we've got a centralised rule maker with clear guidance about what the rule-making test is. Our concern would be that if you implemented some of these recommendations and they were taken up very actively, you could move to essentially a form of distributive rule making where there might be review of here, working on this area of the rules, a review over here, review commission here plus the AEMC potentially also doing formal rule change applications on the same issues and those might, however much they tried, apply different standards of evidence, different tests, different mental frameworks not identified as cross-linkages between the issue and not work to the same high standards which we believe the AEMC will make the process work to.

So although rule changes do take time and there is that streamline provision we don't think as a general rule the rule-making process has been too slow. There have certainly been extensions to rule-making requests that have been made. We believe those have been justified in terms of the complexity of the issues, so one of those also around the AER rule change which effectively reopened the box, if you like, on economic regulation of networks generally. I guess our concern and our sensitivity around this is that these are assets, as we mentioned, which operate for 30 or 40 years of their economic life. The regulatory review periods are designed to be around five years. Since my entry into the industry we've actually had major rule change reviews every five years at the same time effectively as these regulatory reviews come up. The theory is that you set the rules and there is a regulatory period when you re-examine the rules and see if they're working but the theory doesn't bear out, it's

actually reviewing the rules plus you're reviewing the revenue and pricing and network outcomes of that at the same time.

So we see the AEMC as a very good positive anchor to actually have that stable framework of, "How do you apply the national electricity objective? What is the rule-making test? What are the interlinkages between the issues?" An example of that is the economic regulation of network service providers rule change has actually been taking place parallel with this Power of Choice review from the AEMC which has examined the same sort of issues which your review has examined and the AEMC is able to bring all of that together and put a consistent framework out rather than potentially ending up with a rule change here which is inconsistent with the rule change in your recommendation.

**MR WEICKHARDT:** I understand the argument. I guess we felt that getting the SCER to agree on something was a pretty high hurdle and it was unlikely that they would capriciously, if you like, all agree on something unless it was supported by a fair degree of evidence or analysis in the first place.

**MR CRAWFORD (ENA):** I agree. I guess our preface would still be - - -

**DR CRAIK:** The evidence back it up.

**MR CRAWFORD (ENA):** - - - for the statutory framework, an independent statutory authority like the AEMC is a good place to vest rule-making authority and the SCER has, if you like, higher responsibilities and a higher level making policy making sphere. Just a mental example to work through is total factor productivity, a sort of benchmark, was the rule changing originally envisaged by the Victorian government and submitted through the rule change process. So there is no reason why that rule might not have actually gone through to completion had the AEMC thought it met the rule-making test. In the event it became a review and that review is sitting within the SCER to now action, if you like.

So we don't believe that necessarily the hold up, if you like, is within the AEMC for effective rule-making activities. But we don't believe that the dual process of having SCER ministers potentially unanimously decide on rule change and the AEMC sit there and also have to decide on rule changes would be very accountable because then who is the accountable body for whether or not the rules are operating effectively and whether or not the rule-making test importantly has been met.

**DR CRAIK:** The South Australian minister used to have a couple of one-shot powers in the - - -

**MR CRAWFORD (ENA):** They did but that actually arose as an implementation

mechanism for the new national electricity law, so that was a legal convenience, if you like, to enable the rules to be made all at one time and then I think they gave themselves another shot to make it in respect of smart meters or NECF and so forth. But that was very much a pragmatic mechanism to make it rather than a claim of an ongoing role in the rule-making process by ministers.

**DR CRAIK:** Can I ask you about benchmarking. Did you have particular views about the role of benchmarking? What was your reaction to our recommendations on benchmarking?

**MR BAIN (ENA):** I think we're broadly in agreement with what the Commission said. The Commission certainly recognised the challenges with it, both at a high level and a low level. There is a wide variation on the profile of the distributors in Australia, some regional, some metropolitan or some urban. You've got distributors like Ausgrid who have got to supply a city like Sydney which is an international city and really deserves a higher standard of reliability than, for instance, maybe Wagga Wagga or somewhere like that.

**DR CRAIK:** The residents in Wagga might not agree.

**MR BAIN (ENA):** Yes, that's right. Maybe I shouldn't have mentioned that. The point is it's very difficult to compare distributors such as Essential Energy or Ergon with Energex, an Ausgrid, a CitiPower and I think the Commission and the qualifications they put into the benchmarking comments recognise those difficulties. But it's not to say it's not moving towards benchmarking but just move a bit more slowly than to try and produce it in January.

**DR CRAIK:** One of the things we suggested was publishing regular benchmarking to compare the different network companies. Given they're regulated monopolies, we've had a bit of push back, I guess, in concern about the AER publishing confidential data. With the regulated monopolies, what sort of information would be confidential and why should it be confidential?

**MR BAIN (ENA):** For instance, the AER are going to publish that annual benchmarking report starting from 2014, but confidential information could be contractual information which they want to keep confidential.

**MR CRAWFORD (ENA):** For example, a large proportion of capex and opex programs from some businesses who actually contracted out on a competitive tendering basis, that's actually part of the assurance that the regulator gets, that these costs are prudent and efficient. So if, for example, the benchmarking took place at a level where you were able to effectively unpick those sort of expected prices, as it were, that would actually undermine that competitive dynamic of those tendering arrangements. That's all that - - -

**MR WEICKHARDT:** Why would it though? To a degree, wouldn't it help consumers of electricity if somebody could see that company A over here had achieved a better-achieved cost for buying a transformer than they were? Surely it would help them lower their costs the next time round they got into a tendering process.

**MR CRAWFORD (ENA):** The concern would be that the differences between the businesses would sort of mask them of that and still enable effectively some competitive tendering processes to be undermined. That's all our concern. That very much goes to the level of benchmarking, and many of our businesses benchmark as part of the regulatory proposals going forward and we're supportive of the annual benchmarking review from the AEMC which, as Jim mentioned, kicked off with the AER producing the benchmarking report, so it's going to be the sort of details of that. That's sort of the primary reason for not having it as a benchmarking - - -

**MR WEICKHARDT:** I guess if you were representing the suppliers who were tendering, I could understand your concern, but since you're representing the network businesses, I would have thought the more information on what other people were achieving was better, was going to help your members.

**MR BAIN (ENA):** It may not. We've only got one or two suppliers and they can see what another distributor is buying at. You might get a situation where the prices just naturally drift up more than they would.

**MR WEICKHARDT:** They might drift down.

**DR CRAIK:** Drift down too.

**MR BAIN (ENA):** In some cases they could drift down, other cases they could drift up.

**DR CRAIK:** But maybe if they're public, some other company overseas might say, "Wow, here's an opportunity. I can be lower than these companies and still make - - -"

**MR BAIN (ENA):** I think the purchasing policies of the network companies are pretty sophisticated. It's an international market and these companies have got contacts all over the world. But there are items where there are only two suppliers that are interested, so - - -

**DR CRAIK:** Do you think the cost of the network companies that are providing data for benchmarking - does it put much in the way of additional costs on because clearly, right now, as you say, they do their own benchmarking.

**MR BAIN (ENA):** Yes.

**DR CRAIK:** But do you think - - -

**MR BAIN (ENA):** It is a significant cost, but having said that, they are doing a fair amount at the moment and they are providing a lot of information to the AER.

**MR WEICKHARDT:** When you say "significant", Jim, can you quantify that in some shape or form? Are we talking about adding 1 per cent to their costs, 10 per cent of their costs, 20 per cent of their costs?

**MR BAIN (ENA):** It's certainly not 10 or 20 per cent but it could be an extra five to 10 people.

**MR WEICKHARDT:** In each of the businesses?

**MR BAIN (ENA):** Each of the network businesses.

**MR WEICKHARDT:** Do you see that that might give them some benefits, as well as add some costs?

**MR BAIN (ENA):** They were already doing benchmarking within their own businesses. One of the problems with benchmarking is getting a standard reporting base. In New South Wales, we've 35 network businesses rolled into six and then to three and now virtually sort of heading towards one, and all those different businesses have been collecting costs for a hundred years on different bases, so it's easy to roll that into one.

**MR CRAWFORD (ENA):** So the key to minimising costs I think from the network's point of view would be reaching a stable data set, a stable sort of template of collection, and that's been the issue in the past, that in terms of regulatory proposals made by the businesses or regulatory information notices issued by the regulator prior to the regulatory review, those tended to be sort of shifting in terms of the information basically that was requested and offered but once you actually make your way through the transition costs of moving to some sort of stabilised national set of data collection, those costs will be small, relative, I assume to the benefits. But it's the issue of achieving that stability and those businesses being able to have confidence to invest in IT and human systems to capture that data, knowing that they're going to be asked the same thing in years 2, 3, 4 and 5, rather than be subject to a shifting sort of commercial criteria.

**MR WEICKHARDT:** I mean, I have to say, in my previous employment, I had all sorts of experience at a manufacturing facility saying, "We're different," and, "We

can't be compared with X, Y or Z," but once we got common plants on the same basis and you could genuinely compare like for like, there was a huge internal competition. You didn't want to be last, you didn't want to be the 16th out of 16 plants in terms of your costs and it drove huge efficiency benefits because people suddenly thought, "Gee, they are doing things better than we are."

**MR BAIN (ENA):** Yes, but I think comparing manufacturing businesses around the world is a much simpler task than comparing network business.

**DR CRAIK:** I'm sure the manufacturers would disagree.

**MR BAIN (ENA):** I mean, in manufacturing, you're on a single site and you've probably got a common cost database because you've probably owned these businesses for 20 or 30 years.

**MR WEICKHARDT:** Everyone likes to think they're different.

**MR BAIN (ENA):** That's right.

**MR WEICKHARDT:** To a degree they are.

**MR BAIN (ENA):** Yes.

**MR WEICKHARDT:** Can I turn to another issue that's contested and fraught and that's the issue of revenue caps versus weighted average price caps. Some of your members operate under weighted average price caps and some under revenue caps. We made a recommendation in the draft report that for distributors, there should be a move to weighted average price caps because we felt that that was the only way that a cost-reflective pricing regime could really work. The AER don't agree with us, nor do some other people, but others things weighted average price caps are the way to go. Can you give us your penny's worth on this issue?

**MR CRAWFORD (ENA):** We're probably not going to make you happy by giving a definitive answer. I guess my observation would be that the rules provide for different forms of regulation to be adopted and essentially discussed and imposed, if you like, from the AER through the regulatory review period and there's a range of factors which the regulators are directed by the rules to consider whether or not to choose a weighted average price cap or revenue cap or revenue yield or the varieties which lie in between those. So we believe that's very much on a case-by-case basis. Historically electricity transmission has operated on the revenue cap basis and distributors - I think Victoria have operated on the weighted average price cap approach. That's really an issue which we believe is best determined within each region.

**MR WEICKHARDT:** What are the criteria that would drive a decision to use weighted average price cap versus revenue cap - - -

**MR CRAWFORD (ENA):** It's very much a sort of risk trade-off from the regulator's point of view, a view about forecasts, a view about risks of under-recovery and over-recovery, so all of the sort of factors which the national electricity objective directs them toward. We're just sort of agnostic on this issue.

**DR CRAIK:** A lot of the concern about the AER was based on the survey that they published and their response to that to us had been that that was taken at a point in time I think shortly after they had done a number of determinations. So I guess my question to you would be that have your concerns been mollified or your worry has been assuaged since the last stakeholder survey in dealings with the AER? Are there any problems remaining and, if so, what?

**MR CRAWFORD (ENA):** I guess the principal thing that's happened since that time is the SCER meeting and the COAG meeting which announced, as I understand, a \$23 million boost in funding for the AER. So we did express our concerns that effectively since the AER had gathered a whole range of new functions, its resourcing hadn't necessarily been reviewed in a comprehensive fashion, so ministers and first ministers have now done that. We did raise those concerns around I guess the constraints which the institutional structure within which the AER prides itself might have put upon its ability to attract and retain skilled staff. We, I guess, will wait and see with interest what happens with that funding and how that plays out into the future. I guess what we were concerned about and that's what we made in the submission was we were concerned about the trend being in the wrong direction, if you like, from the establishment phase of the AER. With that first round of reviews under way, naturally it speaks of a body which was going through a process of establishing and developing itself to perform slightly differently than that stakeholder survey indicated.

**MR BAIN (ENA):** I know COAG did announce on Friday that the regulator will remain in its current structure as part of the ACCC.

**DR CRAIK:** Does your organisation have any view as to where the skills of the extra resource that the AER needs in your view?

**MR CRAWFORD (ENA):** I think that's really a matter for the AER management. They will understand those issues. All I would say is that network regulations are inherently complex in time and cost resourcing but resource incentive and more resources in that area is possibly the right area to go to.

**DR CRAIK:** Okay.

**MR WEICKHARDT:** I think you make the points there in your submission that you want the regulator to not be a consumer advocate but to be, if you like, an entity that looks at all the evidence before it and makes a decision that's consistent with the national electricity objective. Given the announcement on Friday about a consumer challenge panel - it's an interesting word, "challenge" panel - do you have any concerns about the way that panel and its objectives might be set up and whether or not it's consistent with your view about greater consumer involvement in a useful manner consistent with the NEO?

**MR CRAWFORD (ENA):** Yes, we're very positive about it, so we welcomed the announcement. The idea had its genesis in the UK regulatory system, as so many ideas in the Australian regulatory system do, and the concept is that you have in effect a sort of a third force through the review process challenging and questioning and effectively holding the regulators to the fire, if you like, but also holding the network firm to the fire about their regulatory proposal and that that panel is made up of people with good industry skills and expertise around the regulatory system, around engineering, around the costs issues that are involved in regulatory reviews, so we are very positive about that change. We believe it's just one piece of the puzzle though. So consumer engagement must take place from the very commencement of the regulatory proposal, indeed the formation of the regulatory proposal, where network firms should, and many do, talk to consumers within their area of service about what their priorities are. That process should also go through the entire regulatory process so the challenge panel is part of that but also we believe a national energy customer advocacy group is part of that, and COAG and SCER are I believe working towards some sort of scheme in that regard.

We also believe that consumers should have a voice in the merits appeal system as well and be able to put their views, because that allows the regulator effectively to have as many diverse views from real consumers with all their different valuations of reliability and all of the different priorities before them when they make that decision, rather than it being a sort of closed-door bilateral process of the regulator and the regulated firm throwing pieces of paper at each other and it sort of - - -

**DR CRAIK:** The challenge panel - we had a very brief discussion with the AER about it and one of the comments they made was that the composition of that panel could change over time. Is that how you understand it? I guess my question is how does that work because it takes a while to get your mind around electricity - and speaking for myself, I'm not sure I have - so kind of bringing people in for a determination and then getting a whole new bunch strikes me as a bit challenging for those people.

**MR CRAWFORD (ENA):** Yes, we don't have any answers to any of those issues. That's a valid identified issue. There's an issue of where you find these people,



there's an issue of how you skill and support them and I think AER's support will be an important part of that; in terms of just not leaving them in a room alone with a 500-page decision to try to analyse, they will need support. But we believe this idea is worthy of implementation and worthy of exactly those sort of thoughts and underlying considerations.

**MR WEICKHARDT:** Can I just turn to this subject of funding in the AER. What the Commonwealth can give the Commonwealth can take away too and we were concerned that the regulator is neither overfunded nor underfunded - I'm sure you wouldn't want it overfunded either as people with too many resources can do things that aren't necessarily going to lead to long-term efficiency - but do you have a view about the recommendation we made that industry funding might be one way to go to take the sort of feast and famine away from the regulatory funding?

**MR BAIN (ENA):** I think that's unnecessarily complicated. The AER have their existing funding within the ACCC and they have been given an extra \$23 million which sounds a lot of money - - -

**DR CRAIK:** It does.

**MR BAIN (ENA):** - - - but it's spread over four years. So what's that, six million a year, which I think is probably something like 25 or 30 per cent on top of their existing funding. So it's significant but it's not huge. I agree with you that the Commonwealth could take it away. It could be rolled back into the ACCC because under the current model, Rod Sims still has oversight of that money. But I think if the AER are seen to be performing at the right level, the money probably will be shuffled off somewhere else, or could be.

**MR WEICKHARDT:** We made a recommendation also for an independent review of the AER. Do you have any views of whether or not that might be a helpful way of focusing on the areas that they need to improve?

**MR CRAWFORD (ENA):** I believe that's an issue under consideration by SCER and SCER ministers and COAG. We don't really have a view about that. I guess our principal view would be that regulatory institution should be regularly sort of reviewed for its performance. But we believe from our point of view our strongest interest is in a well-respected, well-funded and well-resourced regulator with highly professional staff who are respected within the industry and government and whose decisions are seen to have strong expertise behind them and have wide public acceptance and if that means more funding for the regulator, then we're all for more for the regulator.

**DR CRAIK:** The Major Energy Users and the Queensland panel of inquiry that reported recently both suggest that the AEMC ought to be reviewed, for slightly

different reasons, I think, but do you guys have a view about that?

**MR CRAWFORD (ENA):** We believe it's a well-functioning rule-making market development body. At the moment it's performing well. I believe that SCER and SCER ministers have regular reports from both the AER and the AEMC and they will form their own views, so that's not really a question we can answer.

**MR WEICKHARDT:** What about the recommendations of the LMR panel, do you have any views on their recommendations in the report?

**MR CRAWFORD (ENA):** Yes, we've been interacting with governments quite a lot on this because there's been an announcement that the Yarrow panel report will be subject to implementation over the next six or so months and there will be a design and consultation process around that. We did have a very strong view which we put to the panel several times that we were concerned that the model of review which they put up was effectively a de novo style of review and that that would cause significant problems and delays in terms of regulatory design and implementation of regulatory decisions. We were concerned, for example, that if you established a new appeals body with effectively a wide-roving brief to examine issues which weren't in contention in the original decision or the appeal, that that would effectively represent the second regulator over the top of the AER potentially coming to different views which would then lead to issues of forum shopping and gaming and accountability for outcomes. So we had very, very strong concerns about that.

Our principal position is that, yes, the existing system is not functioning as governments intended to. We've put forward a model of two-stage reviews for merits review which would focus in on what are the issues in contention, but also allow the AER to bring in a wider range of issues which were connected to the material issues in dispute and allow that review body, which we believe should be the Competition Tribunal, to take that wider view of does this decision serve the NEO or does this amended decision serve the NEO better and come to that sort of view, as opposed to the existing system which I believe is perceived as a very narrow, sort of legalistic approach. So we've put forward an alternative reform line.

**DR CRAIK:** So you didn't support the limited merits review panel suggestion of a new appeal body connected with the AEMC?

**MR BAIN (ENA):** No, and that was quite a revolutionary proposal to be quite honest and we didn't support it and neither has the SCER and COAG supported it. They've announced this further consultation process.

**MR CRAWFORD (ENA):** Look, our view on that is really informed by the fact that the Competition Tribunal has a role in appeals under the national access regime. It's had a role in appeals on the gas pipeline access law prior to 2000 or so as well, so

this is a body which has heard appeals in the energy sector for well on a few decades, has built up an expertise, has ex-ACCC commissioners as part of its panels, has respected academic economists and people from industry backgrounds, so this is a well-respected appeal body which is a known quantity that people can work with and build up a body of presence over time, whereas we believe a new appeals body effectively formed under the rule-making rubric, however the ring-fencing arrangements there work, would be a significant source of uncertainty.

**DR CRAIK:** What about the idea that any review ought to be based on the information considered in the original decision? Do you agree with that?

**MR CRAWFORD (ENA):** Yes, we support that.

**DR CRAIK:** Basically circumscribing, to reduce - - -

**MR CRAWFORD (ENA):** Yes. So when the review arrangements were originally made, the reforms back in 2006-2007, that was actually a policy decision governments took that, yes, the appeals should be on the information before the regulator at the time. There's a limited exception, where I believe once the error is established and the appeal body believes it needs more information to remake the decision that it's allowed to, it has a discretion to take into account more information, but it's not required to. So that's what we believe is the work of the model, so we don't actually think that's one of the aspects of this model that's broken because it's not de novo at the moment.

**DR CRAIK:** Okay, thank you.

**MR WEICKHARDT:** All right. Thank you very much indeed. We're out of time unfortunately. There are many more things we could talk about but we have to move on. Thank you for appearing today.

**MR BAIN (ENA):** Thank you.

**MR WEICKHARDT:** We'll adjourn now until 1.30.

(Luncheon adjournment)

**MR WEICKHARDT:** We're now going to resume the hearings and our first participants are the National Generators Forum. Thank you for coming along. If you could both individually give your names and your capacity in which you're appearing, please.

**MR REARDON (NGF):** Richard Reardon, executive director, National Generators Forum.

**MR SCOTT (NGF):** David Scott, regulatory manager for CS Energy, who is a member business of the National Generators Forum.

**MR WEICKHARDT:** So are you appearing for the National Generators Forum here?

**MR SCOTT (NGF):** In this instance, yes, but CS Energy has also put in a submission to the inquiry.

**MR REARDON (NGF):** But here as part of the National Generators Forum, yes.

**MR WEICKHARDT:** Thank you. Thank you for appearing and thank you for your submission. You can assume we have read it and we've got questions about it but if you'd like to give some introductory remarks, that would be great.

**MR REARDON (NGF):** I'll just make a couple of brief comments just to summarise the main positions there in the paper. As you would be well aware, there has been significant changes in the market dynamics over the past five years. We have seen a relatively unprecedented decline in electricity demand and a decline in peak demand over the past five years and there are a range of factors that sit behind that, including economic growth, changes in the elasticity demand for electricity and price rises in electricity. Almost every factor involved in underlying demand for electricity has changed.

There is one particular aspect of the draft Productivity Commission report that is of interest to us which is the endorsement of the concept of optional firm access. Proponents of the OFA have argued that it addresses two problems, that of disorderly bidding and transmission congestions. The NGF does not believe that either of these are material problems or that the proposed solution will resolve these problems. A further concern is that the OFA remains a theoretical framework and we are concerned that there are significant difficulties and costs associated with implementing OFA.

On disorderly bidding, in 2008 Frontier Economics was engaged by the AEMC to estimate the cost of disorderly bidding within the NEM. This review nominated a

value of \$8 million per annum as the cost of disorderly bidding and that should be put in the framework of the NEM itself and that comes to a cost of around about 0.07 per cent of spot market value. Moreover, as demand has declined and transmission constraints have been removed, the number of constraint incidences has declined. To update this, the NGF will engage Frontier Economics to update the 2007-2008 analysis as to the cost of disorderly bidding and when that information is available we will provide it to this inquiry.

The Productivity Commission in the draft report raises a specific example in relation to Kogan Creek Power Station. Kogan Creek was built in the Downs due to the existence of a stranded coal resource, relatively low mining costs and superior access to transmission were critical factors in the location of that investment. It also benefits from its scale of productions, particularly large unit. Importantly OFA would not resolve the issues associated with the size and location of Kogan Creek within the NEM. OFA deals with issues associated with thermal constraints and the problems associated with Kogan Creek are in relation to voltage stability.

There are locational signals provided under the current regulatory arrangements to electricity generators. The most of notable of these is the location of fuel and water, risks of being constrained, environmental and community concerns, planning permission and a range of other factors all planned to generators' locational decisions. The costs of transmission in connection is one of many of those factors. The current RIT-T process does provide an implicit signal to investors in regards to locational investment.

In considering the impact of the OFA it's important to note that the majority of electricity is not sold through the spot market, it is sold through contracts and in looking at the impacts of OFA it is important to look at the impact on the contracts market. The uncertainty to a generator of delivering electricity into the future through an OFA model will increase the risk to generators and meeting contracted positions. The OFA therefore places a higher risk onto generators which they are required to manage and this would ultimately result in higher cost to generators which would be passed through to consumers.

We have engaged Frontier Economics to provide a review of the OFA and I will provide you with a copy of that report. One of its findings is that the OFA is likely to result in more centralisation of decision-making regarding transmission rather than less. Further, it does not find any material benefits over the current arrangements. It is not clear yet whether the AEMC will support the OFA proposal and it would be prudent for the commission to review the more detailed assessment that the AEMC is undertaking prior to making a recommendation in this area. I will leave my comments at that.

**MR WEICKHARDT:** Thank you very much indeed. Can you, before we start,

give us a bit of an update so we're clear on membership of the National Generators Forum? I understand that your composition and membership has changed recently.

**MR REARDON (NGF):** National Generators Forum represents electricity generators of all fuel sources across all states and territories, so coal, gas, hydro, wind, solar, government-owned, privately-owned businesses, some vertically integrated, some non-vertically integrated.

**MR WEICKHARDT:** I understand some members have recently left the forum.

**MR REARDON (NGF):** About 18 months and before I started with the National Generators Forum, so none in the - well, one has left due to a consolidation within the industry but no change in the past 12 months.

**MR WEICKHARDT:** It was put to us by another generator that some privately-owned generators have left because there's not a consensus view about the OFA. Is that correct?

**MR REARDON (NGF):** Certainly amongst the NGF membership there is complete unanimity in position and there is no conflict over OFA as a proposed model. There is a small number of electricity generators, as we highlight in our submission, that are very strong proponents of optional firm access but from looking at those submissions, I would say that the proposal as being put forward by the AEMC is one that they're supportive of in concept but with some significant changes to that proposed model, most notably of which they would like to see grandfathering of access, ie, no cost to existing generators, which is not the model being put forward by the AEMC.

**DR CRAIK:** What percentage of generators would you represent in the NEM?

**MR REARDON (NGF):** Around 60 per cent of the market off the top of my head.

**DR CRAIK:** Is that 60 per cent of the generational capacity or 60 per cent of the generators?

**MR REARDON (NGF):** Generational capacity.

**MR WEICKHARDT:** Can you outline what it is that the generators who have left your body because they support OFA - what do they see in OFA and take a different view about OFA for than you do?

**MR REARDON (NGF):** I don't really want to be in a position of arguing for someone who is not a member of my organisation - - -

**MR WEICKHARDT:** I assume you spend a fair bit of time debating this issue and if the differences have led to a divorce, I guess I'd like to understand - - -

**MR SCOTT (NGF):** I'd just like to say I don't believe transmission is the sole reason why some businesses left the National Generators Forum. There is a difference of opinion between members that have left the National Generators Forum in supporting optional firm access and I think it's incorrect to say that all those that left the NGF do support optional firm access, admittedly with serious caveats. There are some - - -

**MR REARDON (NGF):** The reason cited for their exit was specifically around the carbon price and compensation in relation to carbon price and that discussion transpired before the introduction of clean energy legislation.

**MR WEICKHARDT:** We'll put carbon price to one side. If you could just outline the reasons or help us understand because I'm not absolutely clear what the nub of the disagreement is between those who support and those who don't support.

**MR SCOTT (NGF):** The nub of the disagreement between?

**MR WEICKHARDT:** The generators who support OFA and those who don't.

**MR SCOTT (NGF):** The main difference of opinion is whether or not we require firm access to run our businesses and then also the difference of opinion is as to, if you were to argue for firm access, whether or not you would be successful in receiving such firm access from the regulatory bodies without having to pay for some costs of the network. You will note in submissions by the generators that they have argued that they wish to receive firm access but they wish to receive grandfathered transmission access rights that are tradeable and at no charge. It is CS Energy's belief that it was an unlikely regulatory outcome for regulators who actually ask for that and to be successful in doing so. That is really the main point of difference.

**MR WEICKHARDT:** I can understand nobody wants to pay for something that they think they might not need to pay for. But if some people support OFA, albeit maybe with some caveats, some people must take a view that it's going to achieve something for their business model whereas, I think, you made two points which are pretty fundamental: one is you think the problem is de minimis and the second is you don't think it would fix the problem anyway. Why is that other people have a different view on those two counts?

**MR SCOTT (NGF):** One of the main discussions is that it will fix disorderly bidding and our consultants have completed analysis on it, we completed analysis of it as well. Our consultants said that it was ambiguous as to whether or not it would fix disorderly bidding. We pretty much - just because we're practitioners in the

market - understand that under constraint conditions if you have these arrangements you would have an incentive if you're non-firm to price up to the other generator in order to make some money between your cost and the local price and if you were a firm generator you would occasionally have an incentive to actually create the constraint to also price value costs and then incentivise access payments to accrue to you.

**MR WEICKHARDT:** Sorry, you'll have to be patient with me here. If you're a firm generator for a given level of your full capacity, how can you create a constraint?

**MR SCOTT (NGF):** You can generate more at a loss and then receive greater payments for access.

**MR WEICKHARDT:** You generate more than you bid for in firm access, you mean?

**MR SCOTT (NGF):** Yes, exactly and your access - - -

**MR WEICKHARDT:** Let's assume you bought firm access for your entire capacity which you didn't exceed or couldn't exceed, you then can't create a constraint.

**MR SCOTT (NGF):** You can actually purchase more than your capacity. I believe that's the case in - - -

**MR WEICKHARDT:** But if you don't generate any more than you bid for, how can you "create" a constraint?

**MR SCOTT (NGF):** Imagine if other people are generating and you're generating as well and you have more capacity than them as such, what happens is that if the constraint is scaled down you might have proportionately more than the others. You could actually by generating create the constraint and therefore create the price differentials.

**MR WEICKHARDT:** But isn't that what you pay for, to be able to gain an entitlement to generate your capacity? I wouldn't have thought that would be - - -

**MR SCOTT (NGF):** You have paid to be entitled to receive the difference between the local price and the regional reference price which is what you're saying but, of course, you've just created the difference between those two by pricing away from cost. Now, the key point in doing that is that you - - -

**MR WEICKHARDT:** I thought OFA was based on you getting dispatched,



regardless of where you had bid, to the amount you had bid before you bought as firm access.

**MR SCOTT (NGF):** No, that's not entirely the model. The model does envisage that you could become super firm or - - -

**DR CRAIK:** You can become what, sorry?

**MR SCOTT (NGF):** You can become super firm, that is, hold more access rights in the hope that if there is any scaling it would be scaled down to - - -

**DR CRAIK:** More access rights than you can generate?

**MR SCOTT (NGF):** Than your generating capacity, that's true.

**MR WEICKHARDT:** So if you scaled back, you - - -

**MR SCOTT (NGF):** So if you scale back because it's a non-firm model, it would make you firmer. That is just one of the premises and also the opposite is true in that you could become a non-firm generator. We looked at the incentives for disorderly bidding and we did see that there was incentive for generators under constraint circumstances to manipulate their local price. The optional firm access did respond to some of our initial criticisms against a previous AEMC proposal because a previous AEMC proposal, I think, was option 4 and in the previous incarnation of this model - I can't remember exactly the name at the time - but it was option 4 and the compensation was payable direct off the offer price of the constraint generators, payable from one to the other.

In that case it was completely a discretionary auction, so whatever you offered you received the difference against that and we had some real concerns that would be negated whereas less so now in this instance. But if there are only a few generators behind the constraint, say, for instance, just two, we believe that there is very great opportunity that someone would disorderly bid, price away from the costs, possibly to unconstrain to constrain in order to manipulate access settlement.

**DR CRAIK:** Those generators that support optional firm access, what's their view of this issue?

**MR SCOTT (NGF):** I don't know.

**MR WEICKHARDT:** Do you mean to say you didn't have long discussions about - - -

**MR SCOTT (NGF):** No. I don't have long discussions with - well, they're not

members of the association now.

**MR WEICKHARDT:** No, but they originally were.

**MR SCOTT (NGF):** We didn't go into that, the proposals weren't available at that stage. I mean, it's 18 months or almost two years ago now that they left and yet the optional firm access has only been out in the last few months.

**DR CRAIK:** So what was AEMC's response to your view?

**MR SCOTT (NGF):** The AEMC believes that there is going to be a natural tug of war between the generators in that one will do one and the other will do the other and they will naturally pull each other and there will be a competitive equilibrium. We, in our technical response, have questioned whether or not that equilibrium will be properly achieved. We believe that an equilibrium such as that in competitive bidding would occur if it was repeated often and frequently but transient congestion happens, outage conditions, strange constraints, possibly not, we don't see that that could occur.

There is also an issue about the local price and the regional reference price. If a generator withholds some capacity in order to increase the price at the regional reference price it's effectively trying to forego some revenue and profit now to justify a higher price in the future which it can also profit from selling a derivative contract into the future. In effect a higher spot price now means that there will be higher future prices, you can hedge around and put a higher rate and effectively hopefully own your fixed capital back with those contract prices.

**MR WEICKHARDT:** So you are telling me that generators quite deliberately withhold capacity to manipulate the prices.

**MR REARDON (NGF):** No, that wasn't where you were going with that.

**MR SCOTT (NGF):** No, that wasn't really where I was going.

**MR WEICKHARDT:** Really? I thought that was - - -

**MR SCOTT (NGF):** No, no.

**MR WEICKHARDT:** We'll check the transcript.

**MR SCOTT (NGF):** Where I was going with that is saying that what you have to do - and this is as stated by the AEMC and its review of market power - if all the generators just bid in a short-run marginal cost, then we will receive the price at short-run marginal cost and we'll all be completely unprofitable. That is not really a

great outcome for the electricity sector.

**MR WEICKHARDT:** Except every short-run marginal cost isn't identical, there is a cost curve.

**MR SCOTT (NGF):** That's right.

**MR WEICKHARDT:** That's what happens in competitive markets.

**MR SCOTT (NGF):** Maybe in the most expensive one would then create inframarginal rents that everybody can receive if you had the perfect asset mix.

**MR WEICKHARDT:** That's what normally happens in competitive markets.

**MR REARDON (NGF):** It's a highly competitive markets and there are a number of different generators with different technologies at different input costs and they bid at varying different prices depending on what's occurring with the market. The contracts market is particularly important in terms of managing those long-term costs and the vast majority of electricity sold in the market is sold through forward contracts and derivatives market is another one which is an important component within that and so presently the forward contracts market has been challenged by the existence of a carbon price within the market and has meant that a number of generators have moved to over-the-counter derivatives to manage their long-term contracts.

So to present that as a challenge from the generators' perspective what will be the price of electricity on 1 July 2015 is an important question? They may be able to forecast what they think demand and prices for electricity might be but with the carbon price on top of that it's exposed to a whole range of domestic political issues and international political issues and it's very difficult therefore to write a forward contract on 1 July 2015 for the price of electricity. As a consequence there is a risk margin that's added to that forward contract, therefore, having a price impact. So in order to manage that risk for the number of generators who have chosen to use the derivatives market to manage that risk which effectively allows a two-part pricing contract, one price for electricity prices and one price for whatever the carbon price happens to be in future generations. That means that the individual business's exposure on the spot price is a limited consequence to their business.

**MR SCOTT (NGF):** Shall we get back to the local price now? The local price, there is no contracts market associated with the local price. There is no future expectation. The local price is really just to settle access in that five minutes or that 30 minutes, depending on the choice of settlement period under the optional firm access model.

**MR WEICKHARDT:** Can I just ask you to go back to a point you raise in your submission and you say that optional firm access effectively exposes generator to a prisoner's dilemma. If I follow that logic I would say once a significant generator in the area bids for optional firm access all his or her neighbours will decide to do the same if a prisoner's dilemma situation exists. If that's the case, then all generators in the area will be treated as firm and be compensated if they're not, so what's the problem?

**MR SCOTT (NGF):** Compensated if they're not - the problem is that if you were to consider that, firstly, what's the cost of the access, the price associated with it?

**MR WEICKHARDT:** Presumably the cost of the access is as indicated by the transmission company and oversight by the AER so it will be cost of actually delivering physically - - -

**MR SCOTT (NGF):** As planned.

**MR WEICKHARDT:** - - - the firm access that's there. So the generators effectively had bid for firm access and have got firm access, so they're not constrained off. Surely you've talked about the risk for generators of being constrained off. What's not to like about being in a situation where you're not constrained off?

**MR REARDON (NGF):** The first challenge there is an information symmetry in terms of pricing, so we've provided an example in our submission there in regards to Tumut accessing the nodal price in New South Wales and roughly 650 different constraint equations that need to be run in order to work out whether you can get electricity from that particular generator to the node.

**MR WEICKHARDT:** I noted that with interest but maybe it's just my brain's limited capacity to understand these issues but it seemed to me that you were unnecessarily complicating the issue and at the end of the day surely it's up to the transmission company to decide how it delivers firm access to the generator and the generator doesn't need to worry its little cotton socks off over the 632 flow gates, it just says, "I'm on firm access for the regional price."

**MR SCOTT (NGF):** We do.

**MR WEICKHARDT:** Why?

**MR SCOTT (NGF):** We do because if you think about the optional firm access model, what has to be decided by the network companies it has to decide quantities and a price going out into the future based on the central plan view of its access schedule, so expectation of utilisation of the network of generation developments and

transmission investments. The company has to come back, it has to allocate that and relate that back to a price per flow gate for an access megawatt per generator at different locations.

**MR WEICKHARDT:** But aren't you applying for access to the regional price?

**MR SCOTT (NGF):** No, the good thing is that you can purchase that access and that's supposed to be guaranteeing you access to the regional reference node. But the problem is there is no guarantee under this model. For there to be a guarantee - this is called a self-funding model in that the payment or compensation to generators is only funded by the amount that is paid by consumers, so as a result - for it to be firm it needs to go into deficit.

**MR WEICKHARDT:** Sorry, who is going into deficit?

**MR SCOTT (NGF):** First of all, consumers are only paying the regional reference node in this instance, okay, so there will be some instances where, unfortunately, if there isn't enough transmission network availability the optional firm access scales down the amount of access it's providing, it doesn't pay compensation up to the amount of access that's written into the connection access agreement, so effectively the amount that you've bought, so it's not firm. So what that means is that generators will get paid less than they were expecting in the purchase of the access agreement.

**DR CRAIK:** How can a contractor not meet the terms of the contract?

**MR SCOTT (NGF):** The term of the contract is that we won't be paid when it's scaled down, we won't be compensated to the regional reference price, we will be paid a lower price if you're constrained off. We will be paid a lower price. What that means is that will discourage us into buying into the future or forces us to buy more, so it will discourage us. It creates risk and it means that we're less likely to enter into electricity derivatives against the regional reference node into the future because the contract is unfirm.

Now, a way of dealing with that is to say, "Okay, I want the generator to enter into a contract into future at the regional reference node." While I can make that contract financially firm, someone has to fund the difference. I can't scale down the volume. If I keep the volume there - this is what happens in - there is an element of TNSP support where they can enter in a megawatt value and effectively fund that and pay that. But that money could be paid by anybody, it could be paid by consumers and so what it would mean is a guarantee 100 megawatts irrespective of the transmission capability you pay, the generator will receive the regional reference price even if they're constrained off. You're just guaranteeing the revenues.

Of course, that comes at a cost but it may well be efficient. If you wanted the

generator to trade out in the future, an electricity derivative contract is the most efficient thing to do, you wanted to bank that investment, then someone has to take the risk. This model requires the generator to enter into a contract that says, "We're not guaranteeing you that there won't be any reduction in capacity. You take the risk." You enter the firm price, there's no caveat on the price, but there will still be a risk. That risk is exacerbated in this model because unfortunately the amount of flow gate capacity is dependent on other participants that aren't seeing the efficient price. You will notice this model has a single regional reference price for all demand customers, it's not a nodal pricing. So it means that load is not exposed to the local price, the efficient price.

So, for instance, a load in a generational area that has been constrained wouldn't see a lower price, it doesn't get rewarded for effectively reducing congestion.

**MR WEICKHARDT:** Unless it's had some contract arrangement.

**MR SCOTT (NGF):** It will always be paying a regional reference price.

**MR WEICKHARDT:** But ultimately it only pays the contract price if it's got a contract.

**MR SCOTT (NGF):** Yes, that's right which is settled against the regional reference price, so we can't really discriminate against this local node. But if it was receiving its local price, then it could enter into a contract with a local generator and would offset the different nodes. Just to get back to the original point, the amount of capacity across the flow gate is dependent on the amount of demand behind the flow gate. It's also dependent on the generators who are constrained on which this model doesn't support either because they don't receive their local price, they only receive the regional reference price. So if either of those parties go away, it's the requirement for the network company to reinforce or maintain the firm access standard.

A generator here or a smelter here could close tomorrow, the network company might have to enter into planning arrangements and might have to try and get easements. It might be unsuccessful in doing so and suddenly you completely scale back here and you're exposed to complete losses. It's because it's not a firm access model. This is really why generators aren't that supportive of it. It's not really giving us anything. It's making us pay for a share of some networks and not giving us anything in return.

**MR WEICKHARDT:** So why do some generators think it's a good idea?

**MR REARDON (NGF):** I think on the basis that they believe that it will be a

grandfathered access right and therefore they're not paying for the sunk costs. We see that that's an unrealistic outcome of this process and it's not something that's on the table as a proposal. The proposal on the table is, as David said, generators paying for the sunk costs of transmission.

**MR SCOTT (NGF):** With no guarantee of - - -

**MR WEICKHARDT:** You might like to have a look at the submission AGL put to us and the transcript of their discussion with us in Sydney a couple of weeks ago. They didn't make that caveat, they just said they thought OFA was a good thing.

**MR REARDON (NGF):** I've not seen that transcript.

**MR WEICKHARDT:** Well, have a look at that. Also, in terms of your work with Frontier Economics and getting them to update their information, it would be worthwhile trying to get hold of the work that the AER has recently done on the cost of disorderly bidding and their analysis of this because their analysis of this and, indeed, the comments that we made in our draft report is that there are some second-order effects, longer-terms effects from disorderly bidding that do have significant costs and one of those is the fact that interconnectors, due to constraints in the intra-regional network, are sometimes not doing anything at the very times you'd hope they were doing most, that is, when there is price separation between regions you find sometimes the interconnectors are clamped. Now, it's our understanding from the work that's been done so far that OFA will help that issue significantly.

**MR REARDON (NGF):** This work by the AER is publicly available work?

**MR WEICKHARDT:** I understand they spoke about it at the hearings in Sydney and they indicated that they intended to release that.

**MR REARDON (NGF):** Okay. To the best of my knowledge it's not.

**MR WEICKHARDT:** Get Frontier or you to have a talk to them because they definitely refer to the fact that they've done this work and they intended to release it.

**DR CRAIK:** They seemed happy to talk about it.

**MR SCOTT (NGF):** We tend to find that - and we found this also with some other comments on the Market Power Rule change as well that often analyses focus on just the spot market outcome and very short time periods in the spot market and they highlight particular small elements of behaviour and then magnify those. So, for instance, I believe under the earlier phase of the transmission review AEMO came out with a report analysis looking at an instance of the transmission constraint and came up with a laughably huge figure of \$300 million as payment of extra settlement

payments to generators associated with it.

That is assuming that we don't sell our output into the future with hedge contracts. One just assumes retailers don't hedge. If we were paid 300 million, then the retailers would have gone out on business on that and the very fact is that we didn't and a lot of the time bidding disorderly as such is just a forced reaction to local congestion that requires you to maintain your dispatch level up to a level of contracts that you sold into the future. The contracts market is the efficient market. It's the one that indicates whether or not you can invest. It's the commodity exchange into the future whereas spot market is really just the price now today for this five minutes and this half an hour. It really serves a lot less function than the future expectations of prices, that's what actually banks - that's what is a leading indicator, it banks projects, it secures cash flows and it really allows us to manage our business.

**MR REARDON (NGF):** And looking at any five-minute, 15-minute or even half hour or day trading in any particular region within the NEM you can come up with a variety of different conclusions.

**MR SCOTT (NGF):** It's extremely misleading.

**MR WEICKHARDT:** I guess it's complicated, but at the end of the day there is some analysis by somebody who has studied it in detail who is not taking the same view as you are that this is a trivial issue that you can - I think immediately if we said, "The total cost across the NEM of disorderly bidding was \$8 million a year," I don't think any of us would be spending much time talking about it.

**MR SCOTT (NGF):** Can I just raise one point. There was a report prepared for AEMO by Intelligent Energy Solutions which looked at whether or not the NEM was dynamically inefficient, so whether or not it co-optimised transmission and generational investments into the future in an efficient manner. It aimed to do this by looking at the transmission constraints and assigning a violation penalty factor associated with them. It found that there was very little difference between a transmission financial rights model and the NEM as now because largely \$30 million was the benefit associated with their modelling from implementing such a scheme. The key conclusion - they said, "The chances are that's an improvement over the status quo, we see that as good." Whereas when I read it I thought, "Oh, it says really the NEM today isn't dynamically inefficient, it is allowing efficient outcomes to occur. Generators are locating in an uncongested part of the network, they are locating in the correct region where demand is growing, where the wind resource is greater. They are looking at transmission costs. We do see that in the NEM."

**DR CRAIK:** So if it's so clear to you and your colleagues, why is not so clear to AEMC?



**MR REARDON (NGF):** The AEMC haven't concluded, they've looked at what is supposedly - - -

**DR CRAIK:** No, but in their interim report so far - - -

**MR REARDON (NGF):** But their interim report doesn't recommend OFA, it presents two options, either effectively the status quo or what is an enormous change to current arrangements in order to fix what we see as two relatively small problems and they will undertake a cost benefit analysis on that and make a determination and a recommendation.

**MR WEICKHARDT:** In your submission in section 3.6 you outline a number of advantages of the current RIT-T process, the public scrutiny, the modelling, the assessments are done close to when the asset will be built so the information is current. You basically think the RIT-T is a good process and works well?

**MR SCOTT (NGF):** Well, the RIT-T - we've had a look at the Heywood interconnector study most recently and we believe that given the commercial environment in which the RIT-T is being applied doesn't bear any relationship to the current commercial reality in the electricity sector which is that declining demand, huge uncertainty over regulatory intervention would be crazy to make significant investments now and we see that the RIT-T as applied by AEMO and Electranet in that instance is assuming lots of generators will turn up, will be largely unprofitable and that the benefits associated with these generators will accrue to the interconnector.

So we've got some doubts that it could be - I mean, it could be applied incorrectly but its main aim is to derive efficient outcomes, it's an economic test, its aim is to be open, transparent and clear, it allows everybody to consult. So we're criticising it, others are criticising it too, others are supporting it. But all of that feeds in, it's a clear process.

**DR CRAIK:** I think you suggested early on it was a good process.

**MR SCOTT (NGF):** Yes.

**DR CRAIK:** Then you say, "We don't like the one on the Heywood interconnector."

**MR SCOTT (NGF):** It's an interesting one the Heywood interconnector but it doesn't actually - - -

**MR REARDON (NGF):** The question is in the RIT-T process - the question is whether that upgrade is something that we believe there a cost benefit to.

**DR CRAIK:** Shouldn't the RIT-T make that evident?

**MR REARDON (NGF):** Yes, so that cost benefit analysis is currently under way. If there is a clear benefit from making that investment in terms of electricity prices consumers, then certainly we're supportive. At this stage we're questioning as to whether that cost benefit analysis of that particular upgrade will gain a return to consumers.

**DR CRAIK:** Isn't that the process of the RIT-T to raise that and then the AER ticks off - - -

**MR REARDON (NGF):** That's right.

**DR CRAIK:** So are you happy with the process of the AER to tick off on that cost benefit analysis appropriately?

**MR REARDON (NGF):** Yes. We remain confident in the RIT-T process.

**MR SCOTT (NGF):** With regard to the network companies annual planning reviews, they go through their five-year price controls, they also go through annual planning reviews. They consult with industry participants - I go to the annual planning review of Powerlink in the Queensland region, I look at the network upgrades. I know that they're going to build out some congestion within central Queensland between CS Energy generators at Cowbell and Gladstone. I am familiar with their planning approaches. We criticise their demand forecasts, we use some of their demand forecasts. We see the evolution of the network as they plan and we can possibly feed into it. For instance, Powerlink has identified that south-west Queensland has strategic advantage in terms of reinforcing the network to meet increasing demand than central Queensland. That's been explained to us. That's in response also to the building of lots of generators in that area, Millmerran, Kogan Creek and the like. So we see it as being a process whereby it's co-optimised between generators and transmission companies.

I believe the AEMC believes the planning approach, the annual planning reviews, the application of their RIT-T within their own planning approach, has been more transmission led. They have built the transmission, and generators arrive, and that appears to be a difference of opinion between the National Generators Forum, our consultants and the AEMC.

**MR WEICKHARDT:** You will have seen in our report that we're quite critical of the RIT-T process at the moment, unlike some people, yourself included, who see beauty in it. We thought there were two words in it that were misleading and deceptive, "regulatory", the regulator observes but doesn't do much with it, and

"test", a test that is set by the transmission company, marked by the transmission company and passed by the transmission company. Do you have any concerns that, at the moment, whilst everyone can observe what's going on, the regulator doesn't actually have much stroke if they don't like what the transmission company are coming up with in the RIT-T.

**MR REARDON (NGF):** I'm not sure we passed comment in relation to the AER's powers in regards to the response to - - -

**MR WEICKHARDT:** I don't think you did, but I'm asking you that question.

**MR REARDON (NGF):** I think the recommendations arising in relation to the focus being on outcomes for consumers is a positive step forward. I think whenever we're looking at any form of change, looking at the consumer perspective is the right way and I think from that perspective, the proposed changes would be consistent with the outcomes that the NGF would be looking to achieve. I think bringing that back then into the distributor around the OFA, we don't see that the consumer will gain any benefit from the OFA proposal and in fact the risks and uncertainties associated with the contract market may in fact increase prices to consumers.

**MR WEICKHARDT:** Just while we're talking about consumers - your submission isn't page numbered - but in section 5.1.1, you throw some sort of doubt on our suggestion that there should be a reliability framework which is based on the customer's value on reliability and you're suggesting that it would be hard to engage customers meaningfully, there would be significant additional costs for very little reward. You would encourage the commission "to establish further safeguards to ensure there are real benefits for customers" - in block letters - in this area. That's exactly what we're trying to do. The fact that the market - the customers are different is an acknowledged fact; that's the reality we live with. But what are you suggesting, that it's all too difficult and you just forget the customer and what they're prepared to pay?

**MR REARDON (NGF):** No, not at all. I think we're agreeing with the principles of where you're heading there in terms that the focus is on benefits for consumers. I don't see that as being a disagreement.

**DR CRAIK:** Are you just saying that it's an art, not a science? Is that what you're saying?

**MR REARDON (NGF):** Yes, it is inherently problematic.

**DR CRAIK:** But given the increase in the network costs in Victoria relative to other states, one would suggest that it might have some value, given the different ways reliability is - so do you prefer a VCR approach to a deterministic approach of,

"We never want to have a blackout in this town ever"?

**MR REARDON (NGF):** I'm just going through the rest of our comment on that. I don't think we have a fixed view either way; whichever approach - with the benefit of hindsight, you can always reassess the outcome and I think that relying on forecasts of demand and peak demand that are reliant on so many different variable factors are the problems that we face when we're looking at the OFA model as well. We're still looking at some form of centralised planning and modelling to make those decisions.

**MR WEICKHARDT:** You appear to be concerned that trying to assess what customers are prepared to pay for is highly subjective - your words - and highly dependent on choice and methods.

As such, VCR should not be considered as an indicator of value that the regulator should consider when making a decision of how much system reliability should procure on behalf of customers.

I'm not sure what you're suggesting as an alternative. Do we throw a stick in the air and decide which way it lands or - - -

**MR SCOTT (NGF):** Maybe the regulators should have looked at all the price determinations, did a forecast of the future with tariff increases and then surveyed the customers then. That could have been an approach. But it really is outsourcing it to a survey, the value of customer reliability.

**MR WEICKHARDT:** There's a methodology we suggested and you first of all find out what customers want.

**MR SCOTT (NGF):** The survey was pretty subjective when we looked at the results and the application of the - - -

**DR CRAIK:** We're suggesting to get the Australian Bureau of Statistics to develop their methodology and undertake appropriate surveys of - - -

**MR SCOTT (NGF):** That would be a reasonable idea. I would imagine now, after a period of significant price increases that it would be in the negative; after a period of blackouts, then it will be in the positive, and we'll go through the boom and bust cycle as we've seen in Queensland with the two Somerville reports. There was the Somerville report after poor distribution reliability required significant and higher domestic standards and it required an awful lot of investment. Somerville was reappointed by the Bligh government and came back and said, "Look, we really should moderate these standards." More work has been done and the independent review panel has moderated that. So jurisdictions are actually trying to start to take responsibility for this now and you can't really just outsource it to a survey. A

survey is so subjective. We saw the results of this. It wasn't even a real survey.

**DR CRAIK:** The survey we're talking about hasn't been done yet by the ABS.

**MR SCOTT (NGF):** I feel that we probably don't have a great concern about the survey, the concept of using a survey, we just wouldn't trust the results too much. We saw a range in the value of customer reliability of 10 to 40 thousand and more in some of these survey results. They highlighted a number of different methods. I think the point is it's difficult and - - -

**MR WEICKHARDT:** But might it give a better result than a minister in a dark room saying, "I think this should be an N minus 2 standard"?

**DR CRAIK:** We haven't seen the great swings in Victoria as we have seen in New South Wales and Queensland in investment.

**MR SCOTT (NGF):** Swings in investment?

**DR CRAIK:** In preferences for investment - you know, "There's a problem. We're investing too much" - we haven't seen it in Victoria, so I guess we - - -

**MR SCOTT (NGF):** I don't believe Victoria had the same demand growth that we've seen in Queensland over the last 10 years, and they've got their demand forecasts wrong. A lot of people have made mistakes. Maybe they made mistakes, maybe they were honest mistakes, I don't know, or maybe there was manipulation of the test so that they could receive more revenue. We're certainly not in a position to know that. We certainly know that our businesses are hurting because network prices have gone up. So we would like to see a reasonable level of reliability. I think here in the response we're just saying the value of customer reliability through its survey, we've seen some suspicious results from previous surveys and different methods, and we're a bit sceptical of it.

**MR REARDON (NGF):** I think as our submission says, we would like to ensure that there are safeguards in place to ensure that the VCR is looking at the best interests of consumers.

**MR WEICKHARDT:** That's certainly the intention behind our recommendation. Can I go to the issue of interconnectors. There seems to be some disagreement in these hearings as to whether or not OFA will actually allow people effectively, say a retailer, to purchase firm access over an interconnector and certainly one of the issues that were noted as a current concern is the degree to which people can't hedge across regions effectively. What's your understanding of the degree to which OFA will actually provide some basis for a retailer to actually gain firm access over an interconnector?

**MR SCOTT (NGF):** Firstly, you've got to look at the existing capability, so if we have a look at the existing transmission capability of interconnectors, the interconnectors are included in intra-regional constraint equations. The current arrangements allow a generator on the left-hand side of that constraint equation, it is constrained, the price down to minus a thousand and get greater dispatch than the interconnector which is still priced at the regional reference price of the other region.

That is constrained back. The proposals are as such that the transition to access will be granted to generators within the region, okay, so that most of the existing capability or capacity through the flow gate that's affecting the existing interconnector capacity is going to be allocated to the regional generators. So that means that the existing capability of the interconnector will receive less access settlement and so that means that under the existing proposals which we support - we support this element of the proposals - means that there won't be a lot of extra capacity provided to that retailer who is trying to hedge into the other region or the generator.

**MR WEICKHARDT:** Is that true of every interconnector?

**MR SCOTT (NGF):** I don't believe it is true of every single interconnector because under this proposal, the suggestion is that it would - imagine it works completely. It should prevent disorderly bidding and in some instances the generators on the left-hand side of the constraint, constrained off, will have a price higher than the regional reference price in the other region. In that instance then, the interconnector will be dispatched to a greater extent and it wouldn't be pushed all the way back to zero as was the current arrangements, so there's probably some residual in there. With the current congestion within central Queensland, I would expect the actual volume would be slightly higher, say a hundred or 150 megawatts, rather than zero. So it would protect a little bit more but people are generally rounding that down to zero, roughly equivalent to the current arrangements.

With regard to the future arrangements and the auctions associated with extra or incremental capacity to the interconnectors, we have some basic concerns about the arrangements there, mainly because interconnection is subject to significant wealth transfers between producers and consumers in the different regions and we have a suspicion that some people will look at fitting in to receive to effectively build the assets, so bid above the asset cost, because they're willing to pay for a share and effectively benefit from the transfer. So you might see some investment in capital equipment that really is just for someone to receive a transfer from a producer in another region or consumer in another region. So we struggle to see the auctions working properly in terms of delivering efficient interconnection.

**MR WEICKHARDT:** I guess, perhaps not surprisingly, I get the sense that the

generators are happy to disregard spikes in the end price and the wholesale price that consumers end up wearing as mere transfers, but when you talk about generators having to pay for access rights which are transfers again, the generators squawk a lot about that, so you write off transfers in one regard but squawk about transfers in any other direction.

**MR REARDON (NGF):** I wouldn't define the price spikes that occur in the spot market as being transfers, they're simply reflective of market conditions, and investment in the NEM is based upon a minimum price recovery to offset the cost of investment and that necessarily involves a certain amount of fluctuation in the price. It's the very nature of the NEM, the five-minute spot price, that there should be significant variation in that, and within the course of a year, it will range between minus a thousand and 12 thousand, but in recent years, predominantly very close to - well, declining and down to a price that's around half of what it was in the mid-1990s in real terms.

**MR WEICKHARDT:** Clearly it depends on the weather and all sorts of other issues like demand.

**MR REARDON (NGF):** Natural disasters and all sorts of things.

**MR SCOTT (NGF):** With regard to transfers, one of the proposals - and the OFA does nothing to fix this and you could consider it to be a problem with the current arrangements - but we don't believe it's a problem that would require fixing to change the whole design. Currently there's a transmission constraint in central Queensland; there's a triangle between Stanwell, Gladstone and then Callide. So anything east and north of this triangle is generally more expensive generation because it's located closer to the coal exports or its more peaking capacity in the far north of Queensland where there isn't plentiful fuel supply. So all the cheap generation is down in the south-west or central west of Queensland.

Under the current arrangements with just the regional reference prices and regional average, what will typically happen under these constraints, it will constrain on Gladstone and Stanwell and they're generally more expensive. It will constrain them under a price that they're not happy to pay and it will constrain down generators when they're willing to be paid. In the instance, CS Energy actually owns three generators either side of that constraint. If we were just to leave that constraint to occur, CS Energy would lose money between Callide power station and Gladstone power station, mainly in the difference in cost. Irrespective of what the price is, we would lose money because our cheapest generator would not be running. This is the effect of the constraint; it causes a higher production cost. But because the Gladstone OFA price is higher than the regional reference price, that's why the constraint is binding there. So that cost would effectively just be a transfer from us because we're not receiving it. We could be receiving that, but we're not.

So what we have to do in response to that in order to maintain our dispatch, our most efficient dispatch, which is run Callide first which is a lot cheaper, 10 to 15 dollars per megawatt hour, which is certainly a significant difference in marginal cost, we need to bid disorderly, as it's said. It's not strategic behaviour at all. It really is just avoiding us subsidising that constraint equation. Now, in some instances where the other interconnector is also constrained, under some instances that can increase in a price and create a spike and then we end up with a situation where more bid disorderly and the interconnector is pushed away and then it's clamped. But this is just a feature of the fact that we have an average price across the region.

It seems like really, really inefficient behaviour but the key thing is that all of the generators selling in Queensland face one price; all the consumers or retailers acting as their agent face the same price. We can enter into contracts into the future. As soon as we start introducing different prices for different participants, (1) we're making it more difficult for them to trade and then we have to come up with an administered incentive to enable them to trade to make sure there's no risk into the future. That's really where the problem is here. We start from creating two different prices for buyers and sellers and then we paper over it with the uniform access that you have to pay for. We don't believe it will work that efficiently.

**MR WEICKHARDT:** We're almost out of time, but you make a comment in section 5.1.2, at the end of that section you say:

Our recommendation of our transmission planning has several elements. The first is the proposal to implement probabilistic planning as used in Victoria.

You say:

The NGF has continued to question the practical application of a probabilistic approach as the network is and can only be operated in real time on a deterministic basis. It is unclear how this fits in with the probabilistic planning model.

Then you go on to say:

It is also interesting that contrary to this recommendation, the commission has reached the view that the transmission of the NEM is appropriately sized and this view tends to imply the regime is working.

I don't know where you found in our report that we believe that the transmission in the NEM is appropriately sized.



**MR SCOTT (NGF):** So is that a misinterpretation of your comments on interconnectors?

**MR WEICKHARDT:** Yes, interconnectors are a small component of the whole transmission network and based on others' much more sophisticated analysis, there are some examples where the transmission network has been significantly over-invested in.

**MR SCOTT (NGF):** Yes, because the standards have been too high. I think that probably leads us on to a good way to close, in that if there's - I think the standards and setting the standards correctly is really where you derive the right amount of transmission. Of course if you set them too high, there's going to be far too much transmission built by the network company. Even with an optional firm access model and you set high reliability standards, there's going to be too much network built by the network monopoly.

**MR WEICKHARDT:** I'm still not sure, if generators are allowed to optionally buy firm access and particularly if your view is correct that this isn't worth a tinker's cuss, I'm not sure why it's necessarily a bad thing because I assume if it's worth nothing and it won't have an effect on congestion, they won't mind.

**MR SCOTT (NGF):** Unfortunately, we've got to make a snap judgment on this. The price will change if someone else makes a decision. That's one of the problems. We've got to then really decide how much we want in the future as well so we've got to make long-term, really tricky decisions about this. Also we do believe that if you enter into a contract or option and sink a lot of money into future payments in your access charge there could be a clever generator sitting in the constraint as well that starts to erode some of our value and that's a concern as well, we don't know how it will play out and that's why we've raised the issues around disorderly bidding.

In addition we see no value in this network, it's already built, consumers are already paying. If we start paying we believe it's a transfer - - -

**MR WEICKHARDT:** However, transfers aren't a problem. You told us.

**MR SCOTT (NGF):** We said that incentives for transfers should be avoided on the interconnectors and we also said that wealth transfer with regard to paying for the network should be avoided as well.

**DR CRAIK:** On the view about the AER, I guess we would be interested in your experiences with the AER if you have many.

**MR REARDON (NGF):** We're about to engage with them and have some lengthy

discussions around optional firm access and we have an ongoing working relationship with them. But the AER is not a regulator of generators.

**DR CRAIK:** I realise that but you did - - -

**MR WEICKHARDT:** Unless they do things that are contrary to the law.

**DR CRAIK:** But you thought our suggestion of a review of the AER was redundant which suggests you have some reason to say that.

**MR REARDON (NGF):** Which recommendation is this, sorry?

**DR CRAIK:** 21.1 was ours.

**MR REARDON (NGF):** Independent review.

**DR CRAIK:** Yes.

**MR REARDON (NGF):** The recommendation that's redundant is recommendation 21.2 is proposed, so it was just a question over having both of those recommendations concurrently. So the recommendation that the AER be reviewed and that the AER have greater control over and accountability for. It's not an in-principle objection to a review of the AER.

**DR CRAIK:** Okay. We saw 1 as useful to inform 2; 21.1 is useful to inform point 2.

**MR WEICKHARDT:** Thank you very much indeed for appearing and if after you engaged with the AER on disorderly bidding and any potential costs thereof and you have other points of view, please - - -

**MR REARDON (NGF):** We will certainly provide that research to you when it's available. The data is not available until the end of this calendar year and so the work will commence after that and we will make it available as soon as we can.

**MR WEICKHARDT:** All right. Thank you very much indeed.

**DR CRAIK:** Thanks a lot.

**MR SCOTT (NGF):** Thank you.

**MR WEICKHARDT:** We will now move to our next participant, EnerNOC. If you could give your name please and the capacity in which you're appearing.

**DR TROUGHTON (ENOC):** Certainly. I am Paul Troughton, I am manager of regulatory affairs for EnerNOC in Australia and New Zealand.

**MR WEICKHARDT:** Thank you for your second submission to the inquiry and we appreciate that and your involvement in the inquiry. If you want to make some introductory remarks.

**DR TROUGHTON (ENOC):** I do have a brief introduction. You know who EnerNOC is, we're demand side aggregator. We work in energy efficiency and demand response in many different markets. One of the things that we know is that demand response is the lowest cost way to manage extreme peaks in demand and looking at the NEM it's probably clear that we have well below an efficient level of demand response here, so this suggests that consumers are paying much more than they ought to be and we would really like to fix that.

I really appreciated the commission's decision to interpret its brief broadly because there have been far too many narrow reviews that ruled all potential solutions out of scope, so that's very good. One of the traps that's come up in other reviews is the phrase "cost-effective pricing". It covers a multitude of sins, some of which can be very broad and fairly ineffectual, some of which can be very targeted and highly effective and it's important not to confuse the benefits of one with the acceptability of the other, so that's a track which I think you've done well to stay clear of, so thank you.

**DR CRAIK:** It took us a while to get there.

**DR TROUGHTON (ENOC):** I think there are really two separate issues to do with tariffs and cost reflectivity. The first is cross-subsidisation of consumers who have particularly peaky load profiles - houses with six airconditioners - by those who have flatter and cheaper to serve load profiles, perhaps the consumer without an airconditioner or a commercial industrial load tends to be fairly flat. It's obviously right in the long run to seek to remove cross-subsidies like that. You get resources allocated more efficiently. The suggestion of having tariffs based around long-run marginal costs seems like exactly the right way to do that. The unfortunate part about doing that is if you want to get these correct long-term price signals to all consumers, you need to get interval metering to all consumers so you have to have the smart meter rollout.

That is one issue but I think there is a completely separate issue which is about bringing about behaviour change and that would be done with - you want to get

people to reduce the peak seen by the network so that you can reduce what's spent on network augmentation and generally reduce costs in the long term but also in the nearer term.

**MR WEICKHARDT:** Can I just interject and say we're not absolutely adamant that people have to reduce the demand. What we're saying is if they want to continue to use power at that stage they should pay the real cost of it.

**DR TROUGHTON (ENOC):** Yes, so that's the cross-subsidy argument. There is a separate issue which is - - -

**DR CRAIK:** We don't mind if they don't change their behaviour as long they pay the whole price.

**DR TROUGHTON (ENOC):** Yes, and that gets rid of the cross-subsidy and that's great. But you still end up as a nation spending more on network infrastructure that you would otherwise need to.

**DR CRAIK:** But if people are prepared to pay, that's what they place their value on and - - -

**MR WEICKHARDT:** It's not evil, people can go and drink Grange Hermitage and it might not be the sort of stuff that everyone has every night but if they like to, well, so be it. It's a free country.

**DR CRAIK:** We don't believe in efficiency for efficiency sake. People have to value that level of efficiency.

**DR TROUGHTON (ENOC):** But my point is that you can let those people do exactly that if they're willing to bear the costs while also bringing about a better, more efficient result overall if you don't restrict yourself to cost reflectivity. So what you can do is say, "We can reduce costs overall if we persuade somebody to do something that will make the overall profile less peaky in a way which will allow us to avoid augmenting network and generation and so on." You don't do that with the long-run marginal cost tariffs. That doesn't give the right signal. It's the economically efficient correct signal for getting rid of cross-subsidies but it doesn't bring about behaviour change in the nearer term, so you want to have a strong targeted incentive.

**MR WEICKHARDT:** When you're say "it doesn't bring about" you're, I think, saying "we don't know whether it will or not".

**DR TROUGHTON (ENOC):** No, I think it's going to be less effective than something which is explicitly designed to bring about behaviour change.

**DR CRAIK:** I think my view from water where there has been at least one retail study that I know has looked at this issue that the price issue - it's a longer-term issue but it does bring about change over the longer term but in the short term it's things like restrictions that change behaviour but in the longer term price will actually do it.

**DR TROUGHTON (ENOC):** I think there are less damaging ways than restrictions to bring about nearer term - - -

**DR CRAIK:** Yes. Don't get me wrong, I'm not a fan of restrictions.

**DR TROUGHTON (ENOC):** So I think what we ought to be doing is taking account - yes, if we want to bring about nearer term change we ought to take into account everything we know about what motivates consumers to change behaviour and using that.

**MR WEICKHARDT:** No, I'm not opposed to your suggestion of using some carrot as well as some stick but I'm still of the belief that the stick should be there.

**DR TROUGHTON (ENOC):** Fair enough. But then the nice thing about the carrot approach is that you can apply carrots to people who aren't causing a problem whereas if you do have a stick it can be inequitable - - -

**MR WEICKHARDT:** I think you are also suggesting that people can be bought off more cheaply with smaller carrots than the size the stick is.

**DR TROUGHTON (ENOC):** Correct.

**MR WEICKHARDT:** I don't know whether that will always remain to be the case. Once people realise how much value they're delivering to the network by agreeing to be offloaded, won't they necessarily say, "You're getting away with too cheap an offer here."

**DR TROUGHTON (ENOC):** If we have a market development like that, then eventually you get to an equilibrium where the network buys the optimal amount of their service given the price that people are willing to offer it at. It seems like a good outcome.

**MR WEICKHARDT:** Yes.

**DR TROUGHTON (ENOC):** Maximal demand response isn't what you want to go for, it's the economically efficient levels.

**DR CRAIK:** That's right.

**DR TROUGHTON (ENOC):** The interesting bit about this idea of incentivising other people to fix the problem, so I'm thinking of commercial industrial customers, is that they're already interval metered and as I showed in the figure in the submission during the peak 60 per cent of demand is already interval metered, so I suggest you can do an awful lot of fixing without rolling out smart meters to the other 40 per cent and we should probably do that first.

**DR CRAIK:** Which is AEMC's - - -

**DR TROUGHTON (ENOC):** AEMC is doing that to some extent. I think it will be helpful given that, you know, the AEMC has come up with some recommendations around providing some kind of incentives to networks to - well, removing some of the disincentives and possibly providing some kind of an incentive to networks to do demand response but it still has to be interpreted by the AER and so on and it would be helpful to draw attention to this as, "There is an opportunity for better things out of this, can we actually have some action, please."

For example, it's suggested that the regulatory investment test is what drives the decision-making as, you know, "Can we defer this investment, can we avoid this investment by using a non-network solution?" As far as I'm aware - and I'm afraid I don't have all of the data - but I'm not aware of any regulatory investment test that has ever decided to defer or avoid the capital program because some demand response is possible. That's what it's meant to be there for but it never actually happens.

**MR WEICKHARDT:** Is that because in your mind network businesses distrust your ability to actually deliver what you promised to deliver or if you fail to deliver what you promised to deliver that you don't have the capacity to compensate them?

**DR TROUGHTON (ENOC):** There might be an element of that. I think some of it is not a calculated distrust, it's simply that "if we built this thing we know what we will get from it, we've done it a hundred times before, it's the easy option and before we got to the regulatory investment we've already designed exactly the thing, we're just waiting to sign the contract." So it's all geared up to, "We want to go and do this, can you prove to us that we can't."

**MR WEICKHARDT:** Have you actually during the public consultation period jumped up and down and waved your flag and said, "Here's an alternative. Mr Regulator, look at this, look at this."

**DR TROUGHTON (ENOC):** We've engaged in a number of both transmission and distribution bits but I haven't got a complete recollection of all of the ones we have taken part in but my understanding is that none of the distribution network

programs or transmission network oriented DR programs that have actually resulted in them deciding to defer something.

**DR CRAIK:** I thought one of the New South Wales companies had made a big decision about 40 megawatts - - -

**DR TROUGHTON (ENOC):** Yes, so we're doing just under 40 megawatts this year and I think they need 80 megawatts next year. They were going to build it next year anyway, so what we're doing for them this year is a risk mitigation exercise.

**DR CRAIK:** Not a replacements, as it were?

**DR TROUGHTON (ENOC):** Not a deferral, not a replacement. So, yes, if the demand response hadn't been there, then they would probably would have done probably what the Victorian businesses always do which is decide, "Well, we can just take the risk that very high demand is unlikely to eventuate. It's not going to affect us too badly if it does. It's not the end of the world."

**DR CRAIK:** What about the 80 megawatts next year?

**DR TROUGHTON (ENOC):** I'm not sure where that's going. I'm afraid I haven't got up-to-date information on it. It's held up as this is the mechanism by which it should work but it doesn't actually seem to so it suggests there's something wrong either in, as you were suggesting earlier the fact that the people who want to go out and build the stuff are setting and judging the test or that kind of myopic "this particular investment, can we do something with it" approach in isolation is not the right way to be judging this.

Now, Queensland is the interesting example here. Energex is basically the first network to have convinced the AER that doing broad based demand response, so it's not that we're trying to defer this particular investment, it's that we've recognised that one of the major drivers of the investment we have to do is the extreme peaks in the load duration curve, if we can put in place enough programs to bring down that extreme peak and make the whole thing a bit more manageable then over the longer term we're bound to save money. The demand response is so much cheaper than the capex that it's the right thing to do.

They had a trial program for, I think, a year funded by the Queensland government and then in the last regulatory determination they put this to the AER as, "We want to knock" - I can't quite remember the number but it's something like - "200 megawatts off our peak over the next regulatory cycle and we want to go off and do various things, some tariff based, some direct contracting and so in order to do that, can we have this as part of our expenditure allowance?" and the answer was yes. So that's been a sort of a beacon of joined up thinking in network planning.

One of the problems with the RIT is that it's always sets demand response as something which is separate from the normal planning process. You do your plan and then you try to fend off this annoying thing.

**DR CRAIK:** Did they do a RIT-T to get to this point?

**DR TROUGHTON (ENOC):** I don't think they went through a RIT. They went through their standard planning approach. This is what we want to build and some of what we want to build is a demand response capability.

**MR WEICKHARDT:** In fact I think if I'm correct - and I should check the transcript - but I think that Grid Australia were actually suggesting that incentive regulation works in the following way, that is, they convince the regulator they do need to build that extra piece of kit, but then they go off and get some sort of demand management response which is a hell of a lot cheaper.

**DR TROUGHTON (ENOC):** That's what's meant to happen and that's hopefully - - -

**MR WEICKHARDT:** I would have thought the description you gave of what was happening in Queensland was preferable, that is, that before they went to the AER they actually figured out that maybe there was a cheaper way of doing it rather than trying to game the regulator to believe that they really need to build this kit and then afterwards they could do something a hell of a lot cheaper.

**DR TROUGHTON (ENOC):** Yes.

**MR WEICKHARDT:** So the consumer pays for the first of them.

**DR TROUGHTON (ENOC):** Correct, but I'm not even convinced that alternative often ends up with much being deferred, it is more you game it that, "We need to build this," and then you decide, "Actually we can get away without building it," and you just pocket the money. The problem with Queensland is that although the regulators approved this and Energex started building up their capability perhaps not in the optimal way but they were doing it - - -

**DR CRAIK:** So are people being paid for capacity there?

**DR TROUGHTON (ENOC):** Yes.

**DR CRAIK:** Or just not using the power - - -

**DR TROUGHTON (ENOC):** So it's a mixture of direct deals with consumers and some tariff based measures. The unfortunate thing is that the Queensland



government, at least by the looks of their most recent review - they have had an independent panel on electricity costs - it looks like they're trying to dismantle that. They're just seeing it as a source of cost rather than seeing the benefits that can flow from it, so it looks like what was the beacon of joined up thinking is about to be undone.

**DR CRAIK:** Dimmed.

**DR TROUGHTON (ENOC):** Yes, which is unfortunate. The other issue I just wanted to raise which I made in the submission is about revenue decoupling. I think you've been drawn into a fallacious argument, and I've seen this elsewhere as well; the AER has found that there is no practical incentive that they can observe from weighted average price caps to cause networks to set efficient tariffs. As I explained in our submission, I don't think there's any theoretical incentive from that price cap to set efficient tariffs. So given there's not a lot of upside to the price cap approach and the downside is that it creates an opportunity for gaming, as we've seen with the over-recovery in Victoria, and more seriously, it just creates a disincentive for demand response and energy efficiency and this is what's been recognised in many regions of the US which has brought in revenue decoupling. But I think price caps should be avoided and some form of revenue decoupling is the right way forward.

**MR WEICKHARDT:** Welcome to a hot debate because I know you're in good company with the AER and believe that the revenue caps are a preferable way to go. I guess the issue we wrestle with is how do you make critical peak pricing work when you've got a revenue cap? I understand that a weighted average price cap does give the sort of incentives you've talked about in terms of gaming forecasts and does make a distributor hopefully at least neutral in terms of using demand management, so it's got those upsides.

**DR TROUGHTON (ENOC):** The revenue cap does.

**MR WEICKHARDT:** The revenue cap does.

**DR TROUGHTON (ENOC):** Yes.

**MR WEICKHARDT:** But how under revenue cap do you motivate and incentivise a distributor to actually use critical peak pricing?

**DR TROUGHTON (ENOC):** I think partly you have to do it through prescription. If you want to do things on the basis of long-run marginal costs, as you've suggested, then you're going to have to tell them that anyway because the price cap doesn't incentivise them to do that, neither does the revenue cap, so you have to tell them what you want. But the other thing would be to put some incentives in place around the outcome that you want. So if you want them to manage peak demand in a

more efficient way, reward them for doing so as part of your incentive regulation.

**MR WEICKHARDT:** It's tricky, isn't it, either way, and there is no utopia here. Under a revenue cap, we have this bizarre situation which most people who have worked in competitive markets sort of scratch their head about, but when demand goes down, prices go up. Utopia, for most people - - -

**DR TROUGHTON (ENOC):** But you get that under a price cap anyway once you get to the next regulatory reset.

**MR WEICKHARDT:** When you get to the next regulatory reset, but in the meantime - your point is, okay, the network company bears that risk and ultimately somebody pays for that risk, I understand that, but when we're in a situation where the response of the consumer to weighted average price caps or to critical peak pricing is unknown, it's tricky to really figure that out simply with a revenue cap, I reckon.

**DR TROUGHTON (ENOC):** Again I thought it would make it harder under a price cap. Under a price cap, you set your tariff on the basis of expectations about the consumer's elasticity of demand and if you get it wrong, it affects your revenue. So that's got to make you very cautious about the extent to which you're willing to make assumptions about elasticity, whereas on the revenue cap, at least there's no direct financial incentives gearing you one way or the other. You're basically neutral. The worst thing that can happen is that cash comes forwards or back a year. So you could at least have a good faith best effort to implement whatever policy they have been told to do.

**MR WEICKHARDT:** We're obviously going to have to look at this again. There was a very hot internal debate before the draft report as to which is the best way of going, and the fact that there are still people saying that we've got it wrong means that we need to look at it again closely.

**DR CRAIK:** Can I ask you a bit more about demand response. I mean, it's quite fascinating, your comment that paying people seemed to cause them pay more attention than letting them pay less, which is kind of the other alternative.

**DR TROUGHTON (ENOC):** It's just something we've observed is that you can have a utility-led tariff based demand response program and not have much uptake and it's partly because you're putting some of the risk with the customer, in that they're having to believe you that this will actually cause them to save money in the long term if they make this up-front investment in upgrading their systems and processes and paying attention, being ready to respond to things, whereas if you turn it round, then you say, "here's a cheque, do I have your attention yet?" it also means that third parties like us - and in many markets, there are lots of competing demand

response third parties - we have a revenue stream that we can use to fund the up-front costs. So we could in theory engage with a customer and say, "We can help reduce your tariffs by managing your peak demand. Will you pay us for this service?" That's a much more difficult proposition than, "Come join our program. We'll pay you to take part. It won't cost you anything and we'll pay you to do it."

**DR CRAIK:** To be sure that the people actually do what they say and don't actually use their airconditioner, whatever it is, during peak demand, clearly they would have to have some kind of meter that you have access to.

**DR TROUGHTON (ENOC):** Yes. So all of the customers we have participating in our programs have - we install real-time telemetry. In some cases we also install a direct remote control so we can turn those on and off without their involvement, but if we're working on a shorter time scale than working on a longer time scale, and network programs - you tend to be able to predict when they're needed, even a day ahead, let alone a couple of hours ahead, you don't really need the remote control. But the point is that we can see in real-time and the customers can see in real-time how they're tracking relative to what they committed to do.

**DR CRAIK:** Do you get much recidivism?

**DR TROUGHTON (ENOC):** Not much.

**DR CRAIK:** After half a dozen hot days or something?

**DR TROUGHTON (ENOC):** That's where there's a mixture of art and science in this really. What we've found, first of all, is you need to structure the program such that it's within the capability of the customers to deliver. So if you need to be able to do six days in a row - which I've never come across a program which does, it's particularly - three is enough for any kind of thing - then you don't sign up industries that can't shut down for that long or you only sign up for discretionary loads, not the ones which are going to cause them production problems if they're out multiple days in a row. Or, if you really need to go further, then you say, "Well, we'll have this customer and this customer," and together they can span the requirements. Obviously that means there's less money in - - -

**DR CRAIK:** Have you done it with residential?

**DR TROUGHTON (ENOC):** Some people do. EnerNOC doesn't.

**DR CRAIK:** You're only - - -

**DR TROUGHTON (ENOC):** Yes, we see commercial and industrial as being the lowest hanging fruit and the reason for that is fairly simple.

**DR CRAIK:** It's bigger.

**DR TROUGHTON (ENOC):** It's bigger, so you can be much more hands on and much more customised. You find out what they can do and really understand that and build a relationship with them. But also, while commercial and industrial loads, their value of customer reliability is generally very high, that's in general, but if you go around the plant, you can try particular loads where the value to the customer is considerably lower. So if you engage with them well enough, you can find things where they're willing to forgo consumption for much less reward than a residential consumer would, who is typically during peak times running their airconditioner flat out because they want to stay cool.

**DR CRAIK:** Does anyone do it with residential?

**DR TROUGHTON (ENOC):** Yes. There have been some pilots. I know that ETSA, for example, had an airconditioning remote control type program.

**DR CRAIK:** Are they paying people?

**DR TROUGHTON (ENOC):** I don't know the details of it.

**MR WEICKHARDT:** I think they were.

**DR CRAIK:** Were they? Yes.

**MR WEICKHARDT:** But I think rather than relying on the consumer to voluntarily switch off, they paid for the ability to be able to switch them off.

**DR CRAIK:** Presumably that's safe with residential - - -

**DR TROUGHTON (ENOC):** Yes. I mean, normally, yes, for residential it has to be automatic because no consumer is going to pay enough attention.

**MR WEICKHARDT:** The commercial customers and industrial customers in terms of the sort of things that they're offloading, is it stuff like airconditioning that they are turning down or is it actual manufacturing plant that they're turning off?

**DR TROUGHTON (ENOC):** It's a whole mixture. A few weeks ago - we have a 250-megawatt obligation in the US and Australian market, so that's capacity we're providing into that market, and we had to do our annual test that proved that we could deliver it, which we did, which potentially means contacting all of the customers and saying, "You signed up to do this, please do it."

**MR WEICKHARDT:** Is that a test you get compensated for doing or that's part of your deal?"

**DR TROUGHTON (ENOC):** Because we're being paid for the capacity by the market, the market operator wants to know for sure that it's there and we got our security deposit that we provided back as a result.

**MR WEICKHARDT:** So you effectively did get paid.

**DR TROUGHTON (ENOC):** Well, we provided that money first, so - - -

**DR CRAIK:** You didn't lose anything.

**DR TROUGHTON (ENOC):** We didn't lose anything, yes. But so there's 250 megawatts and that consisted of about 300 customers, 475 different sites, but it's a huge range. There's some Supa IGA stores where there's really not much load in each, right up to shutting down entire mining operations. Those customers have very different requirements and very different abilities to respond. So that's where there's a lot of hand holding and coming up with something which works for them and which, when all gathered together and presented to the market operator or whatever other utility works for the utility because it's something they explored and it actually is what solves their problem.

**DR CRAIK:** So do you have to let them know when you want them not to do it? Do you have to remind them or does it happen automatically?

**DR TROUGHTON (ENOC):** So the Western Australia program, we have four hours' notice there, so it's similar to a network program here. We contacted all those customers by automated SMS, email and phone calls initially, saying, "This afternoon, get ready," and then check that they all acknowledged. But then, the reason we put in the real-time metering is so that we can do all this on an open loop to say, "Please do what you said you would do," but then you get up to the time when they're meant to be starting to ramp down their production so that they will be ready for the start of the dispatch and if you see that they're not, then you go and follow up and say, "What's the problem?"

**DR CRAIK:** You get on the phone.

**DR TROUGHTON (ENOC):** That's the sort of thing that a specialist third party can do, but the utility never does. They just don't have that capability and that understanding of the industry. So in our experience you get about 30 per cent more performance and much less variability in performance out of the portfolio customers if you do this intensive follow-up than if you just say, "You're on this contract. Make sure you do it. We've told you to do it."

**MR WEICKHARDT:** What sort of percentage overcapacity do you have to buy to be confident you can deliver 250 megawatts? Do you buy 300 or - - -

**DR TROUGHTON (ENOC):** I'm not sure what the exact number is for that program. Obviously it's in our interests to buy as little overcapacity as we can, while still being reliable, so there's a definite trade-off there. 10 per cent or so would be a reasonable amount but a lot of it depends on - how big and lumpy are your loads. If there's something huge, then that's obviously more of a risk than a whole lot of small ones. Are there lots of loads that are coming from the same industry? You get certain industries where they will refuse to do anything on a particular day because it's their peak season. There's also history. If someone is new into the program, you're not quite sure how they will perform, whereas over time, they build up experience.

**DR CRAIK:** In terms of the distributor, say, or distribution companies and some of these firms have smart meters because they were put in by the distribution companies or retailers or someone and then you come along, do you use the meters that are already there or do you give them your own and does the information that goes to you go to the distributor? How does that relationship work between the other players in the game?

**DR TROUGHTON (ENOC):** The way it works in Western Australia, so this is what we've just been talking about, is that we can get access to the meter data but it comes several days after the event.

**DR CRAIK:** That's a bit useless.

**DR TROUGHTON (ENOC):** Which isn't useful to us. So we put in our own equipment which typically, if we can arrange it, counts pulses from the revenue meter. But if we can't arrange that, then we put our own completely separate metering in. We will do whatever is necessary to get visibility.

**MR WEICKHARDT:** If the right sort of smart meters were specified and the right sort of communication systems were in place, could you avoid having to put your own meter in?

**DR TROUGHTON (ENOC):** In principle.

**DR CRAIK:** But you would want to anyway, would you?

**DR TROUGHTON (ENOC):** I'm not optimistic that you would get a mass rollout of metering that gives you good real-time visibility. We really care about being able to see all the time with low latency, whereas if we're relying on the use of (indistinct)

they have such different requirements that it's unlikely that it would work - if you look at not the smart meters at residential level but the interval meters which are at all commercial and industrial premises in the NEM, they have communications ability but you actually have to - well, most of them, you have to dial them up to get data from them, so it's not something where you can be sitting, having a live feed.

**DR CRAIK:** Okay.

**MR WEICKHARDT:** So in Victoria, do you have any demand response arrangements at all?

**DR TROUGHTON (ENOC):** No.

**MR WEICKHARDT:** None at all?

**DR TROUGHTON (ENOC):** In the NEM, we only have a TransGrid program at the moment.

**MR WEICKHARDT:** Only TransGrid?

**DR TROUGHTON (ENOC):** We have some market generators as well, which is a work around for the inability for demand to access the wholesale market there.

**MR WEICKHARDT:** Can you explain why you think it's been so slow to get penetration in the NEM if people are seeing you deliver this in Western Australia?

**DR TROUGHTON (ENOC):** I guess there's two separate uses for demand response, one of which is the wholesale market opportunity and that's what we've been pursuing in Western Australia. The wholesale market in Western Australia is very clear that - you know, they pay for capacity and anyone who can provide capacity to meet peak demand. On that basis, the demand response provider is absolutely on a level playing field with someone who is building a peaking generator, so that works. Having a level playing field means that we respond to the (indistinct) the same way as a generator would. The fact that it takes the form of a capacity payment is particularly useful because it falls back to this idea of not putting too much risk on the customer. If you can say, "This will definitely be worth your while," that's much more valuable than saying, "Well, if it's hot year you'll make a fortune, but otherwise there may be nothing." So that's on the wholesale side. In the NEM, there has not been access to the wholesale market for demand response. If you generate, you get paid the spot price but there would be no way to be paid the spot price for reducing demand.

**DR CRAIK:** Will it change now with the AEMCs?

**DR TROUGHTON (ENOC):** Yes, so the Power of Choice demand response mechanism fixes that. Still leaves some other issues less than ideal but you don't quite know what price you're going to be paid, because the way prices are set in the NEM, they're set every five minutes, which is fine, but the money actually changes hands on the basis of a half-hour average which means you don't actually know the price until the 26th minute of the half-hour which is a bit silly if you expect people to respond to that price signal.

**MR WEICKHARDT:** Do generators only get that?

**DR TROUGHTON (ENOC):** Yes. The generators generally work around it, the scheduled generators, by guessing what the price is going to do. Rather than saying, "We'll sit here and we'll put an offer in on the bid stack and say our marginal cost is \$200," and waiting for AEMO to tell them to run when the price gets above \$200, they instead say, "We think that this half-hour is going to be an expensive one, so we'll bid in at minus a thousand dollars for that half-hour," or, "We think this half-hour is going to be a cheap one, so we'll bid in at \$12,000," and they are basically working around the flaws in the dispatch system. That's one of the reasons why you see, when you get a sudden change in demand in a region, rather than - you know, what you would expect from a supply curve would be that there's lots of little gentle gradations and if you get a sudden shock, a sudden hundred-megawatt jump or drop in demand, that you jump up to the next generator or the previous one.

What actually often happens is you jump up to \$12,000 for five minutes until people rebid or you jump down to minus a thousand dollars until people rebid. Which is symptomatic of the system not really working very sensibly. That's easily fixed; just move to five-minute settlements and that problem will go away. That's also relevant to the optional firm access model; the pricing uncertainty I think will cause serious issues. So that's the way generators work around that problem. It will be very expensive for a demand response provider to work around it in that way because the short-run marginal costs for those on demand response can easily be 10 times or more than that of a peaking generator. So while overall costs and capital costs are quite low, the cost of a dispatch error is much more serious to us than it is for a peaking generator. So it's basically impractical to work around that than dispatch problems. That's the concern. But essentially the Power of Choice review proposals do predict the issue of getting access to the wholesale market and that's a big breakthrough.

The other aspect was using demand response for network support. That's something which we're not yet doing in Western Australia, we're still working with Western Power and IMO around the rules for that. What we have done is what we are doing at the moment with TransGrid here and we've done it with Ausgrid in the past. I think the issues come down to what are the regulatory incentives of the network businesses. We talked about the disincentives that result from the price caps



causing profit to be coupled through throughput; that's a minor one but it's real. But there's also the fact that they prefer to build stuff and if they build stuff, they need more profit. It's pretty straightforward.

**DR CRAIK:** It's pretty good incentive.

**MR WEICKHARDT:** I thought you somewhere in your submission said that somebody had incorrectly criticised the Power of Choice arrangements.

**DR TROUGHTON (ENOC):** That wasn't in the submission. It's just that I happened to notice that other submissions, the ERAA and the ESAA both quoted an economics consultant report, criticising that demand response mechanism. It's been pretty thoroughly rebutted, that report, by the AEMC, so there's probably not much more to say. But if you have any questions on that, I'm happy to have a go.

**MR WEICKHARDT:** If it's possible to very quickly tell us what did they get wrong and why, just so I can be alert to that.

**DR TROUGHTON (ENOC):** Okay. The principal economic argument that didn't work was that they suggested that - I need to sort of step back a bit to explain. Are you familiar with the mechanism that's been proposed?

**MR WEICKHARDT:** In general terms.

**DR TROUGHTON (ENOC):** So the basic idea is that demand response is treated as if it was a generator, and particularly energy that's sort of freed up for demand response and sold into the wholesale market is treated as if it has been both consumed and generated. The argument in that consultant's report was that - they had a sort of simple model where they had a market consisting of one customer, one retailer and one generator and they were arguing that if the customer provided demand response into the market, then because the retailer would be seeing it as if the energy had been consumed, they would have to buy from the spot market energy for more than the amount that had been generated. Their argument was that that would either leave the retailer exposed because they would normally hedge with the only generator for the load to the customer, so they would either end up hedging at the level of the actual consumption and having to buy this extra bit on the spot market that leaves them unhedged, or they would hedge with the generator at the baseline level, in which case it would be the generator which would be left exposed because they wouldn't be able to generate at that level. They would only be able to generate at the level of the net consumption. So they would have to pay out at the spot price even though they weren't earning.

Now, the fallacy there is that the customer may well also wish to sell hedges; they are just like a peaking generator, so there's no reason for the retailer only to buy

hedges from that one generator. But there's another fallacy, which is the suggestion that the generator would be exposed; that would only happen if the generator had sold a hedge with a particular strike price and then bid their capacity into the market at a higher price than their hedge strike price which is a very foolish thing to do. That should never happen.

**MR WEICKHARDT:** Okay, all right. Thank you very much indeed. I think I'm clear and thank you for your submissions and thanks for your input.

**DR CRAIK:** Thanks very much, Paul.

**DR TROUGHTON (ENOC):** No problem.

**MR WEICKHARDT:** We're going to adjourn now and we will resume I think in 20 minutes, say at 3.40.

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**MR WEICKHARDT:** The hearing will now resume and our next participant is AEMO. If you could each individually give your name and the capacity in which you're appearing, please.

**MR SWIFT (AEMO):** David Swift. I'm the executive general manager of corporate development for the Australian Energy Market Operator.

**MR TIRPCOU (AEMO):** I'm Louis Tirpcou, group manager, regulatory policy development from Australian Energy Market Operator.

**MR WEICKHARDT:** Thank you very much. Thank you for your submissions prior to the draft report and for your significant input during this inquiry. It's been much appreciated. Thank you for coming along today. I know you've provided some brief dot points about what you would like to talk about. If you want to run through those, that would be great, but assume we have a lot of questions too.

**MR SWIFT (AEMO):** Thanks for the opportunity to meet. I guess we just wanted to raise a few of the matters in the report. The first one would be the benefits of national independent planning. AEMO certainly supports the commission's recommendations with regard to planning and considers that there are considerable benefits to be gained from national independent planning in the development of the transmission network. A national approach would remove the narrow concept of an interconnector and involve planning a national system without the constraints of state boundaries. To deliver on this potential, a national decision-making role is particularly important for augmentations on the core backbone of the national grid.

We remain concerned at the incentives for efficient long-term investment in the current regulatory regime and also on its reliance on forecasts out for five to seven years. We therefore consider the independent decision-making role is also key for demand-driven augmentations where the reliance on forecasting and financially motivated decision-making introduces flaws into the ex ante revenue cap regulation.

An independent decision-maker acting in a timely manner using a rigorous cost-benefit approach will provide real efficiencies, while assuring appropriate service levels are retained. We do consider, however, that the decisions of an independent national planner based on the assessment of net market benefits will not necessarily meet the needs of generators. We therefore support a financial tradeable access rights regime as a complement. Further work though is needed on the form of the scheme and how it links with the planning process and the regime for regulated investment.

Some parties have raised the need for the right checks and balances on the national planner, especially given broader powers. We agree that greater planning

transparency is required and we are currently developing information to define the services received by network customers at different connection points and to identify some performance benchmarks. This might include annual reporting to the AER on planning outcomes and decisions.

In terms of reliability standards, we agree with the Productivity Commission that there's a difference between the approach that might be taken in transmission where reliability and security depends on a relatively small number of high-value assets and the approach that should apply to distribution or at least the major part of distribution which can be characterised as having a comparatively high number of low-value assets.

There now appears to be consensus that an economic analysis of the value investment of customers does need to be central to the assessment of reliability-driven transmission investment. We have been working with Grid Australia on a new approach and in this work and to their credit, Grid Australia accepts that an economic approach will be used as the final method of assessment for significant investments. Questions remain as to how that standard operates effectively within the revenue-setting regime.

In terms of the benefits of a competitive procurement framework, currently there are significant asymmetries of information between network owners and the regulator with a lack of transparency on both the cost of construction of network assets and the cost of ownership, debt and equity costs. We accept the Productivity Commission's analysis that there are difficulties in applying competitive procurement of services in a widespread manner to the shared network. We do consider however that contestability should be applied in some areas where it could deliver real benefits and additional transparency. That is, in providing generators with choice, the benefits for generators of allowing competition for the provision of connection services is worth further work, and for cross-border and large investments, delivering large new investments with competition to lower overall costs to consumers could provide benefits, we believe. To make that work, we need to assign liabilities and accountabilities across multiple asset owners but that's something that has always been the case in the NEM given the multiple jurisdictional asset owners.

In terms of the Victorian network agreement, we note that there have been some concerns raised about the network agreement that applies between AEMO and SP AusNet. Evidence shows that the overall arrangement has operated well and delivered real benefits under the original contract which still applies. Unlike other states, it does deliver a specified level of service for customers.

There are just a couple of clauses in the agreement that have never been settled. Several attempts have been made to refine the original contract but have failed as there is no real pressure on the other side to compromise. Thank you again for the

opportunity to meet today and we're happy to take any questions and also to provide further information and follow-up that the commission may need to have in finalising its important work.

**MR WEICKHARDT:** Thank you for that. Can I start this debate with an issue that we talked to Grid Australia about. You may or may not have seen the transcript of those hearings but they presented a submission to us and in that submission they talked about an independent planner, and with a footnote, they said the independent planner may or may not be AEMO. Somebody has subsequently pointed out that they didn't use the word "national" independent planner and Wendy and I are unclear whether that was inadvertent or a cleverly crafted piece of draftsmanship, but they did talk about an independent planner. You will see in the transcript I said, "Why on earth wouldn't that be AEMO?" and indeed I went on to say, "Why do you hate AEMO?" and they were at pains to say they didn't hate you but on the other hand, it would appear that there is sort of, outside Victoria at least, a degree of angst about AEMO being involved. Can you help us understand from your end of the telescope why this is so?

**MR SWIFT (AEMO):** I don't think it's fair to characterise our total relationship in that sense by any means and the fact that the lights are on today shows that there is a very constructive level of work between the TNSPs and AEMO on a range of matters. We are doing joint work on a number of issues at the moment, including a regulatory test on the possible upgrade of a Vic-SA interconnector. We recently did work on reviewing the reset submission by Electranet. We've done work in Queensland and New South Wales on various aspects. So in the main, the arrangements work and we certainly don't have a bad relationship with them in that area. Obviously in this particular area of how the regulatory regime should work and how the planning regime should work, we have a strongly held difference of opinion.

**DR CRAIK:** Are you aware - going back to Phil's initial question - of the Grid Australia proposal, when they were talking about probabilistic standards and it was a body, an independent body appointed by governments - with an "s" - and I guess Phil and I read that to be and they said could be AEMO. I guess one of the issues is were they countenancing a different body in each jurisdiction and/or a national body or was it a national body and if it is, why not AEMO anyway automatically.

**MR SWIFT (AEMO):** At the moment there are several states - well, states publish standards one way or another and in some states the jurisdictional regulator does that, for example, ESCOSA in South Australia establishes the standards that apply on advice from us. It would depend on how you configure the whole thing. It would also be possible for one of the existing bodies like the AER, for example, to establish standards if that was felt worthwhile. We don't consider though that the setting of standards at the transmission level was the best way to do it obviously, as we constantly said. We have worked with Grid Australia on a new model.

**DR CRAIK:** This is in their new model we're talking about?

**MR SWIFT (AEMO):** Yes, and we've had discussions with them on that. That does require some standards to be set up front but those standards would only apply in the initial assessment of what's required and the final decision-making would be made on the basis of a full analysis of the costs and benefits of the development. So that would then say, "Well, how much emphasis do you place on the standards versus the final analysis?" and that depends on the regulatory regime because in their model the initial standards would set your revenue cap.

**DR CRAIK:** I'm still not really clear. Did you guys get a view from the discussions with Grid Australia whether they were talking about a single national body setting these initial probabilistic standards in setting this framework?

**MR SWIFT (AEMO):** No, that was left open and that could be individual state bodies or it could be some national body, yes. At the moment it is individual state bodies that do that.

**DR CRAIK:** I understand.

**MR WEICKHARDT:** Again, forgive my slowness here and we were trying this morning to get our minds around this. In the Victorian model from the transmission grid you have a whole lot of individual connection points to distribution networks. When you're doing your probabilistic planning, do you have different levels of reliability at each of those connection points or do you give them all a standard level of reliability in terms of your first assessment of whether or not the transmission network has got constraints that may be causing likely problems.

**MR SWIFT (AEMO):** Yes, my understanding is that the first run is all done on a simple N minus 1 just to highly the problems but perhaps I will - - -

**MR TIRPCOU (AEMO):** What we do through our annual claiming report process is go through what we call an initial sweep and that is that we look at where - if it's the CBD we might look at where the N minus 2 standard might be. If it's in the suburban area we will look at the N minus 1 and we'll look at N minus zero because there are times, depending on the value of customer reliability, depending on our historical knowledge of the network we will have a bit of an idea as to whether the augmentations required will sit between that N minus 2 and N minus 1 category or between an N minus 1 and N minus 0 category. So that is the initial assessment that we do. That informs us as to whether we need to look at something in a lot more detail, whether we need go into that detailed market modelling and more detailed probabilistic assessment.

From that we will also identify what the possible options might be and through that process that's where we start to inform the market and the likes of EnerNOC and other demand site providers as to what we might require in order to defer some of those investments. So we will try to specify how many megawatts, how many megawatt hours of unserved energy there will be at each of those connection points.

**MR SWIFT (AEMO):** I guess it's important to say though because that initial sweep has no particular standing other than informational, there is not a formal independent body or setting of that and that would be the intention of Grid Australia's proposal that you would actually go into more detail in the process to establish those.

**MR WEICKHARDT:** In Victoria is there some process for the customers downstream of those connection points to inform whether or not they should be N minus 0, N minus 1 or N minus 2 standards of reliability?

**MR SWIFT (AEMO):** That is done via the efforts to discover what the value of customer reliability is for different customers and different customer groups and obviously as different connection points have different mixes of customers and different types of customers, they could have quite different value of customer reliability. So that's the process by which - - -

**MR WEICKHARDT:** Is that work AEMO does in conjunction with the distribution companies in those areas?

**MR TIRPCOU (AEMO):** Exactly. So in Victoria the distribution businesses also produce something called the transmission connection planning reports and over the last few years there have been a lot more augmentations between the transmission and distribution system and that's seen our planners and distribution businesses planners work much more closely together than they had probably at the start of the reform process where we had a little bit more capacity. As that capacity got used up, we worked out that we needed to work a lot closer. So it's informed by both sets of planners, depending on where the issues are arising, depending on where the developments might be.

**MR WEICKHARDT:** Okay.

**DR CRAIK:** When you do your probabilistic planning and you identify how many megawatts of unserved energy you're looking for a solution to and then what, you decide what the most appropriate cost effective solution to that is. Is that right?

**MR TIRPCOU (AEMO):** Through a RIT-T process.

**DR CRAIK:** Yes. Where there's hybrids for the deterministic standards and they

decide something is needed, does that almost automatically lead to a prescription of the nature of the solution as opposed to - do you follow what I'm saying?

**MR SWIFT (AEMO):** It tends to be a less open. The probabilistic approach allows you to consider all sorts of alternative approaches and that's always been a vexed question with any of the redundancy style standards. But the South Australian hybrid standards have some allowance for an indication of how you could incorporate some of those not-network options. But it's certainly not as comprehensive as doing as - - -

**DR CRAIK:** So the AEMC model and the enhanced AEMC model that Grid Australia provides more scope to consider alternatives that straight deterministic standards will do?

**MR SWIFT (AEMO):** That was the intention but that's not been - that detail has not been worked yet but conceptually that's what you have to do. Otherwise it's very hard if you say something that's supposed to be on a redundancy process, how do you say, "If I put a generator here, how do I compare that to that," because a generator is not as reliable as a nice piece of state of the art powerline and it's not able to act as quickly because it's got - - -

**DR CRAIK:** If I want to use demand management, how would that fit in with a deterministic hybrid model?

**MR SWIFT (AEMO):** That's where the hybrid model has to actually specifically accommodate that in some way and there's an attempt to do that and I'm sure that could be improved but it's still not as comprehensive as just (indiscint) on first principles.

**MR WEICKHARDT:** In Victoria, for example, how many connection points between the distribution network and the transmission network would there be? Hundreds?

**MR TIRPCOU (AEMO):** I would have to take that one on notice.

**MR SWIFT (AEMO):** No, it's not hundreds.

**MR WEICKHARDT:** Okay.

**MR TIRPCOU (AEMO):** The number 40 to 50 comes to mind but - - -

**MR WEICKHARDT:** So each one of those informed by this work of looking at the needs of the customers and the distribution network's own assessment would end up with a reliability standard which would feed into your planning work for the



transmission network. How often would you run that probabilistic assessment of the Victorian network? Is this done on a quarterly basis, a six-monthly basis, an annual basis, a five-yearly basis?

**MR SWIFT (AEMO):** There is the annual publication of the review, the annual planning review and that does this sweep-type process and identifies any upcoming issues and any of those that are within the actual planning period would go through some further analysis.

**MR WEICKHARDT:** One of the issues we've talked about in terms - and I'm trying to understand whether this is a real concern we've got or not - is in looking at the difference between the Grid Australia proposal or indeed the AEMC hybrid proposal is the timeliness of doing some sort of probabilistic analysis of the planning of the transmission network against the RIT-T work that's done and a concern that I have anyway is that if there is a five-yearly process by which AEMO does some planning work which feeds into the Grid Australia work, that they have developed ex ante forecasts of what they want to do, year 4 they then do their RIT-T. Do they base that on the work that was done four years ago or do they carry out a current probabilistic analysis?

In Victoria, can you just explain if the RIT-T were about to be done for an investment that was going to occur in year 4, would you be doing a probabilistic analysis with the updated information at that time?

**MR SWIFT (AEMO):** We would try and do that as late as possible in the decision process so that you took on account the latest information available. But that is an inherent problem in the current cap and you're really looking in your planning process to forecast about seven years ahead to determine that investment that you're going to be making and economic forecasts. Electricity, of course, there's a lot based on both the former nature and growth of the Australian economy. It's not an easy exercise at any time and it's certainly not at the moment.

**DR CRAIK:** Grid Australia say that if any of the major parameters had changed in the period, and presumably they would be specified, then the transmission company would have another look at it, do another assessment. I'm not quite sure what that other assessment would involve.

**MR SWIFT (AEMO):** Some of that depends then on who gains the benefits or risks of that being deferred or brought forward because the money has already been allocated for the whole five-year period in the ex ante revenue account. So you would hope that people would still make the right decision, albeit at the moment against an older standard that no-one is defending any more. Then there is a question of who gains a benefit of that being deferred within the period which would occur at the moment.

**MR TIRPCOU (AEMO):** That is an important distinction between what the Grid Australia proposal is and what we do in Victoria. So up-front we're looking at both doing a sweep, that's fine. But in Victoria we're not charging revenue based on that initial assessment. It doesn't go into a revenue cap. We only recover what we actually invest in. So once that investment decision is made, whether it goes out to competitive procurements or, if it's a smaller project it's subject to that negotiation with SP AusNet or someone else, that is what we recover. Because you are planning five to seven years out, it is going to be different. It is going to be wrong and engineers will tend to put probably a bit more of a conservative estimate about what you need from an options point of view but until you get closer you don't really know how many megawatts and megawatt hours are going to be unserved and, therefore, what sort of size of project you really need to address the problem and the need that's been identified at that point in time.

**DR CRAIK:** Would you think it's better if the independent party reviewed the probabilistic assessment - did the cost benefit analysis at the time the project was going to be initiated?

**MR SWIFT (AEMO):** There seems to be quite a parallel view in many respects between all the viewpoints. The model that I understand Grid Australia is proposing and similar to the AEMC model does still have the independent national body doing the review but their proposal - - -

**MR WEICKHARDT:** The independent body with a question mark.

**MR SWIFT (AEMO):** With a question mark, yes.

**DR CRAIK:** It's only advisory, isn't it?

**MR SWIFT (AEMO):** That's right and in the case of some of those models you finish up there's a lot of duplication of work and a lack of clarity as to who's making a decision and it becomes more of a collaborative project to decide what should be done in some of those cases rather than being clear who makes a decision in one case or the other.

**DR CRAIK:** Do you think a collaborative approach is desirable or undesirable or does it make (indistinct) for accountability or - - -

**MR SWIFT (AEMO):** As soon as you start saying it's a collaborative process it concerns, you know, how tight it is in terms of our accountabilities and how much are we ensuring that we're getting the lean, mean and efficient outcome and I think there is still always a need for collaboration wherever you try to draw the lines on this map, there are complexities there and there is collaboration required at the

moment between distributors and transmitters, there is collaboration required between adjacent transmitters. So there will always be an element of that but in terms of your core incentives and drivers on your regulatory arrangements, it would seem to be it's a lot more to rely on than a sort of advisory and a debate around.

**MR WEICKHARDT:** I guess in my mind that depends to a large degree on where the regulator sits in this whole triangle. I mean, if the regulator is able to listen to the views of the national planner and the views of the transmission company which seems to me to be in a desirable form of oversight, in either case the national planner might get it wrong, the transmission might get it wrong and the risk of over investment and under investment - if the regulator is sitting there, I guess I would be less fussed about who it was who was ultimately responsible between the transmission company and the independent market operator.

**MR SWIFT (AEMO):** If you look again at the Victorian arrangements and about what's happened over the last few years, a fair proportion of expenditure, capital expenditure included, is actually in the maintenance and refurbishment and life of the existing assets.

**DR CRAIK:** What sort of percentage would it be?

**MR SWIFT (AEMO):** It's varied across the determinations. It's often more than a half.

**MR TIRPCOU (AEMO):** Yes, so anywhere between 50 and 75 per cent I would think.

**MR SWIFT (AEMO):** So we would see that one is a case where a clear ex ante revenue cap with service standards type approach could incentivise and does incentivise network service providers to provide the maximum services or benefits from the network they already have and to maintain that in an efficient manner. So it wouldn't be that we were suggesting by any means that we're taking over all decision-making or that you're getting rid of incentive, what we're saying is that incentive works well in some of those aspects like that kind of maintenance and use of the assets. We don't see that it works well in terms of trying to make those longer-term investment decisions and especially where they have a national complex.

In fact, my understanding from some of the stuff that Grid Australia has been talking about is that they're going in part along with that and they were suggesting perhaps putting a lot of augmentation projects into the contingent projects bracket which goes pretty close to doing what we were talking about, strips out those investments and treats them differently.

**DR CRAIK:** What sort of size of project would you think if there was going to be a

contingent project? What sort of size of investment? Like, anything over 35 million or 10 million or five million. Do you have a view?

**MR SWIFT (AEMO):** I don't have a number in mind. They certainly have to be substantive under the current rules to be even allowed a contingent investment.

**MR WEICKHARDT:** Those rules would changes.

**MR SWIFT (AEMO):** Yes.

**MR WEICKHARDT:** But for the purposes of transmission planning and not using a steam hammer to crack an egg, I don't think anyone would suggest that something as small as 100,000 was sensible and as big as 100 million is probably too big. If you had to guess and you were the decision-maker, where would you start?

**MR SWIFT (AEMO):** I would have thought somewhere in the range of 20 to 40 million would be reasonable. The smaller end of that you've got to be careful because the cost of doing the analysis can start to exceed the efficiencies that you could gain and I think our market suffers from that a bit sometimes with the analysis it's done on some projects. But some of those projects can be critical to the transfer capacity of the backbone of the network. Certainly it may be even higher than that, but certainly of that order, I would have thought.

**DR CRAIK:** With the gaming of the systems, would it be possible to spot if a \$21 million project, for instance, had been split into 10 and 10 or something like that, 10 and 11?

**MR SWIFT (AEMO):** That currently can happen under the rules effectively with the trigger for doing a RIT-T but I can't say that I've seen a lot of that sort of behaviour. I don't think that it's been - - -

**MR WEICKHARDT:** As I understand it, and this might be an imperfect understanding, but there's a sort of a threshold where you've got to do a simplified RIT-T above five million and above 35 you've got to do a full-blown one.

**MR SWIFT (AEMO):** Correct.

**MR WEICKHARDT:** Would there be some sort of logic in linking those numbers and saying, "Yes, five million for a stripped-down RIT-T and at 35 million you've got to do a full-blown RIT-T," and those projects become contingent projects?

**MR SWIFT (AEMO):** I guess what we were talking about would be if it was an augmentation project, you might - and the contingent project still leaves the decision-making with the transmission company - - -

**MR WEICKHARDT:** Correct.

**MR SWIFT (AEMO):** - - - and still leaves then - there's the problem that we would be duplicating and advising and that sort of stuff.

**MR WEICKHARDT:** So you would be duplicating and advising, but you would be advising the regulator who would have to be signing off on the revenue allowance.

**MR SWIFT (AEMO):** That's right.

**MR WEICKHARDT:** And I'm assuming that the regulator would listen fairly carefully to AEMO if they had a different view.

**MR SWIFT (AEMO):** Yes.

**MR WEICKHARDT:** The other point I'd like your input on is in Victoria, how often do AEMO and SP AusNet, after going through the process and the RIT-T and analysing all the options, have a different diverging view of what should be done?

**MR SWIFT (AEMO):** There isn't particularly a process for SP AusNet to necessarily have a view in that context. They don't repeat all the planning - - -

**MR WEICKHARDT:** No, they don't, but I assume they must look at what you're doing and try and satisfy themselves that it makes sense. They have got a vested interest in making sure that - I mean, they keep on pointing out to us that ultimately it's them that are going to be the first line of attack when there's a failure in their network, so I assume they take fairly deep interest in what you're doing.

**MR SWIFT (AEMO):** There is an annual process where our CEO writes to their CEO with the annual plan to kind of say, "Is there anything that we've missed or any concerns with the plans that we have?" I'm aware of that process. My understanding is certainly in the last nine years, there hasn't been anything raised through that process.

**MR WEICKHARDT:** If that's the case and you have a third party, namely the AER, able to adjudicate if the transmission company and, let's call it, AEMO sort of have a different view, if the majority of time consenting adults in an informed way are likely given the same information and the same sort of processes which everyone seems to be agreed with - you know, using the same sort of approach, obviously there would be debate about assumptions and the transmission company will have some input that you don't have, "Well, we've got a real planning problem. We've got to put the line up here," or, "We've got to factor in this lead time or this cost if we're

going to do this." I mean, if the majority of times the two come to a consensus, then the AER simply tick off on it; if they don't come to a consensus, then the AER adjudicate. It seems to me then maybe it's not so critical as to whether or not it's AEMO that makes the final call or whether it's the transmission company that makes the final call.

**MR SWIFT (AEMO):** I guess one of the things that I would be concerned about there is the drivers in the first place, as you're doing the assessment - you know, if it's just a review process or whether someone else has done a reasonable job. You haven't started from the basis of, "What's the most cost-effective national solution to this problem."

**MR WEICKHARDT:** Why haven't you started on that basis?

**MR SWIFT (AEMO):** Because you've started with a state based transmission company who's working under their own set of understandings, aren't they, so - - -

**MR WEICKHARDT:** But surely if you're there doing this probabilistic analysis, incorporating all the options, including interstate augmentation options or demand management options, going through that process and pointing out to them, "Yes, there is a constraint here but here is another option for relieving it and therefore we're not recommending this," surely if you go through all that process together with them, it's unlikely - maybe I'm just being naive - that they're going to go to the regulator and say, "Well, AEMO say this is going to be fixed by an interstate investment over here," or, "a demand management plan. We don't agree with it and what we want to do is put a hundred million dollars into a new line." Am I being naive in thinking that ultimately if there is agreement of a common sort of process and methodology, yes, there will be debates about assumptions that go into the model, but over the time, it's likely that there will be more convergence in terms of agreeing what the result is.

**MR SWIFT (AEMO):** So you would be assuming that that decision wasn't captured under the ex ante revenue cap so you were actually discussing and debating a secondary - - -

**MR WEICKHARDT:** A contingent project basis, and the regulator wasn't going to sign off on the revenue until they were satisfied this was the most efficient method of attacking the constraint.

**DR CRAIK:** I guess the question would be for you is what is the most efficient way to get to that point and where would your role intersect in terms of the cost-benefit analysis for the project just before it happened and to bring out the options relative to the TNSP's role, so are you going to repeat everything they do and more or what?

**MR SWIFT (AEMO):** You create all sorts of information asymmetries if you don't do it from the ground up yourself. You're just reviewing someone else's stuff. If you do it all from the ground up, you've then got two organisations doing an enormous amount of work, and I wouldn't underestimate that. We could give you some figures on how much it's costing to do the payment system for a project that's of the order of a hundred-million dollar project. There's massive resource costs to do that sort of - - -

**MR WEICKHARDT:** What, to do the probabilistic analysis?

**MR SWIFT (AEMO):** To do the full analysis of all the options that people might raise in an open process.

**MR TIRPCOU (AEMO):** That's also because of the market modelling side of that. So interconnectors also have an added complexity, in that it does affect the market in a way that some of the reliability-driven augmentations do not. So the Heywood upgrade isn't indicative of what you might spend on some of the more local reliability-driven investments, but it does give a fair indication. We've had a lot of submissions into that RIT-T process. We have had to consider a number of things. We have had to model and remodel on a few occasions. So that's certainly added to the cost and the complexity of that particular project.

**MR WEICKHARDT:** Where do Electranet and SP AusNet sit there? Are you inside a darkened room with towels wrapped round your head and they're outside, not being able to sort of interact at all or are they sitting at the table with you saying, "Yes, we agree with that," and, "No, you've forgotten that"?

**MR SWIFT (AEMO):** I can't speak for the dress code of SP AusNet but we have a joint working arrangement with Electranet, so that work has been shared with them as the TNSP in South Australia. I'm not sure what involvement SP AusNet has - - -

**MR TIRPCOU (AEMO):** I don't believe it's been significant and part of that is because of the network agreement that we have. We have a detailed knowledge of the Victorian network. We certainly don't have a detailed knowledge of the South Australian network, so that's why we do need that collaboration with Electranet in order to make that process work.

**DR CRAIK:** Would it be sensible to have a similar process for augmentations for contingent projects for non-interconnector augmentation projects where you work with the TNSP or is that not sensible? Rather than doing two independent ones, they work together on that?

**MR SWIFT (AEMO):** The contrast areas - of course SP AusNet don't repeat the

process, like the AEMC process. Obviously they have some interest but they're not involved in spending resources anywhere near to the extent that we are on - - -

**MR WEICKHARDT:** What about Electranet for an intra-regional augmentation, do Electranet work with you on a probabilistic analysis of what all the options are for a major augmentation?

**MR SWIFT (AEMO):** At the moment, Electranet work under the South Australian reliability code which is part of a code published by ESCOSA so it's clear what requirements they have to meet, that they are not probabilistic per se - - -

**MR WEICKHARDT:** That's a connection - - -

**MR SWIFT (AEMO):** That's an interconnection. The connection points are classified.

**MR WEICKHARDT:** And in terms of meeting the standards of that connection point, do they use a probabilistic approach to then plan what they do to augment the network to meet those connection point standards?

**MR SWIFT (AEMO):** No, not generally because they have to meet the specified standard.

**MR WEICKHARDT:** So if it says N minus 2, they just build two lines?

**MR SWIFT (AEMO):** Correct.

**MR WEICKHARDT:** In your world, if we were to move to a situation like the Victorian situation, as I understand it, you would then run your probabilistic model to say, "We can meet N minus 2 there by a number of different methods and this is the one with the best cost-benefit analysis."

**MR SWIFT (AEMO):** No. In South Australia, the fact that it is N minus 1 would have been determined on some basis in the first place that this needed a higher reliability because of the assumed cost-benefit trade-offs.

**MR WEICKHARDT:** Let's assume that it was N minus 1, even done properly, you're looking at a customer value of reliability.

**MR SWIFT (AEMO):** Yes. So then they have to work to make sure they achieve that kind of standard. In Victoria you actually, as it comes closer to having to do something, project forward what benefits would be achieved by doing certain work and whether it was actually cost justified or not. If it was a major CBD connection point, it may well come out that that gives you something close to an N minus 2. But



by moving it closer to the point of decision by allowing a fuller analysis, it does shift the date and we have actually proven that by some studies we did recently.

**DR CRAIK:** Could the TNSPs in the states do that sort of analysis that you do, a cost-benefit analysis?

**MR SWIFT (AEMO):** Yes.

**DR CRAIK:** Would there be a problem if their standards had become N minus 1 anyway? Does it mean - - -

**MR SWIFT (AEMO):** You could ask about how tight those standards would appear in that sort of measurable sense but we understand that the document that we published as part of this year's plan, where we looked at what the benefits might be from applying a probabilistic approach to a number of test projects around Australia that the transmission companies have been able to reproduce those numbers and don't disagree with those for those projects. So in general - I mean, it's not a Secret Service or something - - -

**DR CRAIK:** So they could do that to assess - - -

**MR TIRPCOU (AEMO):** They could certainly do the analysis; the question then becomes - because one of the things that we didn't look at in that economic analysis was what is an alternative option to address that need, so we looked at the issue of timing. We didn't look at alternative options, and that's where the incentive arrangements come into it. How do you make sure that you're coming up with the best option? How do you squeeze the most out of the network? Then there are questions of, "Do the revenue-setting arrangements encourage that?" The AER have recently introduced a new capability measure in their service targets, performance and incentive scheme that provides a small reward for trying to squeeze more out of the network and we've been working with the AER over the past six months to make that happen, to make sure that we can get as much as we can out of the existing network before we need to augment.

**DR CRAIK:** So could the system be designed so that the transmission company, after you've done this probabilistic assessment, would have to actually somehow be more explicit about alternatives before they settle on something or is that not feasible?

**MR TIRPCOU (AEMO):** Under the RIT-T, you're supposed to talk about all the alternative options. What is always difficult to understand is how they're identified, how they've taken them into account, how they've discounted some of those alternatives, because there are generation options, there are demand side options. There have been reg tests in the past where the transmission business has said, "We

can't rely on that particular generation to be there at that particular point in time for a number of reasons." In some cases, that's probably legitimately, but in others, it may have required some additional information or some additional testing to ensure that they didn't pursue or didn't consider that as an option. Even if it deferred an augmentation for a number of years, the benefit that you get from that is that as the demand conditions change and as the system changes, you may not need that augmentation after all.

**MR WEICKHARDT:** Am I being naive in saying in an ideal world, you would have a situation where the national planner, the transmission company and the regulator were all agreed on a contemporary analysis for a project, on what the right project would be, that the options would all be properly considered, that the probabilities had been properly assigned and that X was the right answer, and here is the revenue that should be determined for it. Is that the desirable situation?

**MR TIRPCOU (AEMO):** I would add a few more; maybe if the customer was fully informed as to how that process was undertaken, whether that be on the generation side or on the load side, if they were able to replicate or understand exactly what has happened and what sort of analysis was conducted to make that decision, I think that would be the ideal world.

**MR WEICKHARDT:** The RIT-T in theory opens some of that prospect. I guess I struggle to know how well the customer - I mean, a generator I can see being able to interact with that. How well the multitude of customers - I suppose a distributor ought to be able to interact with them too, but I guess if you can get to a state where those bodies have got the commonality of approach and if there is a divergence of views, that you've got some sort of umpire who ultimately blows the whistle, it seems to me that you've got some of the ingredients for getting an efficient approach to things being done.

I guess the question is then the degree to which the work that has to be done is sort of multiplied in this process. If you, as say the national planner, have to work alongside the transmission company and they have to get comfortable with the outcome, does that involve a real escalation in the amount of work and effort or does it lead to a better result? I suppose when we listened to SP AusNet, it makes me vaguely uncomfortable that they're saying, "Yes, we understand the AEMO process and it's sort of okay and it's worked to date," but we're pretty nervous that we're now on thin ice." They may have their own legal or other sort of backside-covering motivations for saying that in case there's a problem but it doesn't seem to me to be an entirely satisfactory situation that the transmission company is saying, "Well, the national planner has come up with a result and we understand the theory and the approach they have taken but nonetheless we feel pretty nervous with where we sit at the moment."

**MR SWIFT (AEMO):** That nervousness has not been expressed to us. As I said, the CEOs correspond every year to ask if there's any issues. The only issues that I'm aware of in Victoria that are of real concern to SP AusNet, one is the issue of bushfires and risk and accountability associated with that which tends not to get into this area of the large transmission assets and the other one would be the Brunswick substation project which is a share project with distributors. Actually most of the assets involved are connection assets and that project has run a little late. But again, that's not an issue necessarily for the broader transmission system; the issues there tend to be local issues, given the project has had its problems.

**MR WEICKHARDT:** I'll have a look at the transcript of their session with us but they were expressing a degree of angst that the envelope was being pushed pretty far.

**MR SWIFT (AEMO):** We don't feel uncomfortable that transmission companies say that they would spend more money than we would. I mean, I think that's part of the process.

**MR WEICKHARDT:** Except the irony, David, is that incentive regulation is largely supposed to run the risk of transmission companies skimping and in the case of SP AusNet one, I think, should assume that they're run by capitalists who quite genuinely will respond to incentives to try and make profit and maximise their returns to shareholders. So for them to be saying, "Given our druthers, we'd spend a bit more," does make me wonder the degree to which they either fully understand what you are doing and, therefore, are comfortable with it or the degree to which they're uncomfortable with some of the assumptions that are being made. I think they conceded themselves that they now don't have a planning capability.

So I guess it does come back to my issue of in an ideal world do both parties have enough competence to be able to challenge each other so that we're not in a too hot or a too cold environment, we've just got it right.

**MR TIRPCOU (AEMO):** I suppose there are two elements there. I know in the past that SP AusNet have raised some concerns about the high impact, low probability events and that's something that AEMO certainly acknowledged a few years ago. We investigated some approaches to capturing that and bringing that into our cost benefit analysis. We're still working with that and that's one of the topics of discussion that we had with Grid Australia in terms of developing the new hybrid standard but we agreed it's not perfect at the moment, that we do need improvement. It's certainly an idea that I acknowledge we do need to do some more work.

In terms of the incentive issue in Victoria, there is potentially a slightly different incentive on SP AusNet, that they've got the incentive regulation that applies to their replacement and maintenance but their incentive might also be to push AEMO to augment the system in a different sort of way because then it opens it

up to competitive procurement and that provides some greater projects that aren't available to them under their revenue cap because a revenue cap is limited to the replacement and maintenance. So they're missing out on a stream of revenue that is currently afforded to the other businesses, so that may be a play as well.

**DR CRAIK:** On this issue of contestability, revenue may be available to other players, it has been very difficult to get anything much to actually demonstrate the value of contestability other than the underlying principle where contestability is desirable. Is it possible to get anything more certain?

**MR SWIFT (AEMO):** We don't disagree with some of the analysis of contestability within the middle of the shared network has its difficulties in terms of if you get two intermingled assets or different parties. But we certainly think that where a larger project is clearly separable and especially for the connection of new generators who already doing a lot of electrical work with usually the great electrical contractors - - -

**MR WEICKHARDT:** Can we come back to connection, just talk about augmentation within the network at the moment and the idea of separable projects being contestable.

**MR SWIFT (AEMO):** The advantage of doing that, where it is clearly separable we think it would improve transparency quite a lot in terms of what the actual cost of building these things are. It makes it very difficult for the regulator when you actually don't really see the inside nuts and bolts of what you could do for what price.

**MR WEICKHARDT:** If you're in a situation where the regulator, as I think we propose in our draft report, basically signs off and agrees with AEMO, the specification was required, so you've got a contemporary analysis of all the options, you've got a probabilistic cost basis for doing that, you agree on what needs to be done and then for the regulator to agree to a revenue stream they basically need to see competitive quotations to say that the physical work has been contracted to competitive tender. The bit that your extra step introduces is how much an independent operator would be prepared to, if you like, bid to operate, maintain, as well as construct the asset.

**MR SWIFT (AEMO):** And potentially in terms of what they might be prepared to offer in terms of assured service levels. We get very little of that at the moment.

**MR WEICKHARDT:** So I guess the question is in terms of, if you like, where the paydirt is it's always struck me building the right thing at the right time must be pretty important, getting it competitively quoted externally rather than your in-house contractor doing it must be pretty important. The thing I've never been able to get my mind around is whether the costs versus the benefits of having somebody else

sitting in the middle of your network operating something and maintaining it are worth the extra juice you get out of that final step.

**MR SWIFT (AEMO):** That's why we agree if it's right in the network and in most cases in Victoria where it's too intermingled there is a process that allows effectively a book build type on that. But if I put the counter case, when you look at a significant interconnector between two states, under the current arrangement you'd assume that one would build up to one border and the other would build up to the other border. Now, what sort of selection process is that for the person to actually build the thing?

**DR CRAIK:** So if you were trying to say where you'd get the biggest rewards or returns for having contestability in the system, where would it be for interconnectors and projects over a certain value, expectations of - - -

**MR SWIFT (AEMO):** That's what we're sort of saying for large projects which were more easily separable.

**MR WEICKHARDT:** Is that the way interconnectors genuinely were built, that both parties built up to their border?

**MR SWIFT (AEMO):** Yes.

**MR WEICKHARDT:** They didn't engage one contractor to quote on the whole lot?

**MR TIRPCOU (AEMO):** I can't think of an example where that did occur unless you're talking about Murraylink and Directlink which came under different arrangements.

**MR WEICKHARDT:** I know we've assumed that both transmission companies would have said, "Let's get the best deal we can, let's put the whole contract out to competitive tender. We agree on what the cost allocation process will be or we'll get that split but we can try and get the best deal for the whole shooting match," but maybe I'm just being naive.

**DR CRAIK:** I would have thought you'd get a much better deal and much more secure deal.

**MR SWIFT (AEMO):** I mean, they can and they do from time to time share resources but they have also got to worry about the long-term operation and maintenance of that asset so they often have their own preferred for detailed design and when some of these were built some of the parties still had their own in-house construction but that's less now.

**DR CRAIK:** Does that make a problem with the border?

**MR SWIFT (AEMO):** With the in-house construction you prefer to actually build your bit.

**DR CRAIK:** I know, but I mean when they actually join up. The Hume dam was built that way and it did do that.

**MR SWIFT (AEMO):** I've not heard any stories of that sort of a scale of problem.

**MR WEICKHARDT:** Can we turn to connection. We've had, as is apparently the norm in the electricity world, highly contested views of what should happen. AGL have put it to us that the situation in Victoria is messy and difficult, that there is no need for AEMO to be involved in the process, they only complicate the issue, that the generators can deal directly with the transmission company and they'll agree on a competitive tendering of what needs to be done. The transmission company will, of course, have its own determination of the specification of stuff inside their fence but outside the fence the generator will generally reach an agreement and they can competitively tender it, so they see everything is okay that way.

We've had other people that have said, "No, no, this is terrible. The transmission companies will screw us and they will be slow and unresponsive." What's your view of what the right answer is here and how we end up in a situation where everyone thinks it's fair and reasonable.

**MR TIRPCOU (AEMO):** We have been doing a lot of work over the past two to three years in Victoria because we've heard those concerns, that it is messier, that you do have to deal with a number of parties. We tried to bring in competitive tendering to enable more competition in the provision of those connection and shared services but we do acknowledge that we haven't quite got it right yet. So what we have done in our submission to the AEMC's second interim report on the transmission framework review is propose a new connections model. In that new connections model what we're suggesting is that a connection application comes into AEMO on a national basis, so no matter where you are in the NEM it comes into AEMO.

What AEMO does is it runs an assessment from a system security point of view and a technical point of view and it then goes back to the generator and says, "Well, these are the boxes you need to tick in order to have your connection to the transmission system." What we are then saying is that the generator will negotiate with a number of asset providers and it will then come back to AEMO and say, "Well, we've negotiated with party X, party X is the party that we want to deal with to enable our connection, here's - - -"

**MR WEICKHARDT:** These are construction contractors, are they?

**MR TIRPCOU (AEMO):** These are construction, they could be owners and operators of the assets as well. They then make sure that they tick those service standards boxes and away they go, they'll go and construct and that differs to the current arrangements where you actually deal with a local TNSP in each region. What we're concerned about is that as soon as you go to the local TNSP you're effectively captured. The scope for other asset providers and provide your connection services is going to be more limited.

**DR CRAIK:** So how do you actually get the generator to go and talk to more than the local TNSP?

**MR TIRPCOU (AEMO):** By changing the arrangements you're creating that platform for competition. So what we've seen in Victoria and something that's actually been quite successful more recently is that Mount Mercer Wind Farm has negotiated directly with Transmission Operations (Australia) to own, operate and provide the connection and shared services to enable their connection to the transmission system.

**MR WEICKHARDT:** Who are they negotiating with?

**MR TIRPCOU (AEMO):** Transmission Operations (Australia).

**MR WEICKHARDT:** Who are they?

**MR TIRPCOU (AEMO):** They're related to CitiPower Powercor. So they didn't use the AEMO competitive tendering process so in the case of - I think it might have been the AGL wind farm, Macarthur Wind Farm, AEMO went out to competitive tender and procured those services through a competitive tender process and AEMO run competitive tender process. In the case of Mount Mercer, Mount Mercer actually dealt directly with the asset owners and the asset providers and worked out the right deal for it as a company and then they presented that to AEMO.

**MR WEICKHARDT:** Where are SP AusNet in all this?

**MR TIRPCOU (AEMO):** SP AusNet will always be involved in some way, shape or form because the connection is going to be to SP AusNet's assets and that's where part of the benefits of the Vic arrangements is that you've got AEMO in there making sure that we say, "Well, that's what the interface works are, so that's going to be something SP AusNet will need to do to enable that connection but largely a new terminal station is going to be built by Transmission Operations (Australia)." So it's just making sure that the two bits of kit actually connect up. So it's like the

interconnector issue you were talking about earlier, that we make sure that the technical arrangements are appropriate to enable their connection, that they meet the service standards required under the rules.

**MR WEICKHARDT:** But aren't the transmission companies themselves aware of what the service standards are? I mean, if the generator goes along to a transmission company like AGL and says, "We're very happy to deal directly with them. We're very happy to agree what the service standards are." Why should AEMO get involved if they don't have a problem with that?

**MR TIRPCOU (AEMO):** Our involvement is much less in this new model. We do need to consider what the national system security implications are of a connection. Depending on where you connect in the network can have an effect on interconnectors. Even though we don't like to talk about interconnectors as a concept, it can have an effect on interconnectors and national flow paths. So a local TNSP may not have - it really doesn't care what happens beyond its network.

**MR WEICKHARDT:** So if AEMO ticks off that this isn't going to threaten national security stability at a grid and the generator then says, "Fine, I'm happy to deal directly with the transmission company and negotiate directly with them about the costs and the construction," do AEMO need to be involved in that?

**MR TIRPCOU (AEMO):** No, and that's what we're saying, that we aren't involved in those commercial negotiations in this new model. But it really is from a system security technical point of view that we do need to be involved. I don't think you can get around that. If you have a look at what happens in the US markets when a generator connects to any of the network there, PJM or ERCOT, they are dealing with the system operator planner, they are not dealing with the transmission owner until that point in time where it's actually constructing the assets.

**MR SWIFT (AEMO):** And to facilitate competition you do have to define that interface point. At the moment in some states they do allow some contestability on that but it's well downstream outside the fence of the entire substation whereas in this Mount Mercer one there is (indistinct) there's interface work which actually allow the majority of the work to be done through choice.

**MR WEICKHARDT:** I guess it depends on how long the piece of string is that connects the generator, but is the capital works that's within the fence of the transmission company, is that a major component of the connection cost normally?

**MR TIRPCOU (AEMO):** It certainly can be sizeable depending on what voltages you're connecting up to but they can be quite sizeable.

**DR CRAIK:** It's up to the generation company whether they actually talk to the



local TNSP for connection - - -

**MR TIRPCOU (AEMO):** Exactly.

**DR CRAIK:** - - - or they have a contestable process or what?

**MR SWIFT (AEMO):** At the moment the majority of it, there isn't a choice and there is not even a choice - I've had people complain to me in the past.

**DR CRAIK:** So in those states there's not a choice, not able to be a choice?

**MR SWIFT (AEMO):** Yes. I've had people complain to me you can't even chose the form in which you pay. We have had TNSPs who have refused cash, for example. They've refused the payment up-front, they will say, "Well, you pay it to me over time as a return on the assets." The rules don't prescribe a lot of things in those cases. So it would be quite different to actually set up a framework which tries to facilitate choice there and in some cases the choice may well be the TNSP still provides the best option but in others it could be someone else and in some cases it might be other contractors that you've already got on site which enables you to better manage your risks and the total development of the project.

**MR WEICKHARDT:** We talked before about the ex ante revenue allowance for even SP AusNet for replacement and maintenance providing an incentive for them to think sensibly about what they do and when they do it. Grid Australia was saying there's huge overlap between augmentation and replacement and maintenance, that there's a blurring of the lines which makes sense to me and do you replace this asset with something that's of identical size or do you replace it with something that's a bit bigger or has got different capabilities or flexibility? To what degree does it make sense in the current arrangements that exist, say, even in Victoria for there to be a clear line between stuff that's augmentation and stuff that's replacement and maintenance?

**MR TIRPCOU (AEMO):** There have been a number of cases where we've augmented the system and at the same time SP AusNet have chosen to replace some of their assets. So depending on where it is in their program of works they - I think in our annual planning reports we published the next either five or 10 years worth of their replacement program. That has enabled us to really work with them a lot closer on, "Do we replace certain things at the same time as the augmentation? Do we delay an augmentation by a year or do they bring forward their replacement by a few years," and we've seen numerous examples.

I think some transformers that were augmented a few years back that SP AusNet were looking to replace some circuit breakers at the same and they chose to make sure that they did that and we thought that that was an appropriate outcome

and I think we even looked at what size the circuit breakers should be. So as they replaced them, they may have even augmented some of them as well and that was a joint decision. So it does work in Victoria and that's because the planners and their teams and their engineers who are maintaining the network get together very regularly to discuss these sort of options, and we know when they're going to replace and how they're going to replace and what they intend to replace their assets with. We factor that into our planning decisions.

**DR CRAIK:** Is there any scrutiny of the asset replacement?

**MR SWIFT (AEMO):** In the other states there's certainly asset planning and asset management done and that process lodges with the AER every five years what they are planning to do for that next period of time.

**DR CRAIK:** Is there added value from your processes on the - - -

**MR SWIFT (AEMO):** The process that's done in Victoria does actually try to integrate that into the APR so that there's sort of planning that looks at both aspects and sees whether there's those potential synergies that Louis was talking about.

**MR WEICKHARDT:** If we went down this hypothetical burrow that we were talking about before or saying major augmentation above the threshold, say \$35 million, will be the contingent project, is there any - I don't know how much replacement and maintenance might reach that sort of threshold but is there any logic of saying any project, whether it's replacement, whether it's maintenance or whether it's augmentation above \$35 million ought to go through a RIT-T process of saying, "Well, gosh, if we've got to replace that major asset, maybe there's a different alternative here"?

**MR TIRPCOU (AEMO):** I think there would certainly be some scope for greater transparency on the replacement side because at the moment, I would think that the incentive is to replace, without really going through and identifying, "Well, if we upscaled one of the transformers, we could potential eliminate the second transformer that used to be there," or, "We don't need to reconfigure in the same sort of way." So I don't know whether the building block approach encourages that sort of assessment. I'm not sure whether the five-yearly review process really provides the right sort of scrutiny over those replacement decisions in order to really reconfigure the network. If the demand has dropped off completely at a connection point, okay, you're not going to augment, but then the question is, "How does that change your replacement decision?" Do you really need to replace like for like or can you get away with doing something different?" and at the moment, that transparency just doesn't appear to be there.

**DR CRAIK:** So would you do probabilistic assessments for larger replacement

proposals?

**MR SWIFT (AEMO):** If they were a pure replacement, under the Victorian system, there is no augmentation. I'm not sure there's any other big projects in that category that would exactly fit that bill, but if there was, we would see that coming through in the planning process when they provide information in and we do our annual planning process. But we wouldn't necessarily have a role in that unless we identified some issue that we wanted to talk to them about in terms of those options.

You generally wouldn't expect those things to come up suddenly though. You would hope that your assessment management plan for these long-life assets should be going out quite a few years. There's generally a whole area of professional endeavour on how you manage these kinds of assets in the longer term.

**DR CRAIK:** Sure. If you had to plan the NEM from scratch, how different would it look now? All-encompassing power, yes, and you could start again, how different would it look to how it is now?

**MR SWIFT (AEMO):** I think that is very hard to say. We tried to do some assessment of that in a previous inquiry that I was on, and because you've never had that start, you never find the options that perhaps did exist. There's certainly parts of Australia where you only have to look on the map and you can see that some part of northern New South Wales is actually closer to Queensland than it is to New South Wales - you know, the state borders don't necessarily make the perfect transition point. So in that sense, you might have come up with quite a different pattern. But on the other hand, whenever you do the analysis of interconnect, we find we're not a long way out with what we've got. Generally it's not cheap to shift power around with transmission on the scale we do in Australia, so when you start looking at whether you're going to build a big interconnector between, say, Queensland and New South Wales, you've got to have a substantive difference in the cost of generation at each end to actually warrant the building and then transferring large amounts of energy if there is. As in that case, there are sort of world-class resources at each end, it's quite competitive. So I think any process would have come up with exploiting resources that are close to the load but there would have been some parts of its policy that were different.

**DR CRAIK:** Okay, thanks.

**MR WEICKHARDT:** Again, one of those murky areas because the system is growing a bit like Topsy, but we've I think agreed that transmission is different from distribution; on the other hand, what's the dividing line between transmission and distribution and it seems to differ between individual states. How do we overcome this problem if there's an interface between what happens between different regions affecting the transmission network and the planning of that? There may be also an

impact on the transmission system by what happens in the distribution system and I don't know to what degree you feel that's a real problem currently or not.

**MR SWIFT (AEMO):** I guess it would be unusual for the distribution system to have an impact of that core backbone of the system and the transfers between states but it's quite common that it could have an impact on local connection points and often if one connection point was running low in terms of its capacity and the demand on it, some of the options when you did a RIT-T should really be, "Well, we could transfer load with the subtransmission system between adjacent connection points." There's certainly the processes there to do that.

**MR WEICKHARDT:** That should come out of the RIT-T, should it?

**MR SWIFT (AEMO):** It should, because you should actually identify that as an alternative.

**MR WEICKHARDT:** Okay. To your knowledge and belief, are the RIT-Ts you've looked at - and I guess there haven't been too many, so let's include the reg tests too - we've talked about the fact that sometimes transmission companies just get in their mind, "Well, what we need is a line from there to there and we'll find a way of justifying it and building it and we'll write the reg test to justify it," do you believe that transmission companies outside Victoria have genuinely looked at some alternatives that might involve the distribution network and augmentation?

**MR SWIFT (AEMO):** I think the answer to that is mixed, in some cases. I can recall a number of reg tests that were joint studies where they were signed by the transmission company and the distribution company and they were done together. So in those cases, yes. I imagine they did look at the logical options there. In other cases, some of the published tests were a bit thin on information for us to be able to decipher the real scale of the problem and whether the solution was most appropriate and the solutions tended to be a rather sparse-looking collection. They often didn't have a - there might be a couple of alternates that were all quite similar actually in terms of transmission solutions and didn't seem to expose a whole range of other embedded generation or distribution or whatever options that might have also been considered. In that case, that's not to say they didn't do that; it's just that you can't actually see the options.

When it gets to connection point planning, there is of course always these mixed responsibilities because the distributor also needs to have reliable supply into their network to meet their own requirements. So generally they would get involved to some extent in that process and have a real interest in making sure the solutions were adopted, but whether anyone has any incentive to find the lowest cost solutions is a question, and if you have different offsets in who has got the ex ante revenue to fund and that sort of stuff, it's not easy to decide. The reg tests might decide if

someone else could have it but I'm not sure how you then say, "But I've got the money."

**DR CRAIK:** Are you aware of any cases where a built solution has been undertaken where a demand-management solution would have been less costly and more efficient?

**MR SWIFT (AEMO):** I don't know if we've got any specific examples. There is a range of difficult problems with the way the process is worked out. I mentioned before how a lot of the early reg tests were quite obscure. It's very difficult for a potential supplier of demand side to understand how competitive they will be without really understanding how many megawatts for how many hours. If it was just on some of these real strictly driven by N minus 1 if you actually found out that you only had to knock off a few megawatts every second year, you perhaps could have seen that that would have been very attractive and you don't really get the opportunity to come in there.

We actually reviewed one that came up to a very high cost, didn't it, in terms of the cost of unserved energy that that was making. Now, I would have thought you would be able to get a demand side option for less than that - that was, I think, in the millions for megawatt hour. So in some cases because the information is not on the table a demand side alternative wasn't easily seen. In many cases there wasn't a proponent and in the early tests it required a proponent so if someone didn't actually come and say they'd do that. In some cases because you took a strict N minus 1 you'd say, "Well, you know, is it as reliable? Can I really guarantee it to the same extent that I could if I built my asset myself because I can guarantee that will be done by a particular time and in order to deliver a particular outcome." So there have been a range of things against it. Also you want to fit an exact need to an exact timing.

**DR CRAIK:** Thanks.

**MR WEICKHARDT:** Forecasting, I understand that you were proposing to forecast demand down to connection point level but the AEMC for some reason don't want you to do that. Have I got that right?

**MR SWIFT (AEMO):** I'm not aware of that difference.

**MR TIRPCOU (AEMO):** I certainly think in the transmission frameworks review they're recommending that we do statewide forecasts, so maybe within that context - I can't recall the exact words but I don't think they have talked about connection point forecasts but I would need to revisit that.

**MR SWIFT (AEMO):** If we are to undertake, as you were talking before, a complete ground-up review or second opinion or if we're to actually make the

decision in the first place, you obviously need to actually have a sound understanding of the actual nature and level of demand at the connection point because the statewide forecasts are very useful and informative for a lot of things but in the end analysis, the transmission augmentation and the cost benefit analysis that you do is going to be driven by the both the profile and the level of load that you expect. So that is certainly why we're moving down that path.

**MR WEICKHARDT:** Okay. Can we turn to this fraught subject of optional firm access. Two participants before you we had the National Generators Forum who say this is a steam hammer to crack an egg and (a) it won't work and (b) it's not a big enough problem to really justify anything in that level of complexity. Can you give us your view of optional firm access and whether you support it and if you do support it why you think some of those generators don't like it.

**MR SWIFT (AEMO):** We certainly consider that there would be value in providing a regime whereby generators can secure some level of access, that you've got to be careful about names. I'm not sure how optional that system would be once it started and I'm not sure how firm it is in that context. So there are some issues with the design of the particular instrument. But the concept in general that generators should have an ability to secure access if it was in their interest to do so seems to us to be reasonable and that's on the grounds that a number of states actually get the changeover in generation with the move to the lower emissions, gas and wind. You get a whole bunch of new generation comes in on an old system and it starts to cause congestion in areas that haven't perhaps been there in the past.

The ability for a generator to remedy that at the moment is non-existent so they would then have to be just reliant on the analysis done by the transmission company or AEMO to decide that there was a net market benefit in augmenting that and their own commercial interests could be quite different than a net market benefit interest per se. So we think there are some benefits to new investment and then the development of the network driven by this market pressure for improvement of that congestion.

We also consider that the market currently does have some issues with the way in which the regional nature of the market leads to these sometimes, I guess you'd say, perverse outcomes with the so-called disorderly bidding and when you get disorderly bidding first of all you've broken what I would consider is the first rule in good option design and you haven't discovered the bidder's costs, so that's a problem in the first place. In the second place you've often caused a very large shift in the price, although you may not have contributed to a large shift in actual underlying costs. So often you get to the point that something could shift hundreds of millions of dollars in prices and wealth transfers without actually shifting much at all in terms of underlying costs, so therefore it's very difficult to say that there is a case to build that congestion out.

So there are some issues associated with that particular market design that we have and the bidding that that can evoke at times and we certainly consider that some of these access right models would actually go a long way towards remedying that and forcing more disclosure of actual costs and more circumstances, so there are some real benefits to that. I think there are some issues in the design and particularly one is that the particular instrument designed is not easily tradeable because it's very specific to individual generators and economic efficiency would probably be enhanced if they were more tradeable. I guess the main issue is how do these relate to your regulated development of the network and your regulated pricing and cost recovery and so on. So there's a range of complexities in how you make all that actually work in practice.

**DR CRAIK:** Do you have a view as to how it relates to the regulated planning?

**MR SWIFT (AEMO):** We have looked at that and again, there's different models that you can think of and it's hard to see at the moment whether the thing would be led by regulated investment and then these would be niche opportunities found by generators to fund over and above what the net market benefit drove or whether you think that it would actually drive a lot of investment in itself. I suspect that it would probably be the former because generally the cost of network enhancement is quite high and I can't imagine too many generators would want to pay for massive enhancement of the network, so I think it would tend to be more niche the operation of it.

They've also got this cost recovery process based on the long-run incremental cost of supplying service which is very appropriate from a theoretical point of view but very difficult to apply in practice and would leave generators somewhat exposed in terms of having an unknown cost to the access that they obtain. I think there's more water to go under the bridge on that.

**MR WEICKHARDT:** But in theory, if you move to OFA for both generation and load, would that completely eliminate the need for a national planner?

**MR TIRPCOU (AEMO):** I think it would certainly change the role performed by that national planner. A lot of it would be about getting the right sort of information out there. So what we see with the OFA model for generation is to actually get more information out there about what the current capability of the network is and what the next lot of options are. So it's not just saying, "You want firmer access, therefore I'm going to build you a 500-kV line that goes from here to here." First of all, you have to work out where is the operating boundary of the existing network, how much can we push it. If you do a little bit more on the existing network, it might be raising towers, it might be putting in serious compensation or something like that; does that give you a little bit more capability and is that the sort of thing that the generators are

looking to pay for and therefore are they willing to trade off some of that reliability with the cost that they're paying.

So what we're thinking there is it's really about getting more information out to the market and it puts the decision-making in the hands of the people who really should be making it. So the reason that you go through a regulator test is that you're making decisions on behalf of a number of customers that you can't individually identify. But if you can start to identify who the beneficiaries of an investment are, and in the case of OFAs, it's for a generator or a group of generators, then it's those generators who are making the decision, but you do need to get the right sort of information out there to them and then the question is about the information asymmetries between a business with an incentive to withhold that information compared to what it is that the generator is actually looking for.

**MR SWIFT (AEMO):** There's temptation to try to think through sort of market provision of these services and a lot of people have done that. They always become issues though. When you get customers, it's a very diverse group. How do you act as a proxy on behalf of customers? There is an asymmetry there. A generator loses some money or some opportunity when they are constrained off, but customers are in the dark and that's often seen as a - you know, it's a different level of issue to deal with. One is a financial issue, the other tends to be quite a serious issue.

The other problem that happens in a number of US markets where they have certain rights is you have queuing issues, so the cost of you buying access would be affected by whether I built my stuff before or after you, so people write PhDs on how to play the queuing game and that kind of stuff which doesn't seem overly productive.

**DR CRAIK:** One of the things that's been put to us is that disorderly bidding is only worth about \$8 million a year and in the context of the national electricity market, that's neither here nor there, it's (indistinct) so why bother dreaming up this great system.

**MR TIRPCOU (AEMO):** I think part of the difficulty with disorderly bidding is actually quantifying what the effects are, so yes, the \$8 million might be the sort of marginal cost difference between dispatching one generator over another, but what's difficult to quantify - and we've tried to have done it in the past but again there's information asymmetries - is we don't understand what the consequence on the generator is in terms of its risk and its ability to raise debt inequity, so that's the sort of information that we don't have. If a generator had greater certainty over its investment decisions or less risk at the time of financing and refinancing, what does that do to the spot price? What does that do to its contract price? They're the sort of things that we haven't been able to quantify through a RIT-T or reg test process because we just don't have the information that would enable us to do that. So we



suspect it's actually greater than that \$8 million. We've tried to do some analysis where we've shown wealth transfers of \$300 million under particular situations and I think we gave that to you as part of our submission but in terms of quantifying the true economic efficiencies, it's very, very difficult.

**MR SWIFT (AEMO):** I think that eight million was actually just the underlying productive efficiency cost and I think that was from some time ago now, about 2008.

**DR CRAIK:** Yes, I remember seeing something to - - -

**MR WEICKHARDT:** 2007, I think.

**MR SWIFT (AEMO):** Yes. My understanding is that the AER is about to publish a new piece of work on what it is currently.

**MR WEICKHARDT:** The other thing that we are told is that the OFA only gets you firm access against a thermal constraint and not a constraint due to maintenance or planned outages things of that sort. Is that your understanding?

**DR CRAIK:** So that's only 50 per cent of the constraint.

**MR SWIFT (AEMO):** Not exactly. I didn't understand that comment exactly when I saw it. I mean, the right of access is only to the capacity that's there, so you would have to track through what that meant. But basically all the constraint equation coefficients are included in the analysis, so in terms of the settlements process, it certainly includes all constraints. I did see that point but I'm not really aware of why that is said or where that view actually comes from.

**MR WEICKHARDT:** My last question - Wendy may have others - but my last question is the issue of AEMO as an institution. It's the age-old question that the Romans asked: who watches the watchers? What's the review process or what should be the review process for an institution like AEMO to give assurance that they're conducting the critical role that you've either got now or an enlarged role in the future?

**MR SWIFT (AEMO):** There are a range of measures in place. We have a market audit program to ensure that we're running the market appropriately and that we're following the rules, and that the procedures are efficient and all that.

**MR WEICKHARDT:** Who carries that out?

**MR SWIFT (AEMO):** That is carried out by - it's a contracted process similar to a normal auditor.

**MR WEICKHARDT:** So is it one of the big four audit companies or is it a professional sort of electrical, sparky type of auditor?

**MR SWIFT (AEMO):** No, it's one of the major audit firms. I was going to tell you which one it is but I'll mix up the two if I say - - -

**MR WEICKHARDT:** Yes.

**DR CRAIK:** Is it made public?

**MR SWIFT (AEMO):** Yes. I'll certainly provide that afterwards. I apologise; I should know and I do know but I don't want to say because I sometimes mix up which auditor is which.

**MR WEICKHARDT:** But that's separate from the audit of your financial books?

**MR SWIFT (AEMO):** Yes, absolutely.

**MR WEICKHARDT:** Okay.

**MR SWIFT (AEMO):** And that is specifically of our performance in running the market. We provide annual reports and we have annual meetings of members which include the industry members and the jurisdictions. We report to the Standing Council on Energy and Resources at their half-yearly meetings.

**DR CRAIK:** If you make a mistake - - -

**MR WEICKHARDT:** In your planning, say, if we turn to sort of the network planning function, is there any overview of that and an analysis of - - -

**MR SWIFT (AEMO):** That one we talked about earlier, we think there could be some improvements in the transparency around that but I guess in terms of the market, there's a large range of clauses in the rules that when something happens requires us or someone else to do a review and we provide reporting to the reliability panel under the AEMC on some of those matters as well. There is a publication. There's a regular publication. We have a few a week of reports against various incidents in which we inquire into what happened and whether our systems worked appropriately or whether our procedures worked appropriately. So there are a number of checks and balances on our role as an operator.

We of course have the transparency and disclosure through the public consultation on the planning and the annual publication of material but we certainly agree that there is potential there to improve that transparency and accountability in that sense.

**DR CRAIK:** Okay.

**MR WEICKHARDT:** Thank you very much indeed for appearing and thank you for your input. It's much appreciated. Ladies and gentlemen, that concludes today's scheduled proceedings. For the record, is there anyone else who wants to appear today before the commission? In that case, I now close these public hearings for the inquiry into the electricity network regulatory frameworks. Thank you.

AT 5.20 PM THE INQUIRY WAS ADJOURNED ACCORDINGLY