

TRANSCRIPT

LEGISLATIVE COUNCIL ENVIRONMENT AND PLANNING COMMITTEE

Inquiry into the Health Impacts of Air Pollution in Victoria

Melbourne—Tuesday, 29 June 2021

(via videoconference)

MEMBERS

Ms Sonja Terpstra—Chair

Mr Clifford Hayes—Deputy Chair

Dr Matthew Bach

Ms Melina Bath

Dr Catherine Cumming

Mr Stuart Grimley

Mr Andy Meddick

Mr Cesar Melhem

Dr Samantha Ratnam

Ms Nina Taylor

PARTICIPATING MEMBERS

Ms Georgie Crozier

Mr David Davis

Dr Tien Kieu

Mrs Beverley McArthur

Mr Tim Quilty

WITNESSES

Dr Dorothy L Robinson, Australian Air Quality Group;

Ms Arabella Daniel, Clean Air Communities;

Ms Liz Poole, Communities for Clean Air Network; and

Ms Kate Forster.

The CHAIR: I declare open the Legislative Council Environment and Planning Committee's public hearing for the Inquiry into the Health Impacts of Air Pollution in Victoria. Please ensure that mobile phones have been switched to silent and that background noise is minimised. And could I please ask all people appearing via Zoom to ensure that your microphone is on mute when you are not speaking.

I would like to begin this hearing by respectfully acknowledging the Aboriginal peoples, the traditional custodians of the various lands we are gathered on today, and pay my respects to their ancestors, elders and families. I particularly welcome any elders or community members who are here today to impart their knowledge of this issue to the committee or who are watching the broadcast of these proceedings. I would also like to take the opportunity to welcome any members of the public who may be watching these proceedings via the live broadcast as well.

I will introduce committee members to you at this time. I am Sonja Terpstra. I am the Chair of the Environment and Planning Committee. Also joining me via Zoom are Dr Samantha Ratnam, Dr Catherine Cumming and Mr Cesar Melhem.

All evidence that is taken today is protected by parliamentary privilege as provided by the *Constitution Act 1975* and further subject to the provisions of the Legislative Council standing orders. Therefore the information you provide during the hearing is protected by law. You are protected against any action for what you say during this hearing, but if you go elsewhere and repeat the same things, those comments may not be protected by this privilege. Any deliberately false evidence or misleading of the committee may be considered a contempt of Parliament.

All evidence is being recorded, and you will be provided with a proof version of the transcript following the hearing. Transcripts will ultimately be made public and posted on the committee's website.

Now what I will do is ask each of you—and I will invite you to in a moment—to state your name and the organisation you are appearing on behalf of. Dr Robinson, can I start with you, please—just your name and the organisation you are appearing on behalf of.

Dr ROBINSON: Dr Dorothy Robinson from the Australian Air Quality Group.

The CHAIR: Thank you. Arabella.

Ms DANIEL: Arabella Daniel from Clean Air Communities.

The CHAIR: Great. Thank you. Kate.

Ms FORSTER: Kate Forster. I am speaking as an individual, but I am also a community advocate that has liaised with the other people on the panel.

The CHAIR: Great. Thank you. And who else have we got? I think that is it, is it? Sorry, Liz.

Ms POOLE: Yes. I am Liz Poole, speaking on behalf of Communities for Clean Air Network.

The CHAIR: Great. Thanks so much for that. All right, well, with that I will ask you all to make your opening submission. I will get each of you to make about a 5-minute opening spiel, and then that way it will leave plenty of time for us. Perhaps, Dr Robinson, we might start with you—so about 5 minutes opening—and we will go from there.

Visual presentation.

Dr ROBINSON: This presentation focuses on wood heater pollution, because that is the low-hanging fruit. Current policy has failed over the past 25 years because it has been based on an untrue claim that new heaters are a lot cleaner than older models, and the reality is shown in the pictures. All except one of the flues in these pictures are from wood heater installations that satisfied the Australian standard required until September 2019, and the real question is: why do neighbours, who often do not know about the installations beforehand, have to put up with this level of emissions? This problem is reflected in the New South Wales clean air strategy data that shows why we need urgent action. Only 4.4 per cent of Sydney households use wood as their main heating, but they contribute an estimated 46 per cent of population-weighted exposure to PM2.5—the pollutant with the largest health impacts across New South Wales.

It is a similar story in the wider Newcastle-Sydney-Wollongong area, where wood heaters contribute 23 per cent of emissions, but because the smoke is emitted in residential areas where people live and spend time with their families that translates into 42 per cent of population-weighted exposure; in other words, 42 per cent of \$3.3 billion health costs—over \$13 000 per heater per year. We do not quite know the population exposure for Melbourne, but we do know that 32 per cent of human-made emissions come from solid fuel combustion, suggesting—if we take the 23 per cent in Sydney as a guide—that the problem could be even worse in Melbourne.

And the sad fact is that new heaters are not much cleaner than old models, and this is because the current test for new heaters bears little or no relationship to real-life emissions. As I explain in the handout, attempts a decade and a half ago to develop a test more closely related to real-life emissions were abandoned in 2007 after the wood heating industry objected to a stricter limit on the existing test as an interim measure while the new test was being developed. So with real-life emissions eight times worse than the lab tests which they are required to satisfy, perhaps we should not be surprised by EPA Victoria's evidence to this inquiry that PM2.5 emissions and pollution are increasing and we have more exceedances of the daily PM2.5 standard, and wood heaters are coping most of the blame.

And this failure is really demonstrated by what has happened in New Zealand, because they are much more ahead of us. They introduced stricter standards in 2005 than we currently have in Australia today, and despite this, the *Growing up in New Zealand* study found that just one additional wood heater per hectare—that is 100 metres by 100 metres—increased by 7 per cent the risk that a child under three would need hospital admission for all conditions except accidental injury. So we desperately need policies that protect public health and the rights of clean air. We would not accept a vaccine that was not tested in real-life circumstances and was found to be eight times more dangerous than first thought. We expect vehicle airbags to be recalled rather than risk any deaths, so why don't we apply the same standards to wood heaters that cause an estimated 100 premature deaths a year just in the Sydney Metropolitan region?

People cannot make informed choices without relevant information; for example, that wood heater and cigarette smoke contain the same and very similar chemicals. Known toxins include polycyclic aromatic hydrocarbons, some of which are listed as human carcinogens. And using a wood stove for a single day emits as many PAHs—that is, polycyclic aromatic hydrocarbons—as in the smoke from over half a million cigarettes. And there are many other health impacts of wood smoke than the PM2.5 and the PAH it contains at levels of exposure that can be produced by living near to a wood heater: low birth weight, genetic damage in babies, increased risk of anxiety and attention deficit, reduced IQ when children start school, increased risk of asthma and stunted lung growth—all of which many of you heard yesterday—cancers, strokes, heart attacks, lung diseases and dementia, and of course we now have COVID-19. Research in the past months shows a big increase in the risk of COVID-19 with PM2.5 pollution. With wood heaters contributing disproportionately to PM2.5 pollution, they are also contributing disproportionately to the risk of COVID-19.

The CHAIR: You have 1 minute left, Dr Robinson.

Dr ROBINSON: Yes. So let us start informing people about the problems and talking about clean environment alternatives. And do not fall for claims that reductions in emissions on a test that does not measure real-life emissions will have a benefit for public health. You heard from Associate Professor Fay Johnston yesterday about the things that work—in other words, removing heaters—and the things that do not

work. Education, for example, does not work, because it is very expensive and has no real, lasting benefit for public health.

This is the people's clean air plan and the public recommendations, which I assume other people in the panel will talk about: develop an effective education program to provide factual information on the health effects of wood smoke; couple the education program with measures to phase out existing heaters; for example, by requiring them to be removed when houses are sold—this costs the government nothing and allows existing wood heater users to continue using them as long as they live in the house; and as you have talked about many times, this process could be sped up by providing subsidies to replace existing wood heaters with alternatives, as we already know happens to people on low incomes with the Victorian government's energy upgrades program; and because new heaters just do not live up to the standards they are supposed to, do not allow new ones to be installed. And that is really something that Asthma Australia's representative survey of 25 000 Australian showed. Most Australians would support regulations to phase out woodfired heaters for better, healthier alternatives. So let us go with it. You are the people who can make this policy happen and clean up the air for everybody. Thank you.

The CHAIR: Great. Thank you. All right. Anyone have a preference for who wants to go next? I do not mind. Arabella? Okay. Great. Arabella, over to you.

Ms DANIEL: Thanks so much. I would like to thank the committee for this very important opportunity to speak on behalf of the community regarding the health impacts of air pollution, with special gratitude to Dr Cumming for initiating this vital inquiry. Our Clean Air Communities Twitter account profile states:

Breathing is a basic biological imperative for life—and so it is a basic right to have Clean Air, everywhere, all the time

Coal-fired power, industry and vehicle pollution emissions rightly receive global attention from environmental activists, politicians, health authorities and the media, and so there is an end in sight to these emissions thanks to regulations and the transition to clean renewables and electrification, but what consistently gets ignored by these groups is the one single source of air pollution that makes up the highest contribution to PM2.5 wherever data is collected: it is residential wood-smoke pollution. This pollution is of greatest concern because it is emitted where people live, work and children play - in our homes and backyards. These high-emission concentrations happen where they cause the most harm.

As Dr Robinson showed us, wood heaters contribute to a third of Melbourne's PM2.5. That is the highest human source of emissions. But the most staggering EPA Victoria data on wood heater emissions is the very conservative estimate of PM2.5 for all of Victoria. Just 10 per cent of homes that use wood heaters for heating emit a staggering 9 million kilograms of PM2.5 per year. I implore the committee to carry this fact with you throughout this inquiry process, because you are not likely to hear it from anyone else. Ten per cent of households with wood heaters emit 9 million kilograms of PM2.5. To give a sense of the scale, the three Victorian power stations, according to the latest National Pollutant Inventory data, emit 1.8 million kilograms of PM2.5. So wood heaters alone emit over four times more toxic PM2.5 than all our coal-fired power stations combined, yet this figure only refers to emissions from closed-design, slow-combustion wood heaters. What is not quantified and completely unaccounted for are the more polluting sources, such as open fireplaces and the myriad and varied outdoor open fires: lit in fire pits, chimineas, braziers, pizza ovens, food smokers and wood-fired slow cookers, all operating at far lower efficiency and therefore emitting more pollutants, causing even greater harm.

These emissions occur at ground level in close proximity to the users and their neighbours. People with private air monitors, like myself, living next door to fire pits report concentrations in the hundreds of micrograms per cubic metre. These are the sort of pollution levels we were seeing in the Black Summer bushfires, yet this is what residents endure most days of the year. What is also not accounted for is the cost to life of living next door to these sources: the silent, daily suffering and anguish of not being able to breathe clean air inside and outside your home, being unable to enjoy one's garden, hang washing outside, exercise and walk the neighbourhoods, throw open doors and windows for fresh air and, worst of all, being unable to prevent this pollution, because no-one will help.

People are living in daily distress. It ruins neighbourhood relations and people even resort to moving house only to find the same problems plaguing daily life. The EPA estimates that wood heaters will cost the Victorian health system over \$8 billion over the next 10 years, but this does not include the unquantified mental health

impacts, the lost hours of productivity, the ongoing costs of short- and long-term illness. The \$8 billion is an underestimate also, as it assumed a decline in wood burning when in fact the past few years have seen a marked increase in wood burning, leading to media reports of doubling of demand for firewood, and now this year we had a national firewood shortage. Yet we have no idea what the emissions data for this period is as we are still waiting for EPA Victoria to release the 2016 air pollutant inventory.

The CHAIR: You have a minute left, Arabella.

Ms DANIEL: Thank you. However, Dr Paul Torre, the principal air quality specialist at the EPA, has kindly provided us with some concerning information that backs these media reports. He said:

EPA pollution reports show that during 2020 the number of winter smoke pollution reports were around 2 to 4 times higher than compared to the number of reports in 2017, 2018 and 2019.

And this was all happening during a global respiratory pandemic, when one should rightly expect a moratorium on any non-essential solid fuel combustion. It has been eight years since the WHO declared PM2.5 a class 1 carcinogen, eight years since the Senate inquiry into health impacts of air quality in Australia, which recommended strong action, including wood heater bans, and as far as we know not one Victorian council has adopted any one of their recommendations. The only state level action we have seen is tighter efficiency standards, which only apply to new wood heaters, and we now know this policy has failed to prevent further significant air pollution. A few years ago the WHO stated air pollution to be a public health emergency. I ask the committee to view this subject with the same sense of urgency and gravity. Our neighbourhoods are exposed to high-level concentrations of PM2.5 and hundreds of other toxic emissions, and it is all preventable.

I will just finish with this statement from the CEO of the Lung Foundation Australia, Mark Brooke. Just 10 days ago he called for government and others to take actions for healthier choices by moving away from wood-fired burning devices, both indoors and outdoors. Thank you so much.

The CHAIR: Thank you. Kate or Liz, either one of you?

Ms FORSTER: Yes, I will go next. And I am 100 per cent in support of what Arabella and Dorothy have spoken about. So I am going to speak from a bit of a personal perspective. I moved to Emerald, in the Dandenong Ranges, over 30 years ago for a healthy lifestyle. I had a wood stove for heating and followed the CFA recommendations for burning off for over 25 years. I thought I was doing the right thing, as many environmentally concerned people still do when they are burning wood and vegetation.

As an early childhood educator who worked at the Royal Children's Hospital, the daughter of a doctor and nurse who completed a graduate diploma in health education, I was very well informed about human development and health. As a consultant and resource person for early childhood programs for children with additional needs, I was personally committed to understanding current research and information on health and wellbeing. Whilst working at the Royal Children's Hospital in the 1980s, where I had been required to sit next to chain-smoking colleagues in the office, we gained the opportunity to work in a smoke-free office, and smoking in the lift foyers on each floor was banned. Why, when all the evidence shows very similar health impacts from other biomass smoke, is our community so unaware and our community information so out of date; our regulators so permissive, disengaged or powerless; and those we entrust to inform us so uninformative about the harms of invisible smoke?

Why in 2021 aren't we treating wood and other biomass smoke like the second- and third-hand toxic smoke it is? The focus on tobacco, the reminders not to burn toxic substances such as plastic, the lack of information on the toxicity of wood smoke blinded me to the truth that all smoke is toxic and harmful to health. Our council regulations on smoke continue to mislead our community. EPA Victoria's cute Larry the particle needed to be stomped on and replaced. I felt I had to step in, and up.

There is shocking wilful blindness to how harmful biomass smoke is by my two local governments. They create local laws on open-air burning, both extending this to 24 hours in recent years despite times previously being limited to reduce smoke ending up around homes as the air cooled in the late afternoon. For over four years my local council, Cardinia, has not acted on my requests to provide information on the health impacts of smoke in their community newsletter, where they advise when burning off is allowed. There is an exclusive focus on the threats of bushfire, which are real, but not the significant health- and life-harming threats of biomass smoke. Now my local council will not even attempt to regulate smoke after 5.00 pm or on weekends at

all, when it is most likely, referring me on their out-of-hours service to CFA volunteers. This is absolutely shameful.

We experience a huge gap in community information on wood smoke that misleads our community and takes away informed choice. Without current information, how is choice really a choice? Current information and advice is non-existent or out of date and does not represent the current science. That includes EPA Victoria, local councils, GPs and my respiratory specialist. The focus on visible smoke as the only concern and the lack of reference to cumulative harms on everyone are highly misleading.

The CHAIR: A couple of minutes left, Kate.

Ms FORSTER: Most burning of wood and vegetation is now cultural, not essential, and I am happy to talk further on that with the committee. Poor people are likely most vulnerable, not a reason to avoid action. We have many alternatives, including jumpers, better-sealed and insulated homes, heat pumps, mulching, hugelkultur and even allowing leaves to rot down by summer, for goodness sake. Why aren't we protecting our children from life-impairing health and developmental problems? Prevention is our best and cheapest and most effective tool. Why don't we use it?

I will just explain to the committee too, my committee submission included an attachment of slides that were only put on the hearing website at the end of last week—unfortunately that was an omission that was made—and it contains slides from a webinar Arabella Daniel and I are developing to fill the gap in truth-telling on wood-smoke and biomass air pollution. I hope panel members might take the opportunity to have a look at that information.

The CHAIR: Great. Thanks very much, Kate. All right, Liz, I will hand over to you.

Ms POOLE: Can you all hear me now?

The CHAIR: Yes. Fabulous. Thank you.

Ms POOLE: Thank you for the opportunity to present. I am part of the network called Communities for Clean Air Network. Like Kate, I am going to tell a bit of a personal story as well. I live in an inner-city suburb of Melbourne. I personally have neighbours with wood heaters, and we have tried for the last 16 years to address the issue. Despite using every available avenue, we are stuck in the same situation we were 16 years ago. We rarely open windows, we cannot use our backyard, we run air filters all winter and we regularly smell smoke in our house.

Like most people, and like Kate was talking about, I was not aware that wood smoke was harmful. When our oldest child was six months old she began to get a range of respiratory conditions. After about the 20th GP visit our GP asked if there might be some environmental issue involved. That was when we started looking into the issue of wood smoke. I became very concerned once I learned that wood smoke is implicated in poor respiratory health of children. This began a very stressful and long fight for us to get something done about this. The details of this are in my personal submission. Through my efforts to address the issue I was contacted by many people in similar situations, and in all of those situations there were very common themes. These are reflected in the case studies that we included in the submission. We have all tried to get assistance with wood smoke pollution, but there are no effective measures from council, EPA or government, and this has had significant personal cost to all of us. The education delivered toward heater owners by council and the EPA with its focus on correct operation is failing Victorians in that it does not inform wood heater owners of the significant health impacts to themselves and their neighbours.

Wood heaters in my view are about economics, but not in the way that people think. I recently bumped into the health minister, Martin Foley, when I was at a clean air rally, and on the issue of wood heaters he told me words to the effect that 'low-income people need to be able to heat their home'. This narrative—that removing wood heaters would disadvantage low-income people—is widely promoted by the wood heating industry. Meanwhile it is low-income people who are paying the highest price for wood heating—with their health. This is because people on low incomes are more likely to have poorly sealed homes in areas of high housing density, surrounded by people using wood heaters day in, day out. My family and I are protected from cigarette smoke in restaurants, shops, public buildings, playgrounds and even in outside dining areas. But in the only place we have no other option than to be—that is, in our home—we regularly breathe in wood smoke, not occasionally

but 24/7, and not just in the cooler months. Our neighbours can light up in summer too. There are no restrictions.

The Victorian government, as you may know, has recently provided funding of \$335 million to upgrade 250 000 low-income homes around Victoria with more efficient heating, which consists of a \$1000 rebate. DELWP, I am sure, will point to this initiative as evidence that they are addressing the issue; however, without a targeted strategy this initiative will have minimal uptake from wood heater owners. This is because they are a difficult group to access and engage. Many wood heater owners are very attached to their wood heater, and burning wood is often part of their identity and their pastime. They are unlikely to agree to change their heating because of a rebate. Information being online and only in English will also make it difficult to reach these groups.

The CHAIR: Liz, you have about a minute left.

Ms POOLE: Thank you. This also will not be relevant to the middle- and high-income groups who have recently installed their double wood burners for \$3000 apiece, which have been sold to them as clean-burning, low-emission, latest technology lifestyle products. DELWP and the EPA also like to make it sound like they are addressing the issue. They will note their home heating upgrades program, their latest social media campaign to educate people about correct use and how they respond to complaints of wood heater non-compliance, but what they will not be able to tell you is how many of these programs actually reduce localised air pollution from wood heating. Please do not be bamboozled by their spin. Ask DELWP and the EPA for a target and then ask them for the evidence for that target—how will they measure this?

We have restrictions on noise pollution in local areas. You cannot leave rubbish unattended on your nature strip. But there are no restrictions on creating harmful particle pollution 24/7. Both of my neighbours have been provided with instruction in correct operation on a number of occasions. This has improved to a small degree the levels of smoke, but as they use them 24/7 we are subject to harmful particle pollution every day of the week. I note that the Australian Home Heating Association says that all we need is to provide wider education in correct operation. I wonder how they will measure the success of this. Will they provide the funds and the resources to monitor the estimated over 100 000 wood heaters in Victoria?

The CHAIR: Liz, have you got much to go? You are out of time there.

Ms POOLE: Okay, thank you. I will just finish by saying: to protect public health I believe that we need a phase-out of wood heaters supported with education on the health impacts, and rebates. Thank you.

The CHAIR: Great. Thanks so much to all of you for those opening remarks. I know it is tricky to squeeze it all into 5 minutes each, but we have got an hour and there are four of you on this panel. I will hand over to committee members for questions now. Dr Cumming, I will start with you.

Dr CUMMING: Thank you all for your presentation. Like you, I am an environmentalist, and I was absolutely unaware of the dangers of wood smoke until I actually did the research for this inquiry to get it up. I too, like many people in Victoria, would culturally think that when sitting around an open fire when you are camping you are okay because you are in the great outdoors. And I am also a person who enjoys an open fire when camping or the ambience of a wood fire. I too was on council for 20-plus years, and I was not aware of the recommendations around wood fires. I will let you all know that when it comes to councils, councils actually only get the opportunity to change their local laws every 10 years. So if this is something that you believe all councils should have in their local laws and it should be from the bottom up—federal legislation, state legislation and local laws—there needs to be something here in this inquiry to make sure that we are directing all councils to be able to do that, seeing that local governments are an arm of the state and they will have to do those implementations.

One of the things I find interesting—and I am not quite sure; you could expand upon my research—when it came to wood fires is we actually have an uptake in people who have money installing wood fires. It is not so much for the poor and the vulnerable, getting free wood and those kinds of things. Actually red gum is very expensive, it is expensive to import from New South Wales and we have more wood fires in the eastern suburbs than we actually do in the western suburbs.

The other point that you actually raised, and this is another thing I have heard and that I would like more from you guys on by way of information, is that obviously in regional Victoria when they do not have access to gas—you know what I mean; they have to import gas in, they do not have electricity and they are relying on solar—they rely on wood as a backup. I would love it if you have got any further information about that because that is one of the other pushbacks that I hear. I guess my question to you is: rather than phasing out—as you have just said, all smoke is dangerous—should we make sure that we have very short time frames and that we act immediately on this issue and this topic?

The CHAIR: Go ahead, Dr Robinson.

Dr ROBINSON: Well, I would say that on rural properties, where you do not have electricity and you are relying on solar, you are really out in the back of beyond and you are not really harming any neighbours because you do not have any, it does not really matter. The only people who are going to be harmed are the people who live on the property, and it is up to them to make an informed choice. For gas is a different matter, because just about anywhere you go in Australia gas is now two or three times the cost of an efficient reverse-cycle heater. So it does not matter. The cheapest form of heating just about anywhere in Australia now is the good old reverse cycle. Many people already have one sitting on their wall. If you do not, there are some really, really nice models—the floor-mounted models, which I showed you in my presentation—which will save you a lot of money and which have got lower running costs than buying firewood. They are very clean and convenient, and they are also environmentally friendly.

The CHAIR: All right. Thank you. Arabella?

Ms DANIEL: Dr Cumming, you mentioned councils. In my recommendations, which I hope you all read, one of them is to transfer this responsibility to the EPA. This really needs to be addressed at a state and even federal level, because no-one should be left out. I think the CEO of the Banyule council put it beautifully in her submission. You know, you cannot have a scenario when one council acts and then across the road, the border of the next council, you have no action; it does not work. We need this to be a statewide implementation.

We would love to ask for a ban, but it is not going to happen. We need an education program so that people come on board and understand the health hazards. We have not had any information. If we had included biomass smoke when we did tobacco campaigns decades ago, we would be in a very different position today. We have not seen any of that. So though we would love an overnight ban, it has to be a phase-out, with education, to make it less painful for the community, for which this will be a shock to the system; it absolutely will, we are not saying it will be easy.

Dr CUMMING: Thank you.

The CHAIR: Thanks. Kate?

Ms FORSTER: Yes. Thank you, Catherine. There seems to be some confusion around legal requirements. In fact my local council in less than 10 years, they have told me, are going to be reviewing the open air local law, and they are actually saying it is going to come to council now at the next meeting—that is in July. I have called on them to wait until the findings of this inquiry become open to the community so that the community and councillors and staff can reflect on the findings, but it is not clear to me that that is going to happen.

Yarra Ranges council, which is just across the border from me, also has reviews in less than a 10-year period. There is actually nothing stopping them acting on new information or information that they should have considered previously and have not.

The other issue is—we have inquired with the EPA and are still waiting on a response on this—with regard to who is legally responsible for everything. It is just not quite clear. It has not been made quite clear to the community what power local government has. Then of course there is the question of what local government, from a political perspective, will choose to do—and that is another issue again. I think that is all that I wanted to say at this stage. Thank you.

The CHAIR: Liz, is there anything you wanted to add to that?

Ms POOLE: Yes. I will just add to everybody else's points just about access to electricity and what Dorothy was saying. You know, if you are living in a town, even if it is a rural town, you have access to electricity. It is only those people out in very remote properties that would not have that.

The other point I would say—what Arabella was talking about—is that at the moment the EPA does not have any line of sight into what happens at the local level, and have no oversight of how local councils deal with issues around wood-smoke pollution. They are not equipped, they are not resourced. I think that they are just not a good level of government to address this. I think it needs to be statewide and coordinated. It needs to be something that is consistent across the state, and if it is just left up to councils, it will not be consistent.

The CHAIR: Okay, great. Thanks, Liz. I might just ask a question. This is a question to all four of you, but it is something that came from Dr Robinson's submission. You proposed, Dr Robinson, in your submission that there should be a gradual phase-out of existing heaters, and you say that at the point where a house is sold it should be required that the heater be removed. I am interested in that idea. I would like to hear from all of you, eventually, about if you support that idea. But also: are you aware if that happens in any other jurisdictions, and if so, which ones? But then also, if that was to happen, who would pay for it? Would the owner be required to pay for it? There are a couple of questions there. Perhaps, Dr Robinson, we can start with you.

Dr ROBINSON: Well, I do not know of anywhere in Australia where this is happening, and they are talking about it overseas now because a lot of other countries are having the same problem, but the idea first came from a study commissioned by the New South Wales EPA, who estimated that wood heater pollution was an \$8 million health problem, and simply not allowing new heaters and requiring existing ones to be phased out when houses were sold would reduce the health costs by 75 per cent. So it was a big improvement because most houses are sold every six, seven or eight years, and it really does create a big relief to the people living nearby. My argument would be really, when houses are sold most people spend thousands on upgrading the houses anyway so why not just encourage them to spend it on upgrading the heating systems well? Rather than a new, fancy kitchen, let us have better health instead. It would be much better for all concerned.

The CHAIR: Sure. So it should be the vendor that bears the cost of removing it, or the purchaser?

Dr ROBINSON: Well, it could be either. I mean, effectively it will affect the price so either the vendor pays for it and then it is all sorted out, or the purchaser could actually do it as part of the occupation certificate.

The CHAIR: Okay, great. Thanks. Arabella?

Ms DANIEL: I would like to suggest that this is something that the Victorian government could take on as a subsidised activity, because actually the quantified cost of every wood heater is \$6900 in Melbourne. That is a huge health cost, and that is only one small component of the myriad health costs. We know that asthma alone costs billions of dollars a year; mental health costs billions of dollars a year. If we remove this residential wood smoke pollution, we will be saving unquantified billions of dollars. The cost at this up-front level of subsidising and removing this source of pollution will have huge ramifications for our society and the benefits and savings are just innumerable, so I would even encourage the government to—

The CHAIR: Are you saying there is actually a specific cost saving to the health system?

Ms DANIEL: Yes.

The CHAIR: What you are saying is that the cost of maybe pulling something out like that will be outweighed by the costs saved in all those other areas—

Ms DANIEL: Absolutely. It could revolutionise our society with the improvements in health and quality of life. If I could only show you the messages that I receive from individuals—even just this morning a 70-year-old woman texted me, and I actually asked her if I could read out her comment. Just the daily anguish, impacts, distress, people not being able to get out of bed because they have been sickened overnight by the smoke infiltration into their homes—it is an awful, awful way to live.

The CHAIR: I understand. That is why it was a question around whether you all support that idea and just who would pay and that sort of thing. I am just interested in exploring that idea and where it perhaps came from. Liz, did you want to say something?

Ms POOLE: No, I just agree with Arabella, I think, that there is a big health saving.

The CHAIR: It is worthwhile, yes. Kate?

Ms FORSTER: We have nowhere near quantified—as Clare Walter I believe yesterday pointed out, really when we are talking about these figures of costs, we are looking at the tiny amount comparatively with regard to death and hospitalisation. We are not talking about all of these massive costs across development, dementia—the list just goes on and on, and every year it grows. Cancer, some kidney disease, we are looking at eye disease now—it is just absolutely massive, and the ramifications roll on.

I used to take wood from my place, where there is quite a bit of fallen deadwood, to my friends. They both ended up in old age—they have both passed away now—one with diabetes. One had a stroke and then that rolled into dementia. There is no way in retrospect that if, unwittingly, at all I contributed and that smoke contributed to those illnesses—and all of those years I remember of them enjoying and sitting by their wood stove. None of that at all justifies or is worth the absolute suffering I saw for them in the last years of their lives—absolutely not

We have got very, very few doctors talking to their patients about this. I have got country friends—one couple off-grid. One has developed heart problems since they have lived there. That has been serious and extraordinarily stressful to them. Now, if this smoke has contributed, why would we want that to happen? And I think now with building technology we have got an amazing capacity to reduce to a very small amount the heat needed to keep a home warm. We have also got issues in summer with heat stress. So a reverse-cycle air conditioner running off these incredibly efficient heat pumps that are snatching energy from the air even when it is frosty outside, not only will they heat but they will also cool and protect people during the increasingly hot summers we are experiencing. So if we look at a healthy-homes-for-all approach, there are just so many simple solutions if we move from just focusing on one thing and stop and look at what are the benefits of moving to the many solutions we are so fortunate to have now.

The CHAIR: I understand. Look, we have got 15 minutes to go, and I know Dr Ratnam will have some questions. I might just have to pull you all up there and then throw to Dr Ratnam, I am sorry. It is challenging, managing this in an hour. But anyway, over to you, Dr Ratnam.

Dr RATNAM: Thank you, Chair. Thank you, everyone, for your submissions today and the incredible evidence you have provided through your written submissions, which I think are really important for this committee in terms of the depth that you have gone to to illustrate the nature of the problem. It is well overdue that this is recognised, and I also want to say I absolutely hear the frustration after years and years and years of knocking on politicians' doors and submitting to inquiries and us still kind of circling around the same issues. So I just want to acknowledge that—it must be very, very frustrating—but also the evidence you provided in your submissions about things that have worked and things that have completely failed. I think that is really important for us to heed and reflect on in our recommendations and our findings.

I wanted to follow up on a couple of things you all raised. Kate, I think you mentioned in your submission the draft Victorian cleaner air strategy. This has been brought up by submitters before, particularly in their written submissions. I believe we are still waiting for that despite it being talked about in 2018, and you all have made a submission to that. Can you talk us through—and it is open to anyone as well—where you think this is up to? Have you all heard anything about why this has stalled, where it is up to and what happens next? Because it sounds like this is a big stumbling block to actually getting [Zoom dropout].

Ms FORSTER: Yes. Thanks, Samantha. The Victorian air quality strategy was meant to be released a long time ago. There does not seem to have been any hurry, and that is really concerning to us. On the other hand, my request—written and verbal request—to their team has been, 'Please, allow this inquiry to inform'. I know they have been accepting information in an ongoing way, but nonetheless it seems to me—

Because I heard on the grapevine that they were going to be releasing it before this inquiry had finished, and I find that quite disturbing, actually. It seems to me that the community has put in a lot of effort. The professional community has put in a lot of effort with submissions to this inquiry, and we should be reaping the benefits of that to fully inform any air quality strategy for Victoria.

Ms POOLE: And can I add to that?

The CHAIR: Sorry, just to let you know, Dr Ratnam has had a power failure, so she is going to log back in, but please continue.

Ms POOLE: Okay. I will just add to that. I think the latest communication that I had with DELWP about their clean air strategy is that essentially they think it is done and dusted, and it sounded like the only thing they were recommending around reducing wood smoke pollution was basically what they are doing—that is home heating upgrades. They feel that because they are doing that, that is enough. That is the impression that we got from them—that they will not be recommending anything else.

Dr CUMMING: Chair, am I able to ask another question?

The CHAIR: Yes. Just when Dr Ratnam comes back in, though, I will throw back to her. Go ahead, Catherine.

Dr CUMMING: May I? Okay. I guess just from the conversation and the answers that you were giving Samantha, I really do like the idea of not passing on the problem, and I would hope that we actually look at that further in the way of making sure possibly that you would be able to get vendors to actually remove a wood fire, not to pass on the problem. There is not much talk about hydronic heating—you know, water heating—because it seems to be the push toward those reverse cycles. Let us not just have expense be the barrier if we were looking for the best thing. The possibilities of hydronic heating—I am just wondering if you have got anything more to add to that. It was obviously hard for me to get this air quality inquiry up because, yes, DELWP and others feel that it is just enough to have some, you know, recommendations, but we did not really get the legislation changed.

The CHAIR: Sorry, Dr Cumming, thank you for your question. But I believe Dr Ratnam is back now, and I know she has not had a go.

Dr CUMMING: Sorry, I will just finish—

The CHAIR: Is there a question?

Dr CUMMING: I will just finish in a brief way. I do not like thought of, you know, saying longer flues or this or that where the pollution is still going. So I think your approach that all smoke is dangerous, we need to phase it out—I would hope that that would be in the recommendations.

The CHAIR: Perhaps we will take that as a comment, Dr Cumming. So, Dr Ratnam, over to you. Sorry, you dropped out there for a second.

Dr RATNAM: Sorry about that, everyone. The joys of Zoom meetings. So my question was about the clean air strategy. Where do you think that is up to?

Ms POOLE: I think I replied as well, where I just said that essentially DELWP has communicated to our group that it is done and dusted as far as they are concerned. It seems like with regard to the issue of wood heating all they are pointing to is the home heating upgrades initiative. It seems like they are saying that that is sufficient. So they do not seem to making any kind of moves to do anything to actually reduce or having a targeted strategy around reducing wood smoke pollution, as far as I understand.

Dr RATNAM: Great, thank you. Just following up from that, I think, Dorothy, you mentioned in your submission about some of the approaches that had been tried, probably with good faith and good intention, but clearly failed, so we should learn from history. You talked about the Tasmanian example, as well, when they tried to, I believe, introduce some of those kinds of improvement measures and improved emission measures, but they did not fail until you started to actually ban the use of the heaters and phase them out. Are you able to elaborate on where the examples are of policy that has worked?

Dr ROBINSON: Well, Launceston, as you have probably heard from Associate Professor Johnston, is one of the really, really excellent examples of a policy that has worked. But it has unfortunately fallen off in recent years. It had some excellent education material. What happened was they had such excellent education material, where basically the whole community started to be informed about the health problems from wood smoke, that they only need small subsidies, and those small subsidies resulted in 2000 heaters being removed

for electric heating. And another 2000 households were so convinced of the problem that they removed them entirely at their own expense. So that was really what worked.

They also had a few other strategies, like trying to educate people on how to use wood heaters. And as Professor Johnston said yesterday, that tended to have a very, very temporary effect, and it is very, very labour intensive. So it is very, very costly and usually the benefits phase out after a couple of years. That is why, because they really did not follow through with the education for the whole period of time, things are now getting gradually worse and they are now starting to have several exceedances of air quality standards every year. So really you need to have a complete fix and say, 'New heaters are just as bad as old ones'. If you allow them to go in, then eventually the things will just get out of hand, as they are in Melbourne at the minute.

Dr RATNAM: And, Dorothy, did you talk about new heaters? Are you kind of insinuating that sometimes new heaters are used to kind of allay concerns, saying, 'Well, there's new technology. They should be better or safer'? Is that kind of the general mythology that is creeping in?

Dr ROBINSON: Yes, I think the mythology is that they are advertised as clean and environmentally friendly. You will hear from the wood heating association, the AHHA, this afternoon. They are saying, for example, 'We reduced emissions from 4 grams per kilogram to 1.5 grams per kilogram'. But that is on a test that does not bear any relationship with real-life emissions. Real-life emissions are just almost the same as they were before. So they have developed a false sense of security where people think they are getting clean wood heaters and they are not really. You need a PhD in wood heating operation technology to operate them correctly and it just does not happen in real life, or very, very rarely (so that is a problem) — and it never will.

Dr RATNAM: Okay, that is really interesting, and we will certainly follow that up. From the Senate inquiry into this very same topic—which was about a thousand years ago, and we wish the recommendations had been heeded—I was reading some of the data from that. The CSIRO statistics talked about the new wood heaters, like the mythology of that, saying the new wood heaters are still really bad and on an evening they emit equivalent smoke of 5000 cigarettes. So that is a lot of smoke that people are not realising that they are consuming.

Dr ROBINSON: Yes, and it is a real shame that in 2005, 2006, 2007 when they were trying to develop a new test that reflected real-life emissions all work was abandoned because of the objections of the wood heating industry.

Dr RATNAM: That is interesting. My final question, and I am just conscious of time, was going to be about the recommendation—I cannot remember which submission it was, but I think Arabella, you might have mentioned this—you actually believe that the solution in terms of regulation would be to move the whole thing to the EPA rather than have a fragmented approach of different councils.

Ms DANIEL: Yes, absolutely. The EPA is the specialist here, but what the EPA also needs to do is move into the 21st century. Their policy that you can just 'burn better' is archaic. It is 20 years behind the data and the science, so we need the EPA to step up and we need them to be funded properly, because we were hearing about the newly empowered and newly funded EPA and there is literally zero—zero—for clean air. Residential air pollution has been relegated to the local councils and it is forgotten. We need the EPA at a state level to step up and genuinely protect the environment and health of its community. So absolutely it needs to be taken up by the EPA, and an adoption of a zero-tolerance strategy to non-essential combustion. We should not be burning coal, fossil fuels, wood or any solid fuels, and especially not in our homes where it is directly impacting the users and the neighbours. That is where it causes the most harm, it is that close proximity. It is like the Launceston study showed: of all biomass smoke, including bushfires and planned burns, 74 per cent of the health impacts of all biomass smoke come from wood heaters. That was what that study showed. This was a 10-year study spanning the entire population of Tasmania. Three-quarters of all biomass comes from wood heaters. We need to really take this one so seriously and grasp it with both hands and please let this be the change that we need, because we have been waiting for a long time—a long time, since I was born.

Dr RATNAM: Thank you so much. We really appreciate the evidence, everyone.

The CHAIR: Great. Look, thank you so much. Time has beaten us today, but I just want to really thank all of you for your presentations and for making the time to present on this panel. Your presentations and evidence have been fantastic, so I would just like to thank you all very much for making the time for us today.

Witnesses withdrew.