

# TRANSCRIPT

## LEGISLATIVE ASSEMBLY ENVIRONMENT AND PLANNING COMMITTEE

### **Inquiry into Tackling Climate Change in Victorian Communities**

Melbourne—Wednesday, 26 February 2020

#### **MEMBERS**

Mr Darren Cheeseman—Chair

Mr David Morris—Deputy Chair

Mr Will Fowles

Ms Danielle Green

Mr Paul Hamer

Mr Tim McCurdy

Mr Tim Smith

**WITNESS**

Dr Richard Thornton, Chief Executive Officer, Bushfire and Natural Hazards Cooperative Research Centre.

**The CHAIR:** Good morning, Richard. Welcome to the public hearing. Before we begin there are some important formalities that I must outline. All evidence taken today will be recorded by Hansard and is protected by parliamentary privilege. This means that you can speak freely without fear of legal action in relation to the evidence that you give. However, it is important to remember that parliamentary privilege does not apply to comments made outside of the hearing, even if you are restating what you have said during the hearing. You will receive a draft transcript of your evidence in the next week or so for you to check and approve. Corrected transcripts are published on the Committee's website and may be quoted from in our final report.

I understand that you have been informed that today's proceedings are being broadcast live on our Parliament's website. Please be aware that footage from the website can only be rebroadcast in accordance with the following conditions. The material must only be used for the purposes of fair and accurate reports of the proceedings. It must not in any circumstances be used for satire or ridicule or commercial sponsorship or commercial advertising. Broadcast material must not be digitally manipulated. All excerpts of the proceedings must be placed in their context to avoid any misrepresentation, and remarks that are withdrawn are not to be broadcast unless the withdrawal is also broadcast.

Thank you for making the time to meet with the Committee today. Could you please state your name and your title before beginning your presentation, and I do apologise for holding you up a little.

**Dr THORNTON:** Thank you, Mr Chairman. My name is Dr Richard Thornton. I am the Chief Executive Officer for the Bushfire and Natural Hazards Cooperative Research Centre. We are happy to appear before you today, and as I said, I am the Chief Executive, representing the views of the Bushfire and Natural Hazards CRC. I would like to say a few words about us before we get going, so let me start by outlining who we are and note some of the important relationships we have in Victoria.

The CRC is a research centre registered as a not-for-profit public company limited by guarantee. We are funded by the Commonwealth Government's CRC program from the Department of Industry, Science, Energy and Resources. We started operations in July 2013, and over that period of eight years we will receive around \$47 million from the Commonwealth. This is matched by funding both cash and in kind from our other partners, and for those who can do the maths there that means the CRC is due to end on 30 June 2021, a little over a year from now.

I will say we are actively seeking opportunities to continue this national research program beyond that date. Our partners include all states and territory governments, either as a whole state or through specific agencies. The partners also include non-government organisations such as the Australian Red Cross, RSPCA in Queensland and Volunteering Queensland, the Australasian Fire and Emergency Service Authorities Council—or AFAC, as it is known—and Fire Protection Association Australia, as well as many of the research organisations across the country, including universities, the Bureau of Meteorology and Geoscience Australia. We have roughly 200 researchers and 100 research students in all states and territories involved in the centre.

In relation to this Inquiry I would like to put on record that we receive funding from the following Victorian Government agencies: the MFB, the CFA, DELWP, EMV and IGEM. We also conduct an extensive research program for DELWP under contract, focusing on bushfire issues. The Bushfire and Natural Hazards CRC has a focus on all sudden onset hazards, except those that relate to health and animals. We also are built on 10 years of research at the previous Bushfire CRC. Indeed, I was the Research Director and Deputy CEO of that organisation prior to 2013.

While we have a broad-based focus the bushfire threat to Australia is one of our core hazards, and we spend roughly 20 per cent of our budget on research that is just addressing that hazard but around 80 per cent of our research effort when we factor in non-hazard-specific research. We are guided in our work by the *National Strategy for Disaster Resilience* and the new national framework for disaster risk reduction. We also focus on nationally significant systemic and large-scale problems in the natural hazards area.

There are a number of points I would just like to emphasise. I understand this committee is interested in the recent bushfires in Victoria and Australia more broadly, their potential causative factors and impacts. I will start by saying bushfires in Australia and in Victoria in particular are a natural and inevitable part of the environment. Our vegetation has evolved with and indeed promotes and requires fire as part of its cycle. This is a problem for us as a result of the fact that we place things that we value in their way. That does not mean we cannot do something about their impact, just that we have to accept that we cannot eliminate fires from the environment, in fact nor is it desirable.

What does this mean in practice? We, the CRC, consider that any discussion relating to bushfire risks must be seen as one which includes all parties—public, private and across all land sectors. This work must focus on the mitigation of the impacts of fires and building of community resilience. This can be achieved using many approaches. Firstly, through the management of fuels in the landscape, and that is critical, as is noted in many reviews currently underway in Victoria, other states and the recently announced federal royal commission. I understand this is not the focus of this Committee's Inquiry so I will not say more on that topic except to say that the CRC is organising a national fire fuels science forum in Canberra on 23 and 24 March to examine the various points of contention in the science around fuel reduction.

Secondly, it is becoming clear that fire seasons around the world are getting longer. Our partners, both researchers and practitioners, are telling us they are starting earlier and finishing later. Our colleagues at BOM and the CSIRO also note in the *State of the Climate* report released last year that the cumulative fire danger during fire seasons is also increasing. This may mean in the long run this has some implications for resourcing the fire services. It also reduces the amount of time available to undertake preventative actions, particularly hazard reduction burning. As the climate changes to a warmer and drier one the occurrence of weather conditions like those seen on Black Saturday, Ash Wednesday and of course this season will become more frequent. This will combine with more vulnerable people living in at-risk areas owing to the growing and ageing population.

Our research following major fires in all states in recent years consistently tells us that community members understand that they live in bushfire-prone areas but that they do not consider themselves personally at risk. The issue of community education, particularly relating to risk perception and understanding of warnings, has been a continual message from inquiries following events. Our research is helping to address some of these issues, but there is still a lot to do. The issues relating to community understanding of risk ultimately underpin many of the issues relating to preparedness and the inability to consider mitigation fully.

Importantly, the CRC believes that mitigation will always be better than response and recovery. This is not just an economic argument; mitigation means communities do not have to endure the personal and social losses that come from major disasters. Mitigation is not just about short-term seasonal preparedness; it is about longer term planning and includes issues relating to land use planning and building back better, building codes for new construction, incentives and retrofitting existing assets. These are all intensely politically charged topics. In fact we know that there is political capital to be gained by providing disaster relief that is lost when politicians ask communities to undertake their own risk reduction activities.

These factors will mean we need to reduce the fuel levels more at a time when the windows for doing this are shrinking, we will need to rely on our firefighting resources more when the northern and southern fire seasons start to overlap, potentially reducing the availability of resource sharing, and we need to factor in that in reality our volunteers, who we rely on for response to many hazards, only have a finite number of hours over the summer periods to give and that these need to be managed with care, lest they are spread too thinly.

What all these points lead us to is the importance of better disaster resilience in our communities and in our natural landscape; a better, more informed approach to mitigation; better building and rebuilding; and better management of firefighting resources, including our people; as well as a recognition that some places where we choose to live may not be appropriate in the future.

Thank you for allowing me to raise some points that I believe are critical in the future consideration of your Committee, and I am happy to answer any questions you may have.

**The CHAIR:** Thank you, Professor Thornton. I do have a couple of questions. Obviously, certainly in the Victorian context—and I would expect this to be the case in other states as well—we have got lots of

communities that have historically existed next to our bush. Many of these communities were built a long time ago and every now and again there is a threat from bushfire. It seems to me that because of climate change we now have bushfires more often, burning at hotter temperatures, creating their own weather events and the like. I would have thought in part there is possibly an engineering fix to a lot of these problems. What is the research showing in terms of the cost of building a house that can tolerate bushfire as opposed to your normal, typical, standard house? Is it a 30 per cent more expensive proposition, is it 50 per cent, is it 100 per cent? What is the back-of-an-envelope cost difference between a house well designed for bushfire versus one that might be designed more for a suburban environment?

**Dr THORNTON:** I think it is always, 'How long is a piece of string?'. Clearly if you are going to put extra protections into building a house, whether it is glass systems or screening systems or non-combustible material, it is going to probably cost more than otherwise.

It will depend on how far you are from the bush. What was introduced following Black Saturday, amongst other things, was a need to calculate what is called a bushfire attack level, a BAL level, and that will dictate how many changes you need to make. There are researchers around who say that you can create a house that is not overly expensive that would be resistant to bushfires. There is work in that space. I do not know, and I have not seen any figures that say, what the average cost is to rebuild if you are using new materials.

I think our biggest challenge is, as you say there, a lot of places were built a long time ago that potentially were not built to any standards. There is no requirement anywhere to do retrofitting on those. And indeed even with new properties, if we apply the new building standards, there is no requirement from lockup and occupancy to actually maintain those houses in a way that keeps them resistant either.

**The CHAIR:** So in areas where properties were built a long time ago, where there is an acceptance that bushfire is now a greater threat, should the Victorian Government be imposing an additional burden on those property owners to retrofit their homes out to be more capable of providing shelter from wildfire? Are we getting to that point where we need to start taking steps like that where we are requiring communities to make those private investments into their own dwellings?

**Dr THORNTON:** I think it is hard. I am not going to comment on whether you should or you should not because I think that is a discussion for yourselves. The indications we get from people like the CSIRO, who you heard from before, and other researchers are that we are certainly seeing an increase in risk, whether it is fire, whether it is flood, whether it is whatever.

How we encourage communities to understand that increasing risk is a challenge. We need to be able to get that information out in an unambiguous way so that people at a household level can understand the risk of where they are living, and they will make a choice then of what is the right amount of investment that may be worth putting in.

It is an interesting example if I may pick up on something that is happening, for example, in Queensland with the cyclone risk. Within Townsville there was a trial—I think it now applies across most of northern Queensland—where at least for low-income householders there is now a grant scheme that enables those people to take retrofitting activities for cyclones on the understanding that if you reduce the risk of one or two houses in the neighbourhood, it actually reduces the risk for everybody else.

The same can apply in the bushfire sense. The risk that exists on one property may well be increasing the risk for other properties in the same street. So we need to look at some of those areas where we are getting multiplication of risk and how we enforce, in a lot of cases, the regulation that already exists. So enforcement becomes a bigger issue as well.

**Ms GREEN:** Just following on from that, Mr Thornton. In relation to, say, section 32 documents and tenancy documentation, do you think that Victoria's regime at the moment is adequate in terms of providing advice to prospective property purchasers and also renters? And would you say there was any jurisdiction in Australia that does it better than others?

**Dr THORNTON:** I can say that we have not done any analysis on different jurisdictions, between them, so I cannot comment on which ones do it better. I mean, the publication of risk would be a useful addition to home owners, but it is not just those that are moving at any particular time or tenants that are moving, it is actually the

people who have been there a long time who may accept that they live in a bushfire risk area but have not seen a fire for the 20, 30, 40 years that they have lived there and really it is not front of their mind.

At the end of the day, for preparation we have 52 weekends in a year that most people would be able to do meaningful things around their properties, particularly in the urban interface. How people choose to use those 52 weeks a year is at one with a perception of risk. If we cannot get the perception of risk high enough to say, 'I am going to spend at least one of those 52 weekends doing something about the risk about my property', then it will not happen. So that community education, that community warning and importantly the data that sits behind which properties are at risk and what is the risk needs to be there.

**Mr FOWLES:** Just to follow up on that one, what sort of resources do you think would be required if we were to launch an education program that got that appreciation of risk to what you would say is an acceptable level?

**Dr THORNTON:** Look, I do not think it is actually a matter of resources. I think it is making sure that we understand how to put that message across. It is always complex to get people to understand risk. We have done it quite well in the areas of road safety where people now buckle up and actually pay attention to some of these things. We still have a way to go to take that link from 'I understand I live in a risky area' to 'I know it's a risk for me'. So even that conversation about how you plan for a bushfire and when is the right time to start planning with your family about where you go is being pushed really strongly by the agencies all around the country. The same applies to storm seasons and to flood seasons, but it is hard to actually get people to do that because it is not front of mind, particularly in winter when it is wet and cold and such.

**The CHAIR:** Can I just ask a follow-up question on that point? In a lot of these communities I think it probably falls upon local government really in terms of using local laws to take a stick to irresponsible property owners who are not being responsible. Is that sort of regime still appropriate? Is that something that should continue to be the responsibility of local government? Often in these smaller communities where the risk profile is higher they do not necessarily have great big rate bases to engage appropriate numbers of local laws officers to have the big stick. Do you think we need to consider ways in which we might do that better? I accept education and all of that, but when you actually get down to, you know, in a street there are one or two that are doing the wrong thing and the majority are doing the right thing, how do you pressure those inappropriate people to do the right thing, if that makes sense?

**Dr THORNTON:** It is a hard question because it is not popular to do that. I think in New South Wales they have an ability I think through the RFS to be able to compel people to clear property, for example, and reduce the risk. If the local community does not, then the RFS will come in and do it for them and bill them for it. My view would be that if we have regulation that says you have got to do something, if we do not enforce it, there is no point in having regulation. So that is important.

I think the other part of that, though, now is in the context of your Inquiry and what we have just heard from CSIRO, is the future risk is one where we cannot just keep saying, 'Well, if I look back 20 years, this is the experience I've had'. The next 20 years are not going to be the same. They are certainly not going to be the same because we are going to see more days potentially like Black Saturday, more days potentially like this year where fires will be intense.

**Ms GREEN:** Just following on, still on that point, you said, 'Out of sight, out of mind' in winter. I had an experience with the Plenty Gorge fire in Bundoora on 30 December, and it seemed to me that in the suburban streets that were abutting that fire it was the furthest thing from their mind because they were still cleaning up from Christmas and not cleaning up their properties. But they were not necessarily properties where they could undertake mitigation—townhouses and things like that—so they actually did not have a lot of vegetation. But it was a complete absence of any idea. I am a CFA volunteer of 13 years, and I find people in the community who do not even know the difference between north, south, east and west. So that says to me that it is a huge, huge challenge, particularly for people.

The Chair was talking about, 'How do you make property owners prepare?' I do not think it is about that, with respect. I mean, after that event on a rainy day like today, 10 days later, CFA did an 'Okay, let's do a debrief about what happened'. It was a rainy day like today. There must have been 1500 people in this tiny hall in Plenty and people asking questions. But the CFA volunteers said, 'Well, we actually had information sessions

in December and there weren't any people beyond the second row'. So there is that human nature. I get so frustrated as a firefighter because every year you see reporting on people responding to fires around their communities, around their homes wearing thongs, shorts. I just go, 'How can you not know this?'. It is just that real human nature. How do we get around it and make people understand the risk, particularly in the context of climate change because the risk runs deep into suburbia?

**Dr THORNTON:** Just to pick up on some of those points I guess, some of the research we did a number of years ago in the previous CRC really looked at: how do you influence community perceptions in order to get people to take mitigating actions? For example, if all we show in the media are pictures of huge flames with big helicopters and big aeroplanes coming over them, the perception from the community then is, 'This is too big. It doesn't matter what I do; I won't have any influence over the outcome'. So that actually increases the worry in the communities too high. They then say, 'There's no point me doing anything because it is all doomed and I will just insure and walk away', which from a life safety perspective is probably the right outcome but it then leads to an increased loss of houses. So if we go down the route of saying, 'Everybody should evacuate', then the inevitable trade-off there is that we will lose more properties, because the research also shows us the biggest indicator for house survival is the presence of people. So there is a trade-off that we need to look at there.

I think that is a discussion that needs to be had at local levels with local communities about how and what risks are they willing to accept, which is a difficult one because how do you have that conversation and how do you vote for it? So there are still a lot of unknowns, and in order to have that conversation we need very accurate risk information that can be used in those conversations.

**The CHAIR:** Obviously a fair bit of today's conversation has been around bushfire. In a Victorian context, have you or your scientists done a lot in terms of flooding, coastal storm surges, those kinds of things? We have seen some evidence over the last six months there are a number of low-lying coastal settlements and small towns—Lakes Entrance, Port Fairy and the like. Has there been a lot of work done in a Victorian context around coastal storm surge and what that might mean?

**Dr THORNTON:** Yes, there has been research done but it has not been by our organisation in the Victorian context. I think it has been led by some of the coastal councils; they have actually started some of that work. We have conducted research particularly focusing on things like beach erosion and some of those things. There were two study sites that were used in that. One was the Old Bar beach up in New South Wales, which is close to Newcastle, and the areas there that had major storm inundation. Another one was Adelaide's beaches where they are losing sand at large rates on some of those beaches.

One of the challenges we need to understand is the drivers for some of that. We know when we talk about sea level rise that as the sea level rises all of those impacts from storm surge and from storm events are going to be on a much higher base. Some of our infrastructure for drainage of water may go underwater, and that may well reduce its efficiency in getting the water off the land if you like. So we certainly understand the need to do that. It is not something that we have done a lot of work on in the Victorian context.

**Mr FOWLES:** I wanted to ask about hazard reduction burning and Indigenous fire management and what your research is showing about the current strategies and what recommendations you might make to Government in relation to that.

**Dr THORNTON:** I will split the two apart. From the Indigenous burning work, we have been quite heavily involved in some of the activities, particularly in the north of Australia where Indigenous burning and traditional owner burning has really shifted the fire season if you like from late dry season to early dry season. That has reduced the amount of carbon emissions that have come from the late dry season and the dry season, which are then traded in the voluntary carbon market. So in the northern context we know it works quite effectively. It has created a new industry for the Indigenous populations in there, and it has got a whole lot of biodiversity benefits as well. In the southern context we have in the last few years started to work with some of the government programs that are now in place. DELWP has a strong Indigenous traditional burning program at the moment. New South Wales does, the ACT is particularly strong in that as well. So we need to understand some of the benefits that come from that.

Traditionally there is a lot of traditional knowledge that says that this is the right thing to do. We need to now partner with those Indigenous groups to say, 'Can we demonstrably prove that it is the right thing to do?'. I

think part of what we are planning to do at the forum I mentioned in Canberra in a couple of weeks time is to pull apart what does the science tell us as opposed to what the traditional knowledge tell us, because like everything we would like most policy and practice to be based upon evidence and evidence which can help those groups support the activities they want to do.

The broader prescribed burning debate or hazard reduction debate I think is one that comes across. We saw it in the Stretton inquiry into the 1939 fires where there was mention of needing to control fuels on the land. We saw it come through after Ash Wednesday and after the Black Saturday fires, and again you hear it in communities all the time—‘If only we could’—

**Ms GREEN:** And after the alpine fires in the early 2000s.

**Dr THORNTON:** Absolutely, yes. And that goes on and on and on. We, as part of that forum, are looking at some of those I guess counterpoints of where the right place is. Evidentially we know that no burning is the wrong answer and too much burning is the wrong answer, so inconveniently the answer lies somewhere in the middle, and that will depend upon a whole load of factors in terms of the ecosystem we are working in, in terms of the hazard we are trying to reduce—what are the risks? So we need to work through that as well as understanding the future risks from climate change to ecosystems as well.

**Mr FOWLES:** Do you have any recommendations about policy change though?

**Dr THORNTON:** In the inspector-general’s review of prescribed burning in Victoria we came out quite strongly saying that having an arbitrary hectare-based system is probably not the right outcome. Moving to a risk-based approach is a better way to go, because it actually controls the risk around things that you value and puts that linkage in. So we would say that maintaining that is probably a right way to go. At the local level its application is something I do not want to comment on too much, apart from we just need to work through how do we deal with communities and their need to reduce the risk locally.

**The CHAIR:** Can I just ask: in terms of the Indigenous fire practices that you have seen in other states and territories, how might the Victorian Government best support our Indigenous communities to be active in that? Is there a way in which we might structure something that will best facilitate Indigenous cultural burning, which could be done perhaps more often?

**Dr THORNTON:** I am not sure I have an answer to that. I think if we looked across Australia, at least the southern states anyway, one of our reference points would be what DELWP is currently doing in terms of its engagement with the local landholders and traditional owners, and I think to some degree that structure is actually probably one of the best in Australia—without upsetting all the other states. I think that is actually a good approach, and we need to keep working through that. So that may be an answer to reflect back to DELWP.

**Mr FOWLES:** On mental health research, are there any particular insights from the research you have done into police and emergency services? Are there any other areas of mental health that you would make recommendations to the Victorian Government about?

**Dr THORNTON:** As you are probably aware, we partnered with Beyond Blue a couple of years ago and released a report I think last year or late the previous year on the police and emergency services mental health impacts, which really shows that we have an issue we need to deal with in terms of the mental health of our first responders, and the agencies in general, from our understanding, have really bought into that. We are about to—

**Ms GREEN:** Not my experience.

**Dr THORNTON:** Okay.

**Ms GREEN:** I think some agencies have, but I think CFA with their volunteers have got a long way to go.

**Dr THORNTON:** What we are just about to contract as well is a piece of research to look at what is best practice, particularly for our young volunteers as they come in, because there was one of the findings that

basically showed that the mental health deteriorates the longer you are in an organisation. So if we can get that right at the front end we can stop that early. So that is in the mental health area for first responders.

The thing that we tend to not dwell on as much I think is the mental health of communities recovering from fires. Melbourne Uni had a long-running research project called Beyond Bushfires, which followed the communities and their recovery from Black Saturday. It is worth taking a look at some of that work, because that did address the way in which the mental health of communities progresses.

We have more recently started a project in recovery looking at mental health or some of the aspects of mental health around recovery as well. So that is important to understand, because we are still seeing the impacts of the shocks and strains that go onto families and communities 10 years after Black Saturday, so we do need to take that really seriously.

Then there are issues around smoke, for example, and the impact that smoke can have on people's anxiety in the community. Where do you go to escape from the smoke events that we saw in Melbourne, in Canberra and in Sydney this year, and indeed in Sydney we saw that in May when they were doing prescribed burning as well. So there are those sorts of challenges I think we have: how do we support communities?

**Ms GREEN:** We heard that with our evidence—beyond that, as well, the stresses of constant evacuation. We had a round table with the north-eastern local governments. They said that that really took a toll and then people just stopped evacuating after the third or fourth time. So that is something that we are all going to have to think about.

I was going to change topics again. In the last couple of days there has been quite a bit of discussion in the media around microgrids and their application. We heard evidence when we were in Yackandandah. So, for example, there is a community-run fire station that has got their own energy source, and so during the recent Baranduda fire they were able to continue pumping fuel for the fire trucks. But one of the firefighters from Yackandandah said he was in Corryong, and, for example, their fuel station there did not have the immediate access and blew up four generators in one night. And you sort of think, 'Gee, if they hadn't had that fifth generator, the town mightn't be there'.

We also heard from the alternative energy experts in Yackandandah that they have got big restrictions through the national energy market about being able to continue to run those microgrids at a time of their choosing or during a disaster. The actual national grid mitigates against that. Would you have any recommendations or any ideas on what we should be recommending so that those communities would be able to operate their microgrids and therefore protect during what could be fires or floods, all sorts of things.

**Dr THORNTON:** A very, very well put question—and I totally agree with the challenge. No, I do not have any comments, because we have not done any work in that space. We have been working with Energy Networks Australia, with some of their members, to look at the risk to infrastructure—to and from power infrastructure. But in terms of a point of reference, it is worth looking to South Australia when they went through their black event to see the—

**Ms GREEN:** Their which event, sorry?

**Dr THORNTON:** The black event, when the whole state went out—about the rolling impact and the cascading problems of losing power. I mean it comes back to, when we talk about community resilience, what do you do if you cannot use any electronic transactions, because I guarantee most people probably do not have more than 20 bucks, 50 bucks, in cash in their wallets at the moment. So there are all of those types of things.

So there are lessons to be learned I think from the South Australian event, but also we need to look more generally at the interaction between some of those cascading events; if you lose one piece of critical infrastructure, what does it do to others? I know EMV had been looking at that in the past. We did a fairly extensive piece of work around risk ownership and who owns risk, particularly in critical infrastructure, because quite often the beneficiaries of reducing risk are not the people who are expected to pay for it. So it may be that if you make electricity more robust, then it is the water sector that may benefit from it—or the community. So that becomes difficult because there is a common adage that if a risk is not owned it largely is not being managed.

**The CHAIR:** Just one final question from me: I think during the Black Saturday event the evidence that we have heard is that over that period there were actually likely to have been more people who lost their lives through heat-related stress and not a connection to bushfire. And it seems to me that in a local community context the principal emergency management document is a document usually facilitated by the local government area in collaboration with the local agencies—the CFA, the SES, the police, ambulance and so on and so forth. And that has been a structure that we have had in place in Victoria for certainly the last 20 years but probably a lot longer than that. How might State Government best support those plans to recognise the challenges of climate change? And that could be longer periods of extreme weather, it could be flood, it could be fire—all of the likely things. Is State Government supporting local government in the preparation of those plans and engagement with the community to a sufficient extent?

**Dr THORNTON:** I cannot comment on whether it is sufficient, but I think it is really important that State Government supports the local decision-makers, because all indications from our scientists are that heatwaves will become more common and more intense. Around Black Saturday it was always telling to say, ‘Well, we think more people died from heatwave than from the fires themselves’, because it provides an indicator that we are not actually measuring that. One of the earlier pieces of work we did in this centre was to actually look at the causes of fatalities, if you like, across all of the hazard types. What that showed us was that heatwave by far is the biggest killer of people of any natural hazard, so we do need to be prepared for that. We need to understand what that means at the local levels in terms of shade, in terms of what we do with vulnerable communities.

**Ms GREEN:** Our local funeral directors say that. I reckon they are the best ones to ask.

**Dr THORNTON:** And the other sleeper now that is coming in that area is the smoke impacts from these events. We do not have a good handle on what the impact is from those.

**The CHAIR:** And that could be asthma and other respiratory illnesses.

**Dr THORNTON:** Absolutely. So we need to understand that better. I think the State Government’s role, if you like, is about how it provides the data and the services that are required by the local people and local governments, if you like, to be able to prepare those emergency management plans, particularly factoring demographic change and climate change into what the future risks look like, so that we are not building the risks of tomorrow today.

**The CHAIR:** This is my absolute final point: should Government be informing local groups that are putting these emergency management plans together to be conscious of dust storms, heatwaves, smoke events and the like? We see it in the Australian environment—

**Ms GREEN:** Doesn’t EMV do that? I think EMV does that, doesn’t it?

**The CHAIR:** I am not sure. We see these things from time to time, and it just occurs to me we are going to see a lot more of them a lot more often, and I suspect some of the local government areas have never really thought about some of that stuff. Should we consider auditing what goes into these emergency management plans, so that plans should have these things covered off, plus whatever local considerations are appropriate? Should we be thinking about that?

**Dr THORNTON:** My understanding is that EMV does that already, so I think that is probably a question to take back to EMV. But certainly there is a need to ensure that local communities are informed about the risks that they as a local community will encounter. We know that communities in the Mallee will have very different risk profiles and different types of risks to communities in south-east Gippsland, for example. So we need to make sure that risk plans and risk emergency management plans are fit for purpose.

**Ms GREEN:** I just have one question, and I reckon it will only get a one-, two- or three-word answer. When the Federal Government were putting together their royal commission terms of reference, did they refer to the expertise of the CRC?

**Dr THORNTON:** Not in development of those terms of reference.

**Ms GREEN:** And also I would like to say I think that we should be having a recommendation from this Committee that we ask the Victorian Government to add the issue of your funding to the COAG and MINCO agenda.

**The CHAIR:** Terrific. Thank you so much for your evidence.

**Dr THORNTON:** Thank you.

**Witness withdrew.**