

# TRANSCRIPT

## STANDING COMMITTEE ON THE ENVIRONMENT AND PLANNING

### Inquiry into fire season preparedness

Melbourne — 18 October 2016

#### Members

Mr David Davis — Chair

Ms Samantha Dunn

Ms Harriet Shing — Deputy Chair

Mr Khalil Eideh

Ms Melina Bath

Mr Cesar Melhem

Mr Richard Dalla-Riva

Mr Daniel Young

#### Participating Members

Mr Greg Barber

Mr James Purcell

Mr Jeff Bourman

Mr Simon Ramsay

Ms Colleen Hartland

#### Staff

Secretary: Mr Michael Baker

#### Witness

Ms Charmaine Quick (affirmed), executive general manager, service delivery, Melbourne Water.

**The CHAIR** — I welcome you, Charmaine, to the hearing. You are the executive general manager, service delivery, at Melbourne Water?

**Visual presentation.**

**Ms QUICK** — Yes, that is correct. Thank you for inviting Melbourne Water to this inquiry. I have really just got a short presentation, where I look at covering Melbourne Water's catchment and a little bit about our water supply network; why fire protection is important to Melbourne Water; Melbourne Water and fire management, and our partnership with other agencies under the NEO; some of our recent fire experiences; and our operational preparedness for mitigation and response.

In terms of our catchment, Melbourne Water is one of only about five cities in the world that has protected wilderness catchments that are uninhabited. Eighty per cent of Melbourne's drinking water comes from those closed catchments. Some of these forested areas have been closed to the public for over 100 years. The catchments are a mixture of state and national parks and are managed by DELWP or Parks Victoria. Melbourne Water, by agreement, manages some of the aspects affecting water yield and water quality in these catchments.

This is a representation of Melbourne's water supply system and the closed catchments, and some of our open catchments. You can see the green areas up towards the east. That is the Thomson catchment, the Upper Yarra, the O'Shannassy and Maroondah, and they are all closed catchments. They supply water into the Thomson Reservoir, into the Upper Yarra Reservoir and into the Maroondah Reservoir. We also have a closed catchment, which is sort of up there into the north — the small one up into the north — which is the Wallaby catchment. We have a number of other catchments which are not fully closed. The Tarago catchment down along the south-east is not a fully closed catchment. But the one thing about our network, and we can talk about it in response to the 2009 fires, is we are actually able to move water around that network to help protect supplies in the event of fire, and most of that area is all state and national park as well.

Why fire is important to Melbourne Water is that basically fire has two major impacts for water supply, one of which is water quality. Now, that is not a picture of water going into our water supplies — —

**Ms SHING** — For the avoidance of any doubt.

**Ms QUICK** — But it does demonstrate what can happen. Now, to get that sort of impact you actually have to have rain. So it is not the fire itself; it is fire and rain that does result in that, and that is why the recovery aspect after fire is also important. The other thing that fire does affect within the catchments is water yield. Now, that time scale along the bottom is 250 years. Most of our catchments are mountain ash; they take a long time to grow. So straight after a fire you tend to see an increase in yields: you get a lot more run-off. But then as the trees mature and start to grow, at that 20 to 35-year mark they are just growing and they are taking up a lot of water, so you actually have a reduction in yield. Then it takes the 150 to 200 years to get that yield back. Now, this is research. I do not think we have actually fully modelled it, but that is what can happen in the event of a fire in the catchment and how it affects — —

**The CHAIR** — You have been measuring it for 200 years is what you are saying. It is not actual measurements; it is incidents.

**Ms QUICK** — Yes, and I think it depends on fire severity and a lot of other parameters, so — —

**Mr Dalla-Riva interjected.**

**The CHAIR** — No, in growth increase. When they are first growing until they are mature.

**Ms QUICK** — In growth. So when they are growing they take up a lot more water, while they are maturing, and once they — —

**Ms SHING** — You're thirsty while you are growing.

**Ms QUICK** — Yes.

**Mr DALLA-RIVA** — That is what I am saying. So if you want more water, do not put trees in.

**Ms SHING** — That is an excellent exercise in future squeezing, Mr Dalla-Riva.

**Ms DUNN** — I would suggest don't cut them down.

**Ms BATH** — Or let them burn. Ms Quick, jump in any time you feel like it.

**Ms QUICK** — So in terms of Melbourne Water and fire management, Melbourne Water is not a fire agency. The secretary of DELWP is responsible for fire management across Melbourne's national parks and state forests, which is largely our water supply catchments. Melbourne Water has strong working relationships with both DELWP and Parks Victoria to manage the risks related to fire in the water supply catchments. Melbourne Water shares responsibilities for managing the risks, largely around water quality and quantity, to Melbourne Water, and I will talk about some of the agreements that we have in place. We do have some land that is vested in us. It is a very small percentage, but we are well and truly aware that under the CFA act we do have some obligations to manage the fire risk on our own land. Some of that we do mechanically, by slashing and various other things, but that can include fuel reduction burning as well. A very small proportion of our land is in that category.

In terms of the partnering with other agencies, we have three agreements in place. So we have the Kinglake and Yarra Ranges national parks catchment management agreement with Parks Victoria, and a memorandum of understanding for the Bunyip, Tarago, Thomson and Yarra tributaries water in state forests with DELWP. Then we also have a tripartite agreement with DELWP and CFA regarding some of our others. Really this just outlines some of the key responsibilities and accountabilities. Melbourne Water's key accountability is, and I will talk a little bit more about this, largely around things that affect quality and quantity of water.

In terms of our recent history with fire, this goes to, I suppose, how we have evolved over time. It is a short history. I know that we have been managing the catchments for a long time. So it is some of the investments that we have made in partnership with DELWP. So after the 2002 and 2003 fires that is when we started to support planned burns within the catchment. Prior to that time we did have a policy of no fuel reduction burning. So we have implemented that since 2002. We also began paying for a stand-by water-bombing helicopter, so that was the first time Melbourne Water started contributing to aerial resources.

After the 2006 and 2007 fires, the Great Divide fires, which were the fires that were threatening the Thomson catchment, some people might remember that DELWP constructed — I have got the numbers — in the order of 500 kilometres of strategic firebreaks, not only protecting Melbourne's catchments but protecting a range of other assets. Melbourne Water has taken on the responsibility of maintaining those strategic firebreaks — the ones that are close and within the water supply catchment network.

When I talk about the water-bombing helicopter, when I say we funded it, it is part of the state aircraft unit; it is not our private helicopter. Following Black Saturday we did fund the construction of a helipad near the Maroondah Reservoir to assist with having aircraft close to the catchments. We also began participating in the East Central bushfire risk landscape program to assist in identifying the priority of planned burns. This is really being led by DELWP and really we are just inputting our research and the values that we need protected in terms of quality and quantity. In 2016 we continue to support bushfire preparedness, and we are continuing to work with our partners, really focused around how we can contribute our information on risks to the water supply catchments for Melbourne.

In terms of operationally what we actually do, the catchments have 1860 kilometres of road networking. Now, some of that is there to access our own assets. We have our own assets in terms of rain gauges, weirs, aqueducts and various other things. This goes to why, I suppose, we have resources in this area. We are just moving into the opening of all those catchments. We would clear all those roads prior to the fire season; we slash. You will see the photo on the right is a typical road but it is also a firebreak as well, so we would be out slashing that as well. We are also doing road grading and making sure that we can get into the catchments in the event of a fire. We also maintain the 547 kilometres of strategic breaks, so we would be going out there and slashing them and making sure that they are well maintained prior to the fire season.

Melbourne Water's approach, and it has been in our agreements, is first attack. So we try and maintain fires as small as possible. If really they go longer than a day, or if they start getting any size, that is when DELWP or Parks Victoria really take over. Certainly, if we have a big enough fire, in terms of the 2006 fires and also the 2009 fires, our resources become part of the DELWP broader fire response. We contribute about

100 DELWP-accredited firefighters. We train to the same standards as DELWP. We have 19 slip-on vehicles, 5 bulldozers and 5 large tankers. We also man four fire towers; once again, that is critical for early detection. And of course we have our helipad for the water bomber.

In terms of our preparation, as I said, certainly preparation is important, but we look at it in terms of response and recovery as well. So as I covered, on public lands we are out maintaining roads, fire breaks and fire towers. We are just bringing on our casual resources to assist with a lot of that work. On Melbourne Water-owned land, which is a very small percentage of land, we do participate with the CFA and DELWP under the integrated fire management planning regimes.

We do deliver first attack on our catchments, but once again we would hand responsibility over to DELWP if it does become a larger or more significant fire. And recovery — I do not want to underestimate the importance of recovery. What we saw in 2009 was getting into our catchments early after the fire — 30 per cent of our catchments were burnt during Black Saturday, and we did not have any issues with water quality afterwards. Some of that was to do with the fact that we got into our catchments early; we focused on silk curtains, hay bales and all the remediation options that we had available so that if we did get rain after those events we had a better chance of it not impacting water quality.

We also have ongoing research, and this is to help inform DELWP in their risk modelling about the impacts of either planned burnings or bushfires on water quality and quantity so they can put that in their models and help prioritise where the best bang for the buck is in that area. That is the end of my presentation. Thank you.

**The CHAIR** — Thank you for the presentation. This is an interesting new aspect of fire season preparedness. I am going to ask you about one specific site. At the end of the Thomson Dam there is a large escarpment, which I have seen previously — you may know the one I am talking about. It is one of the wettest places in Victoria, and it is also an area that is very significant for the inflow to the dam. It is also an area, as I understand it, that has never burnt.

**Ms QUICK** — I cannot — I am trying to visualise where — —

**The CHAIR** — You cannot answer this for me?

**Ms QUICK** — No, I am sorry. No, I cannot answer that.

**The CHAIR** — Maybe we will take that on notice, if that is possible — to understand the perimeter around the Thomson Dam and that escarpment at the end. It has certainly been put to me that there is a significant risk if that burns, and it is a difficult area to do preparatory burning.

**Ms QUICK** — And DELWP would probably also, because that is who we work with over those, but we can probably take that on notice.

**The CHAIR** — The second thing I am interested to understand — we were referring a minute ago to the gradient, as it were; where there has been a significant fire, there is initially bigger run-off, as I understand it, but also less high-quality run-off. Then later as new plantings grow, there is a significant loss of inflowing to the dam system. So do you have any modelling that looks at the impact of a very large set of fires through our catchments, and what it would mean over 30 or 40 years if there was such a catastrophic fire hitting a number of our catchments?

**Ms QUICK** — No, I am not aware that we have done the full range of — what that would look like. I am not aware that we have done that full research, but I can take that on notice as well to see whether we — —

**The CHAIR** — You can take that on notice as well?

**Ms QUICK** — Yes.

**The CHAIR** — And finally, do you have any light to shed on what has been a discussion in this inquiry around the new model for more targeted burning counterpoised, as it is with some evidence, with a volume-burning target?

**Ms QUICK** — Yes, we support the concept of risk-based burning targets. We think that that, and factoring in the impact to water quality and quantity, is the best way.

**The CHAIR** — So you support that. How have you arrived at that decision?

**Ms QUICK** — I suppose from our point of view it is — and I am not a fire expert, so we do have to rely on DELWP for this information — —

**The CHAIR** — So you have not made any separate assessments?

**Ms QUICK** — No, we have not made any separate assessments. Our focus has been on research that can input into those risk conversations.

**The CHAIR** — Are you aware of any risk of larger fires coming from deeper in national parks or state forests and then engulfing the forest surrounding the immediate catchments? Has that risk been modelled?

**Ms QUICK** — You would have to ask DELWP, but a part of the construction of the strategic fire breaks in 2006 was part of that. The construction of those strategic fire breaks was to protect from fires coming from outside the catchments.

**The CHAIR** — Thank you.

**Ms SHING** — Thanks, Ms Quick, for your presentation and for answering questions before the inquiry today. I would like to go to the point of community engagement and consultation. It is one of the key features of *Safer together*. It is a really central part of the way in which bushfire preparedness occurs and occurs in the best way possible. We see very clearly that there is a correlation between best practice engagement and consultation on the one hand and better preparedness on the other as far as risk management is concerned. Given the work that you have done to embrace new ways of managing the risk to supply and the preservation of the existing resource, what work is done with, I suppose, the community and the beneficiaries of Melbourne Water's work to make sure that people are aware, firstly, of what is going on in terms of managing the resource, and secondly, how the general issue of bushfire preparedness impacts upon them as second or third-tier recipients of good management?

**Ms QUICK** — Really all of the fuel reduction burning and that side of things are really covered by DELWP under our agreements. They cover the community engagement side of that. Really, for us, we just talk about our own side — making sure the roads and catchments are open and protected. We do not tend to do a lot of that community engagement side. We just participate with DELWP as a stakeholder that gets factored into those risk decisions.

**Ms SHING** — So DELWP takes a lead role in relation to the consultation, but what about communication with Melbourne Water customers and the community at large? Surely you must do some communication about your work not just through annual reporting processes and the obligations you have as a statutory body but from a proactive perspective, particularly given the fire-prone area in which we live here in Victoria and the importance of water in recent years around security of supply.

**Ms QUICK** — Most of that communication with the community will happen through the three retail water companies. We do not tend to do anything proactively in that space. We do have it as part of our pricing submission, so it is very clear as part of our pricing submission that this is one of our obligations. We get funded under the Essential Services Commission for funding these works.

**Ms SHING** — Perfect. Finally, you have talked about fuel reduction and slashing and that sort of proactive work that can take place. I am interested to see what global research and new developments in technology have led to around an understanding about how to preserve the security of our supply, not just in the immediate aftermath of a big fire event — an intensity that then obviously will impact upon more significant soil layers and therefore lead to potentially greater risk and a drain on supply in the long term. What are the issues and what new technology is there around the ongoing cycle of management of the resource, and what have you learnt from other jurisdictions?

**Ms QUICK** — I am not quite sure. Really, apart from the research that we pointed out, I think, in the submission, that is really most of what we have done. In terms of other use of technology, we really participate

with DELWP, leveraging off their technology in fire towers. Certainly Melbourne Water is using drones for acid inspections and stuff like that and connecting in with DELWP over the use of drones and those sorts of things. We have our research program that we have talked about, and then the other use of technology is really where we have linked in with DELWP, partnering with them, and we would leverage off their experiences.

**Ms SHING** — Is Melbourne Water satisfied in general with the level of interagency communication and collaboration on achieving better bushfire preparedness?

**Ms QUICK** — I was involved in the 2006 fires, and I was the Melbourne Water incident controller for 2009. I cannot speak more highly of how we worked together and how we continue to work together in this space.

**Ms SHING** — Fantastic. Thank you very much for answering those questions.

**Ms BATH** — Ms Quick, in the Morwell hearing we heard from a very passionate scientist called Mr Packham. He raised some issues around fuel loads in the Yarra catchment. He made some comments, and I would like to hear your feedback in relation to those. He said that 80 per cent of Melbourne's water comes out of the Yarra catchments.

**Ms QUICK** — It depends on what the definition of the Yarra catchments is, but as I said in the presentation, 80 per cent comes out of our closed catchments, so that is Thomson as well as Upper Yarra and Maroondah and Wallaby.

**Ms BATH** — He also made the comment that after a high-intensity fire — so a significant fire — there is increased water supply, and I think you mentioned that, but it cannot be consumed. Would you make comment on that? You have made some initial comments about trying to suppress that from happening, but in terms of water quality, define the science in and around how you test for that and how you test when it is ready to be consumed again, please.

**Ms QUICK** — We have very detailed protocols with the department of health around testing, but we also have detailed contingency plans. One of the benefits of our network is that we can actually move water around. If I think about the 2006 fires, we were moving water from the Thomson catchment into the Upper Yarra dam so that if the Thomson catchment was affected, we would protect that water in the Upper Yarra. In 2009 we were moving water from the Upper Yarra Reservoir across to Silvan and Cardinia, which do not have catchments that would be affected by fire. In terms of the water quality, we have detailed testing regimes in line with department of health regulations, but we also have significant contingency plans, and we do have the ability to move water around, which we would proactively do in the event of a fire and have done in past fires.

**Ms BATH** — And the EPA — you would be an integral part of their operation?

**Ms QUICK** — More on the waterways and drainage side of things. During fires waterways also get affected, so we would be working with them more on that side of things. The department of health would be the key one for water supply.

**Ms BATH** — You mentioned that you employ fire staff casuals.

**Ms QUICK** — Yes.

**Ms BATH** — Is that through DELWP or on your own?

**Ms QUICK** — Yes, it is on our own, but they are accredited through the DELWP system, and we actually find that a lot of them have worked with DELWP as well through that process.

**Ms BATH** — What numbers do you hire every year?

**Ms QUICK** — We hire about 43, so it is small.

**Ms BATH** — Would that be equivalent full-time?

**Ms QUICK** — Just for the fire season, yes.

**Ms BATH** — Forty-three people.

**Ms QUICK** — Yes.

**Mr MELHEM** — Ms Quick, thank you for coming today. Since the Black Saturday fires — and I believe they had a major impact on the water running into our system — what has Melbourne Water learnt from that and what actions is it taking? I think you have touched on that briefly, but what have you got in place now to deal with a situation like this when it happens?

**Ms QUICK** — As I was saying, although we had 30 per cent of our catchments affected by bushfire, we actually did not have any water quality events or water supply issues as the event of that. Some of the learnings that we got were really about that early intervention and the recovery point of view, and how effective that can be and how effective it is being able to just get out there, even after a small storm event, making sure you are going back out and making sure your silt curtains are still intact, replacing hay bales. So there are a lot of things that you can do in the catchments that will actually help mitigate a lot of that. We learnt that that was actually a very effective practice.

For us, we have to rely on DELWP I suppose in terms of the research and other technologies. The use of firefighting equipment I think has been very good, but we have had that since 2002. I think now for us it is about keeping participating with DELWP and the fire agencies and just continuing that strong relationship and strong partnership.

**Ms DUNN** — Thank you, Ms Quick, for your presentation this morning. I am wondering if you are aware of any preventative burns that have been undertaken in the catchment areas that have become out of control?

**Ms QUICK** — I have no awareness of that. DELWP would have that information.

**Ms DUNN** — Okay, thank you. As a follow-on from that, I am wondering if you are aware of any time that there might have been an incident of fire retardant materials ending up in the water catchment as part of bushfire fighting strategies?

**Ms QUICK** — The retardants that are used during firefighting have been checked by the department of health and are suitable for use.

**Ms DUNN** — Should that most horrible thing happen, that is still not going to impact on the water quality because of the nature of the retardant in there?

**Ms QUICK** — No.

**Ms DUNN** — It is my understanding that post the 2009 fires the O'Shannassy catchment was taken offline.

**Ms QUICK** — All of our reservoirs are in and out of service. They are not direct supply. I am not aware that it was actually taken offline from a supply point of view because of the fires. It may have been taken offline for other reasons, but I am not aware it was taken offline for that.

**The CHAIR** — Can you take that on notice?

**Ms DUNN** — Yes. Perhaps if you could look at that, that would be good.

**Ms QUICK** — Yes.

**Ms DUNN** — In terms of moving water around — and this could be a stupid question — if I am looking at the Silvan closed catchment, can the water only go down to Cardinia? It cannot go back up. It is gravity fed.

**Ms QUICK** — I think we actually have to pump it across to Silvan and Cardinia.

**Ms DUNN** — I understand that it can go from the Thomson down to the Upper Yarra and it continues down, but can it go the other way?

**Ms QUICK** — Can it go from the Upper Yarra to the Thomson?

**Ms DUNN** — Yes.

**Ms QUICK** — No. That one is gravity fed.

**Ms DUNN** — So it depends on where you have to shift it as to whether that is possible.

**Ms QUICK** — Yes.

**Ms DUNN** — I was just checking; I was not sure. I noticed in your slide presentation you talked about a tripartite agreement; I think it was for bushfire management and planned burning arrangements. I am just trying to get a sense of what is in that arrangement.

**Ms QUICK** — I will just check my notes on that one.

**Ms DUNN** — That is perfectly all right.

**Ms QUICK** — It is a fairly high-level agreement. It is really just a commitment to working collaboratively in relation to bushfire management and planning burning and outlining some high-level arrangements to facilitate that cooperation. So it is a very high-level agreement.

**Ms DUNN** — Is it essentially around who does what in the relationship?

**Ms QUICK** — Yes.

**Ms DUNN** — Would it be possible to get a copy of that agreement for the committee?

**Ms QUICK** — I assume there are no issues with that.

**Ms DUNN** — Terrific. Thank you. In relation to your first attack, at Melbourne Water you deliver that in the catchments, you are operating fire towers and I think your slides talked about that being a cost that is borne by Melbourne Water to do that. I noticed there was some heavy equipment there in relation to bulldozers, so I am assuming the same arrangements apply that you have personnel who are qualified to operate that equipment all year round and you just pull them in when you need them for bushfires.

**Ms QUICK** — It depends on what it is, but some of them would be there all year round and some of them we would bring in in the casual pool as well.

**Ms DUNN** — But it is a matter, I guess, of ensuring they have the qualifications to do the work, particularly on the heavy equipment.

**Ms QUICK** — Yes, absolutely.

**Ms DUNN** — That will do me for now, Chair.

**Ms SHING** — You reserve your right to come back?

**Ms DUNN** — I might come back.

**Mr MELHEM** — You do not have that right.

**Ms DUNN** — Oh, come on.

**Mr DALLA-RIVA** — There was a slide earlier on where you mentioned there was a component where you had total responsibility for fire management, but I have not got it up there.

**Ms QUICK** — Yes, I have got it. It would be that Melbourne Water has direct responsibility — —

**Mr DALLA-RIVA** — Can you just bring the slide back?

**Ms QUICK** — So it is that Melbourne Water has direct responsibility for fire management on land it owns or is vested in.



**Mr DALLA-RIVA** — I will wait until we get it up. So do you have direct responsibility under the CFA act, section 43?

**Ms QUICK** — Yes. So that would be the equivalent to VicRoads and any other landowner who owns land. Everybody has this obligation.

**Mr DALLA-RIVA** — The question may have been asked, but have you got a map of that or is it something that you can provide on notice?

**Ms QUICK** — In terms of which land? Yes, we can get them out. It is really very small sections, if I go back to the Melbourne Water map. If you can see where I am pointing, it is really just a small strip of land around there.

**Mr DALLA-RIVA** — Right, but they are quite large. I know it looks small on the map, but — —

**Ms QUICK** — Yes, but they are around the 10 000 to 12 000 hectares.

**Mr DALLA-RIVA** — Yes, which is quite significant. So just back to that statement there, on the next slide up, is that where the 43 are based?

**Ms QUICK** — No, the 43 are really there to protect all of our land. So they are there. We have them stationed at Warburton, Upper Yarra and Wallaby. Some would be located in these regions. It really does depend on the day. Really for these areas we work with DELWP and the CFA. Once again they have got strategic firebreaks around them and those sorts of things as well.

**Mr DALLA-RIVA** — Yes. So was that that picture earlier on of the grader that is used to have a buffer zone?

**Ms QUICK** — Yes.

**Mr DALLA-RIVA** — So have you had any major fires in those areas?

**Ms QUICK** — Not that I am aware of.

**Mr DALLA-RIVA** — So maybe take that on notice as well.

**Ms QUICK** — Yes.

**Mr DALLA-RIVA** — And if they were significant fires in the Black Saturday period, it would also be worthwhile to know.

**Ms QUICK** — They were certainly not; there were no fires there in 2009, no.

**Mr DALLA-RIVA** — They were not?

**Ms QUICK** — No. If I just go back, there was some fire in the Tarago catchment, but there was certainly none in those small areas.

**Mr DALLA-RIVA** — In those areas of direct responsibility?

**Ms QUICK** — No.

**Mr DALLA-RIVA** — Okay, thank you.

**Ms DUNN** — The slides talked about roading, and I just wanted to talk about the roading that you maintained. Is that in both open and closed catchments, or was it just in the closed?

**Ms QUICK** — Just in the closed.

**Ms DUNN** — And the other thing I noticed was that Melbourne Water had a change of policy in 2002 in relation to preventative burnings. Are you aware of what influence that change in policy had?

**Ms QUICK** — As I understand it, it was really learnings that came out of the 2002–03 fires. I was not around at that time, so I cannot talk from personal experience, and we would have been taking advice from the then DELWP and those departments at the time.

**Ms DUNN** — I am wondering if it is possible for you to look back and see I guess the evidence bases for that policy shift. I am not sure whether it will be there, but I completely understand you were not there at the time.

**Ms QUICK** — Yes.

**Ms DUNN** — That is great, and just take that on notice.

**Ms QUICK** — Yes.

**Ms DUNN** — Fantastic, thank you.

**Mr EIDEH** — How significant is the risk of bushfire to the water supplies managed by Melbourne Water?

**Ms QUICK** — The two risks in the presentation are that following a bushfire and a rain event there can be impacts on water quality and then there are long-term yield implications for the water supply, but that is over the longer term. So they are the two impacts.

**The CHAIR** — Ms Quick, thank you very much for your presentation. I note that there are a number of documents and pieces of information that we seek. The secretariat will be in touch over the next period to be in touch to follow up with those items, but thank you very much.

**Witness withdrew.**