TRANSCRIPT OF PROCEEDINGS

ENVIRONMENTAL PROTECTION AUTHORITY HEARING

APP203660 - METHYL BROMIDE
Hazardous Substances Reassessment

VIRTUAL HEARING
on 14 August 2020

DECISION-MAKING COMMITTEE:
Mr Tipene Wilson (Chair)
Dr Ngaire Phillips
Dr Derek Belton

Hearing Proceedings

Day 03 Friday 14 August 2020

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[8.30 am]

INTRODUCTION

CHAIR: Mōrena, good morning. My name is Tipene Wilson, I'm the Chair of the Decision-making Committee, given that privilege. I will pass over to my colleagues to introduce themselves.

DR PHILLIPS: Mōrena. I'm Ngaire Phillips and I'm one of the members of the DMC.

DR BELTON: Mōrena. I'm Derek Belton, the other member of the DMC.

CHAIR: Kia ora, welcome along everybody and those that were here yesterday, thank you for your indulgence as we got through the business of the day. There was a considerable delay before many people were able to present so thank you.

Many of you have heard three times already, we are here to hear the evidence for and decide an application on APP203660 to reassess methyl bromide. As I have done previously, we do acknowledge that the hearing is being held virtually and was scheduled to be at a number of venues over the course of the hearing. Unfortunately, it was not possible, due to scheduling conflicts, for the DMC to convene the hearing in person until mid to late September.

So, in the interests of time the hearing was originally convened and has still been convened with the DMC in attendance virtually. With the change in the Covid-19 alert levels we are now no longer providing EPA venues for submitters. The hearing is now being conducted fully as a virtual hearing. Submitters will continue to receive links to participate via Zoom videoconferencing. Others can observe by following the links in the hearing page on the EPA website.

The hearing is specifically to address this application. The HSNO Act does not permit the Committee to make decisions about other substances that are currently approved or going through their own application process as part of this process, nor is it the Committee's role to assess methyl bromide recapture technologies. The Committee shall consider and decide any application other than an application which is the subject of a ministerial decision under section 68 of the HSNO Act and shall have, in relation to any such consideration and decision on any matter, the same amenities and privileges are as processed by a District Court judge. The object of the hearing is for the Decision-making Committee to be as informed as possible on the matters on which we are charged with making a decision.

The way proceedings have run is we heard first from the applicant on Tuesday, who introduced the application and then from the EPA staff that presented the staff report and then progressively from submitters who have indicated they wish to be heard. The Committee has final questions and then the applicant will have the right of reply on Monday late morning, at which stage the hearing will be adjourned for deliberation by the Committee.

As advised the DMC has read all the information provided from the applicant and submitters, and you will know the magic number, 6,100 pages. The parties have been asked to pre-circulate any additional information they intend to produce at the hearing. It does not need to be read verbatim. Parties should highlight key parts of the information and we will be restraining excessive repetition or matters we consider irrelevant to the application we are hearing.

I note again that the role Committee is not to determine the actual or the claimed efficacy of alternatives to methyl bromide or alternative methyl bromide recapture technologies.

Because the Committee has read the comprehensive information provided there may be few or no questions for submitters. This is a reflection of the amount of work you have put into your submission as opposed to our lack of interest in the matter. So thank you for that.

On to the matter of questions. At the end of each person's presentation I will invite questions to the presenter from the DMC, the EPA staff, the applicant and any submitters or witnesses that have questions of clarification or explanation. As I did yesterday, I note that I will invite questions of clarification or explanation. I will decline to have questions put that stray too far into cross-examination, are irrelevant to the matter we are considering or if the questioner starts providing a statement or submission themselves.

[8.35 am]

Please speak clearly when asking or answering questions for audio recording purposes and please also, for the audio recording and for the Committee, if the persons that are putting a question forward could identify themselves and the organisation that represent, if indeed they are.

In terms of health and safety, we are doing this virtually so I assume that wherever you are you are taking care of your own health and safety.

In terms of media presence, the hearing is public and will be accessed via remote access technology except to the extent that we require to

protect any sensitive information. Representatives of the media are free, of course, to attend and report the proceedings. We don't have the issue of cameras and video recorders as we can all see each other on screen, and that too is being recorded. Media, if you feel the need to make recordings or if you have any specific request, please do so by emailing media at epa.govt.nz. Transcripts of the hearing are available the next day and will located in the hearing section of the Methyl Bromide Consultation page.

For those that are providing presentations today, please provide them to Marree Quinn, who is also on the Zoom, so these can be uploaded on to the Methyl Bromide page and it is also very helpful for the DMC. We absolutely want to review those at the adjournment of the hearing.

Let's go on to introductions. Let's ask the EPA team to introduce themselves.

MR BAILEY: Mōrena, I'm Lee Bailey. I'm the senior advisor in our reassessments team at the Environment Protection Authority and I am the project application lead for this application.

MR DEEBLE: Mōrena, I'm Ben Deeble. I am an advisor for the reassessment team and I've been working on this application.

MR BAILEY: Also in the room with us here in Wellington, we have Milana Blakemore, who is the reassessments team leader; Marree Quinn, who is doing an admiral job in keeping us all straight with administration of the process; we have Julian Jackson, who is a member of our Kaupapa Kura Taiao team, Māori advisory team. We also have Matt Allen and Dan Phipps, Matt's a senior advisor in the reassessments team and Dan, who is an advisor. Matt and Dan are here to support the DMC write their decision document when they reach that point. Also on the call we have Phillipa McKenzie, who is a senior solicitor with us, and Gayle Holmes, who is the General Manager of Compliance, Monitoring and Enforcement.

CHAIR: Thank you. Mr Slyfield.

MR SLYFIELD: Mōrena, sir, and members of the Committee. My name is Morgan Slyfield. I am the legal counsel for STIMBR, and in the room with me and also online are Don Hammond and Ian Gear, who have both provided evidence to the hearing, and my co-counsel, Duncan Bellinger. There will be other members of the STIMBR team online throughout the course of the day.

May I signal, sir, before we get too much further along, there is a matter of housekeeping that I would like to raise before we get on with the

submitters this morning. It will only take a minute or two but, I think, it is a useful time for me to raise it with your permission.

CHAIR: Thank you. Remind me if I forget. Let's go around others in attendance. We have seen this a little bit all over the place on Zoom, I am not sure you can see the same screen that I can, in the top middle I've got Dr Miller. How about we start with you, Dr Miller, and we will go around the Zoom? You are on mute.

DR MILLER: Good morning, Mr Chairman, everybody. Melanie Miller, acting in an individual capacity but specialist in the environment science and Montreal Protocol.

CHAIR: Thank you, to Ngāi Tahu.

MS DIJKSTRA: Mōrena koutou. Stephanie Dijkstra and I'm a member of the Ngāi Tahu HSNO Komiti.

CHAIR: Thank you, Mr Browning.

MR BROWNING: Good morning, I am just watching in for a little while now but I will be coming back on later when we give our own submission.

CHAIR: Thank you. Mr Glassey.

[8.40 am]

MR GLASSEY: Mōrena, Ken Glassey from the Ministry for Primary Industries, also been a methyl bromide technical options member for 14 years and co-author of the IPPC recommendations for reduction and have been involved with running the biosecurity treatment programme for 17 years, I guess. Thank you.

CHAIR: Thank you. Mr Moenboyd.

MR MEONBOYD: Kia ora tātou, Paul Moenboyd from WorkSafe, from the regulatory frameworks team.

CHAIR: Thank you and Mr Fine? Okay, does anybody else want to introduce themselves? Mr Fine is from transcription services, so treat him well. Ms Barry-Piceno?

MS BARRY-PICENO: Good morning. I think most people in the Zoom room know me but my name is Kate Barry-Piceno and I am here on behalf of Tauranga Moana Fumigant Action Group or TMFAG as the acronym is known. It is a rather clunky one but that's how it sounds.

CHAIR: Ms Smith?

MS SMITH: Good morning. Most people on the Zoom will also know me, Nicole Smith, resident of Mount Maunganui, barrister and also a member of TMFAG.

CHAIR: Thank you. In the interests of time and not wanting to disrespect anyone that has introduced themselves or others that would like to introduce themselves, but we can see your names. Thank you. Mr Slyfield, back to you.

MR SLYFIELD: Thank you very much, sir, and can I preface this with the statement that STIMBR is not seeking guidance from the DMC now in relation to what I'm about to say but the feeling is that it may be something that the DMC will have some time to think about over the course of the day and provide some guidance by the end of the day, but we'll be in your hands in that respect. There are three matters that I want to briefly touch on.

The first is some submitters have been raising that they have not had time to consider their position on STIMBR's amended request and STIMBR wishes to acknowledge those views and say that it understands that position. I also need to acknowledge that the DMC has been very careful to say that no position has yet been reached in terms of legal or jurisdictional questions that that throws up. That is, of course, a matter for the DMC. In the course of hearing from some of those submitters, some have said that with the benefit of some additional time they would be able to formulate a position and we heard Ms Dijkstra from Ngāi Tahu yesterday say that. That is a position that is, of course, open to the DMC and it may just be useful for the DMC to know that if the DMC were minded to follow that route STIMBR would entirely support that. You would have no opposition from STIMBR. STIMBR thinks it is important that people are given the opportunity to express their views.

The second point then is that it seems from the presentations we have heard to date that there may be more agreement between the air dispersion modellers than previously appeared. It is abundantly clear they don't agree all matters and there is still some disagreement for the DMC to navigate its way through. However, if the DMC is minded to give submitters some additional time to provide comments on STIMBR's position or formulate a position, then STIMBR considers there may be an opportunity to use that same period of time to ask the modellers who you've heard from - Mr Todoroski, Ms Barclay and Mr Sullivan - to regroup and see whether they can close any of the remaining gaps between their positions. That is something that STIMBR would also support but that is, of course, again a matter that is entirely up to the DMC whether it wishes to take that course. I would

say that it would open to the DMC, should they be considering that, to frame up some particular issues or questions for the modellers if the DMC has some questions in mind that will help it.

[8.45 am]

The third and final part of this is that those positions raise a query and it is this really that some guidance is sought on as to how the DMC anticipates the process on Monday working in terms of STIMBR's reply. STIMBR is preparing itself to present a reply on Monday in accordance with the schedule and will be ready to do so. I simply want to add to that that if the hearing is adjourned in order to allow time for further information to be obtained - and, of course, that could be something that the DMC does in any event in relation to subject matter that I haven't mentioned - then STIMBR's reply on Monday could only ever be a partial reply based on the information available at that time and STIMBR may need to provide a final position once all the further information is in. On that basis, I am seeking some guidance from the DMC about how it sees the reply function working on Monday and whether it wishes to hear from STIMBR on the application as it stands at that point in time or whether it may prefer, if it is minded to adjourn the hearing in order to obtain further information, to wait and have a more holistic reply, a final reply from STIMBR after that has happened.

Unless there are questions about that question, that is all I wish to raise, Mr Chair, and I stress I'm not seeking any guidance right now in relation to those matters.

CHAIR: Okay, thank you and thank you for your questions. We will get back to you on that because those are matters that we are also alive to.

MR SLYFIELD: Thank you, sir.

CHAIR: Right, let's move on to the other business of the day. Dr Miller, we are happy to hear from you with your submission. Thank you. You are on mute, so just before you come off mute, just before you start, sorry to interrupt but there is one matter I did forget to mention. If anybody wants to ask questions in the participants section you can raise your hand or in the chat section you can also communicate that you wish to ask a question or talk during the question time. Thank you. Sorry to interrupt, Dr Miller.

DR MILLER: No problem at all. Good morning, everyone.

CHAIR: Sorry to interrupt, Dr Miller. We can't hear you properly. Is there something with your connection or do you have another computer on at the moment?

DR MILLER: We had floods last week. Can you hear me now?

CHAIR: Not really. If it would help, you could call via a landline.

DR MILLER: Can you hear me now?

CHAIR: Much better, thank you.

DR MILLER: If I turn off the video I can't show the PowerPoint. This is kind of awkward. Mr Chairman, perhaps you could go to the next speaker and I will try and resolve this technical problem.

[8.50 am]

CHAIR: Sure. That's fine. Do what you can and we'll come back to you. Actually, I'm getting a suggestion. If your PowerPoint is emailable size, if you email it to the EPA we can put that up or somebody in the team can put that up.

DR MILLER: I'll do that now. Thank you.

CHAIR: Seeing as you're ready to go, just take a couple of minutes' breath and I hope we can get you underway.

DR MILLER: Okay, the PowerPoint is going. If there is another speaker who wants to speak now, I would be very happy.

CHAIR: Yes, let's do that then and perhaps just liaise with the EPA to make sure you can get some dial-in codes and just come in via landline or mobile.

DR MILLER: Thank you. I apologise.

CHAIR: No worries. There is no problem doing that. Ms Stewart from Horticulture New Zealand, are you online and are you ready to go? Okay, let's move on then and come back to Ms Stewart. Is Mr Beech online from Guardians of The Sounds? Mr Nalder from New Zealand Fresh Produce? Mr Browning, I suspect that you're not here either? You are. Mr Browning, are you ready to go now? I'm happy to wait if you're not. I know this is quite a bit earlier than you had anticipated.

MR BROWNING: I certainly wasn't anticipating going just yet but I probably could open for Soil & Health Association. I'm not sure whether my witnesses would be there. They can probably complete later, if that's helpful, but I could start for Soil & Health.

DR MORGENSTERN: Steffan, I'm here.

MR BROWNING: Okay. Dr Morgenstern is there.

DR MCLEAN: I'm here as well, Steffan.

CHAIR: I don't want to rush you, Mr Browning, but if you're ready to go that's fine, otherwise we can just all take an early coffee break, which would be fine by me as well.

MR BROWNING: I'm ready for my first as well. I think in your interests maybe it's best that we go now and it might work for my day as well. So I'll just need to alert other people around me to keep the noise down while I get on with that.

[8.55 am]

SUBMISSION 127588 - SOIL & HEALTH ASSOCIATION

STEFFAN BROWNING PRESENTING

MR BROWNING: I'm here representing the Soil & Health Association of New Zealand. I've been involved with this issue for many years, well more than a decade, and was involved with the reassessment in 2010 as part of that. We were disappointed at the time that the industry had ten long years to institute recapture, which we saw as an obvious solution to the release of methyl bromide to the wider environment and certainly to the community and onward up to the ozone layer.

Our reason for being involved was initially following the deaths of six port workers in Nelson from motor neurone disease and Dr Dave McLean will be able to speak to some degree on that. While it was not proven conclusively that those workers had died -- that methyl bromide had caused their motor neurone disease, statistically it was a very strong link and so, yes, there was great concern. I was looking forward, and will look forward, to Dr Melanie Miller's submission, which I have read off your site, and she also points out the strong toxicity of methyl bromide.

So those concerns have raised a lot of concern in our communities, obviously Nelson later, and I live in Marlborough - I'm in the Marlborough Sounds as we speak - and for the Picton community and I know that Mr Beech, who will be on later on, will speak for The Guardians of the Sounds. We have put a lot of effort in in Marlborough to have the release of methyl bromide stopped at our local port, Shakespeare Bay just through from the Picton ferry terminal that most people will be familiar with. That sort of campaign, you might say, went on to Wellington as well and that was simultaneously there and that city or that port stopped methyl bromide use on the wharf without recapture. In fact, they do use recapture, of course. They use the Nordiko system, as does Nelson. In Picton and Nelson and Wellington,

it is my understanding either there was no fumigation or the fumigation is using phosphine, which is vented at sea, which is probably unfortunate for the third world sailors that would be on those ships.

We have put a lot of effort in in places like Tauranga as well. I've looked at the facilities at Napier, I've looked at the facilities in Northport and tried to think of what a solution would be for the authorities, for the industry for fumigation.

[9.00 am]

I have basically come to the point that it would be better if facilities were built for fumigation that would allow recapture and because of cost it would probably be in one or two places only. This is in terms of log fumigation. So we would be thinking of Northport and I realise that in Bay of Plenty their plans are well advanced with the idea of a purpose built facility for fumigations.

I want to go again a little bit into the flow for the Soil & Health Association. In 2010 we appeared at the reassessment alongside some very good submitters that had very clear submissions, and the combined trade unions in particular I thought stood out in that. As I say, we were disappointed with the outcome. Later in Tauranga there was another process, the resource application process for Envirofume, and you will be familiar, I hope with the court case to the Environment Court that ensued after that. Judge Smith was very, very clear, very disappointed in how fumigations were happening there and how New Zealand appeared to be breaching the spirit, at least, of the Montreal Protocol. The Envirofume application was effectively turned down and it was clear that things needed to change. It was also pointed out that there was not a cohesive approach to methyl bromide fumigation. The port company wasn't there and that judge could see that there needed to be an integrated approach and that recapture should at least be happening and how that would happen … well, all parties needed to be involved with that.

We were still looking forward and disappointed that things were taking so long and that it looked like we wouldn't see recapture as anticipated until this year some time when the deadline was to be met. But our cynicism maybe was already fairly high from the decision back in 2010 to allow ten years of fumigation. It was well known there would be a spike of log exports, that there would be an increase in methyl bromide use, and yet the industry was given ten years, which actually gave them ten years of use of methyl bromide without recapture while those in that Decision-making Committee effectively allowed an increase in use in New Zealand, which is against the spirit of the Montreal Protocol.

Then we got a reassessment application and here we are in a reassessment. That was based primarily on the ability for reassessment to come due to increased volumes of whatever substance, in this case methyl bromide, was being used. I believe that was ultra vires, that it was wrong, but we did not have the resources to challenge that in a court.

[9.05 am]

The Decision-making Committee in 2010 knew full well there would be an increase in methyl bromide and a substantial one at that. For another reassessment to now be occurring because of the increase, the projected increase, to occur was disappointing to say the least, and now we have a waiver through to next year. So we are looking forward to something maybe somewhat more meaningful from this process. I stand by my words the other day but I was rather frustrated. Again, I had not had my morning coffee, maybe, but to not have the EPA look at the process and my question around recapture to Mr Hammond from STIMBR effectively being discouraged was disappointing. I realise there had been a change in legislation in Parliament at the time but it was not within my portfolio area as such to see changes to the health and safety workplace issues and now Worksafe have some of that responsibility. I hope that this Decision-making Committee, for the sake of the community and those people, including ourselves, who are part of this process, if they cannot give the direction that might have happened in 2010 could at least give a very, very strong call or guidance to Worksafe in what is expected in terms of recapture.

Back into some of the local stuff, in terms of modelling, I hear the disagreement with the modellers and it is something that we have always said. I am looking here at very interesting topography and it is in Picton, it is everywhere, in Tauranga, in Northport for that matter. Everywhere has got its distinct features and modelling will never fully predict where a plume of methyl bromide might go on a particular day at a particular time or a particular condition. It may give a good indication if there's a steady gentle wind in some direction and the temperatures are such.

For example, in Tauranga, and in my experience in Picton, watching the monitoring around at fence level, around at where maybe the majority of people are working at a particular time, but where a plume might rise and then fall, whether it goes left or right, up, down, whatever, whether it goes over the marine environment and drops because of different temperatures in terms of the water or over another area that's built up and there's some air rising, it's -- even the temperature like it is for me today here, I think if I light the fire the smoke would probably descend down the valley. I'm elevated. The modellers can only do their best but they will never ever get it perfect.

So recapture, whether it be for EDN, methyl bromide or some other fumigants, they all need recapture.

I felt it was also -- I noted in 2008 the two refrigeration engineers were successfully and appropriately prosecuted under section 13(f) of the Ozone Layer Protection Act for reckless discharge of ozone depleting substances.

[9.10 am]

Yet industry has been able to release huge amounts of methyl bromide to the atmosphere and Dr Olaf Morgenstern will say, when I've finished here, will point out the significant volumes of methyl bromide that New Zealand puts out relative to its size, and implications for the ozone layer and for the health of life on this plant, including us people here.

I just notice in my notes, and something that probably added to our cynicism, was when Dr - I think it is - Helen Atkins, who was the chair of the last Decision-making Committee, and I ended up as a bush lawyer being in the Environment Court in Tauranga and she was advocating for Envirofume and I found that disturbing. While she's fully entitled to do that, I want to believe in the integrity of the system and the participants in making these decisions, and I look to you as the Decision-making Committee, with expertise and integrity.

It did disappoint us in this community to see the situation that we had where -- and there have been other conflicts of interest that Soil and Health have exposed in Decision-making Committees over genetic engineering. Kieran Elborough was one clear example and there were others. So we would hope that the Environmental Protection Authority is in better hands. I have noted your expertise, each of you, on the Decision-making Committee and I'm looking forward to you being in top form for this case.

The monitoring I mentioned earlier, and I just -- sorry, my notes were scattered here. In Picton, when we did get some testing done, some monitoring done, actually in the township methyl bromide was found. It's below XYZ level so it's not a health issue. I would differ on that. But more of the point was that that methyl bromide had come through the cutting from Shakespeare Bay through into the -- past the Interislander ferry terminal and the large volumes of people and the interactions that are going on there, across the foreshore of Picton and obviously to the CBD. This is one example of where methyl bromide gas might go.

The two points that they were monitoring had no real relevance apart from being two distinct points. I think that's the case of any monitoring

site that it does not necessarily say where the methyl bromide's gone between the points of monitoring.

I followed through a little yesterday when TMFAG were doing their presentation and Mr Aubrey Wilkinson, who I've met; they're an organisation that came along following the Environment Court case in Tauranga. People like Mr Wilkinson actually work in what I would call, from a lay person's point of view, gantry cranes at the Port of Tauranga. That's at some height yet I've heard no hint of monitoring by the Regional Council or Genera or the port for workers in those situations at all.

[9.15 am]

Or places further away from the direct fumigation area at the port where inversion layers might drop the methyl bromide down in concentrations that are harmful to people.

I've probably said enough at the moment and I think it would be useful to turn to Dr Dave McLean and who put in views himself, possibly his CV was with the evidence that was collated, and then Dr Olaf Morgenstern. I leave it in the hands of you, Mr Chair.

CHAIR: Dr McLean.

DR DAVE MCLEAN PRESENTING

DR MCLEAN: I'll try to be quick. I made a submission to this Committee but I'm working from home today and I haven't got it with me so if you bear with me.

CHAIR: That's fine.

DR MCLEAN: Yes, good. I don't have any particular interest in methyl bromide, I'll say that at the start, but I'm an epidemiologist with a particular interest in occupational and environmental exposures of people and their health effects. So my interest in methyl bromide is simply that it's a chemical of concern from that perspective.

I was asked to provide a statement on the known health effects of methyl bromide, which is what I've tried to do. It was a slightly rushed submission but I'll try and raise the key points.

The first is that the acute effects are pretty well-known and it is an incredibly toxic chemical, extremely toxic, and there continue to be case reports in the scientific literature about deaths or serious health effects and the treatment of it. So I was quite surprised how frequent those were when I looked at the literature. I have no idea what happens

in New Zealand. So I would emphasise that it is extremely acutely toxic and that I would hope that we would continue to treat it as such.

The chronic health effects, the effects of longer-term exposure at lower levels, what stood out to me when I looked at the literature is how little information there is. I think that's because it's a chemical that's on the way out. It's not a chemical of primary concern for researchers and yet you would normally need large cohorts of people who are exposed to be able to study them. We don't have that.

But I looked at the last five years of publications in PubMed, the main demographic source, and I think there were 156 papers in scientific journals on methyl bromide in the last five years. Most of them were about its efficacy as a treatment for different pests and 16 were about health effects. So that's one in ten, 10 per cent of the papers were looking at health effects. Some of those, as I said, were cases of deaths or serious health effects in people who were exposed.

I put in my submission that there are -- there's certainly no conclusive evidence but there are a number of studies, and quite good studies, that have suggested carcinogenic effects of exposure to methyl bromide. The main one being the large agricultural health study in the United States; that's very well-conducted and has found a couple of cancers related to exposure.

The other main concern has been the degenerative neurological condition such as motor neurone disease and Steffan has mentioned the cluster of cases in Port Nelson. Cluster examinations are very difficult things to conduct and to find any conclusive evidence but there was no -- the conclusion from the report was that it was inconclusive. There was no strong evidence.

[9.20 am]

It's known that one of the acute effects of methyl bromide exposure is effects on the neurological system. I mentioned in my submission that we have done a case control study of motor-neurone disease in New Zealand and there are two interesting findings in that regard. In our analysis by occupation, we found excess risk in the sort of occupations where methyl bromide may have been used in the past, such as in horticulture.

We had self-reports of exposure, which is much less reliable, but we asked people if they'd been exposed to fumigants or solvents or various other things. We found fairly strong associations with people who said they'd been exposed to fumigants. So there's no clear, conclusive evidence of cancer or the neurological effects but given how little

research is actually being done, there's a fairly reasonable suggestion that those effects do exist.

The final point I'd like to make is about exposure. Again, as I haven't got my submission in front of me, I can't remember the exact study, but there was a Californian study looking at -- I think there have been a number looking at various effects in children of residents that live in the neighbourhood of horticultural areas. They show that the methyl bromide does travel quite a long way and exposure occurs.

My final point would be that we, in my research group at Massey University, have done a study of people who work in ports and go into containers and unload containers and things like that and also the log fumigators. We were looking for exposures to a range of chemicals. We found that the exposures weren't high but for methyl bromide in the fumigators, every single one of them we could detect methyl bromide in the filters or the pumps that we'd used to sample the air that they were breathing. The levels were not high but they were 15per cent - 16 per cent of the current threshold limit value put out by the American Conference of Governmental Industrial Hygienists.

What concerns me is that that exposure level is set on the basis of upper respiratory tract and skin irritation. Those are the effects that they're trying to avoid but there is no attempt to control for chronic effects such as cancer or neurological disease, because we simply don't have the evidence. I would submit that the threshold limit value or the exposure level is not great.

That's effectively what I was going to speak to.

CHAIR: Thank you very much. Are we going straight to Dr Morgenstern now?

DR MORGENSTERN: Yes. I'll share a screen with you if I can. Can you see what I see, my first slide?

CHAIR: Yes, thank you.

DR OLAF MORGENSTERN PRESENTING

DR MORGENSTERN: I'll talk very briefly about New Zealand's usage of methyl bromide and also a tiny bit about the science of ozone depletion that is the reason I'm interested in this. I should say I work for NIWA. I'm a climate scientist with specialisation in ozone depletion and especially also its climate effects.

Let me just start by saying a few sentences about the global aspects of the usage of methyl bromide. Methyl bromide has been slowly decreasing in abundance in the atmosphere in recent years. It's

measured in terms of parts per trillion. The abundance in 2003 would have been about 9.6 parts per trillion, so 9 in 10^{12} molecules of air were methyl bromide in that time, and it's decreased to just over 6, maybe 6½ in 2018. This decrease is because the non-QPS usage of methyl bromide, which is controlled under the Montreal Protocol, has now pretty much collapsed to zero. That means that now the QPS usage, the quarantine pre-shipment usage that we're talking about here, is now substantially bigger. The emissions from that activity are substantially bigger than the non-QPS usage.

[9.25 pm]

To put this in context, I've listed here the emission of methyl bromide for 2018. In 2018 New Zealand was the sixth largest emitter by country. I acknowledge there's a small mistake in the submission that I made, where I listed New Zealand as the fifth largest emitter because I had failed to see India in the list. Countries that are bigger emitters than us include the United States, India, China, Vietnam and Australia. New Zealand's emissions are bigger than, for example, those of Japan and South Korea, who are number 7 and 8 on the list.

If you divide the emissions by the size of population of these countries, you notice that New Zealand is by far the world's largest emitter. When I last did this a couple of years ago, a calculation, New Zealand had four times the emissions per capita as the second-largest emitter on that scale, which would have been Australia. To put this in another view here, here's the QPS consumption of methyl bromide, as reported to UNEP, the United Nations Environmental Protection Agency. The numbers are available since 1991, almost consecutively. It started out at 15 tonnes per year used in 1991 and now we are at 684, I believe. The numbers are too small to read but that is roughly the magnitude. The last year is the biggest year, has the largest emissions on record.

You can see here there is a steep increase in the usage over that time of methyl bromide in New Zealand. Despite that, there's a decrease in total global abundance. That's because other countries have gone in the other direction. Especially Europe has practically no usage any more of methyl bromide.

Here's a quote from the most recent -- the 2018 Scientific Assessment of Ozone Depletion. I should say that under the terms of the Montreal Protocol and the Vienna Convention, every four years the scientific community puts out this scientific assessment to summarise the state of knowledge in ozone depletion. Here are the numbers that I just quoted. The peak was in 1996 - 1998 of 9.2 parts per trillion and it's now declined to 6.8. However, the reported consumption in quarantine and pre-shipment usage of methyl bromide, which are not controlled under the Montreal Protocol, has not changed substantially over the last

two decades. That's the global usage of methyl bromide. The total reported anthropogenic emissions, however, which are controlled and non-controlled, have declined by about 85 per cent because of the non-QPS usage basically collapsing to zero.

Atmospheric methyl bromide abundance is now near the expected natural background. I'd say it's roughly a quarter above the natural background, from being about twice the natural background two and a half decades ago.

To wrap this up, the emissions of methyl bromide in this country have increased sharply. Globally the consumption of methyl bromide has decreased, leading to a relatively quick reduction in the abundance of methyl bromide. I should say that methyl bromide is probably the shortest-lived of the species controlled under the Montreal Protocol, which means you can have a relatively fast response of the abundance of methyl bromide in the atmosphere to changes in its usage. That's different from other species, other compounds that are controlled under the Montreal Protocol that often have lifetimes that are measured in decades, several decades, and whatever you do to emissions does not have a fast effect on the abundance in the atmosphere of these species, but it does have from methyl bromide.

[9.30 pm]

Also methyl bromide contributes to ozone depletion, which is a leading cause of climate change, of recent climate change in the southern hemisphere. If you're interested I can explain a bit more what I mean by this. For example, the drought in Northland that you might have heard of that is threatening the water supply of Auckland at the moment, an event like that would have been made more likely because of ozone depletion, so it's a pretty significant economic impact. As a climate scientist we can't put our finger at an event like that and say that was definitely caused by ozone depletion, but we can say that it fits in with the larger picture of weather systems moving forward under ozone depletion, exposing a region like Northland to more subtropical types of weather, which means it's dry, as opposed to mid-latitude moist weather which would mean abundant rain.

I've got two more slides. If you're interested I can show them or otherwise I'm ready to take questions.

MR BROWNING: Show them ideally.

DR MORGENSTERN: Okay, so the next one is a graphic that I took from the 2018 ozone assessment. It shows the makeup of ozone-depleting substances, essentially. On the left the two columns are chlorinated species and on the right are brominated species. Maybe we'll focus on the column on

the right. You can see here that the total bromine abundance in the atmosphere has declined from 22 parts per trillion to about 19.6 parts per trillion between 1998 and 2016. That decline is very largely driven by a reduction in the anthropogenic fraction of methyl bromide, which is in orange here. Methyl bromide humans, minus 68 per cent is what this thing says. There is also a reduction in other species, halons, halon 1211, these are industrial compounds used in fire retardants and so on. In green down at the bottom is the relatively large natural background of bromide which we assume is unchanged.

This last slide is one that sort of summarises the understanding of climate change that is caused by ozone depletion. Essentially what it does is if you deplete all -- so all the species that we call ozone depleting substances, some of them partially get lost in the troposphere but a fraction or maybe the whole abundance of those species eventually makes it into the stratosphere where they break up and then they deplete ozone. This causes a cooling in the stratosphere due to the ozone hole. The cooling comes with an acceleration of westerly winds and that acceleration and also the strengthening of the westerly winds that goes with that penetrates into the troposphere, into the lower atmosphere, it leads to a poleward shift of weather systems, especially in southern summer and that poleward shift of weather systems, as I said, would shift the associated rain that comes with it poleward by several degrees in latitude, like two or three degrees, four degrees or so.

If you are region that is sort on the edge between that latitude and sub-tropical climate, such as Northland, that means that you are at greater risk of developing droughts.

Some of my colleagues have started quantifying what that means. The drought is worth billions of dollars to the New Zealand economy in damage.

So methyl bromide is, of course, not the only culprit involved here, there is other various species that are also involved but it is a contributing factor. That is all I have to say here.

CHAIR: Thank you. Mr Browning, do you have any closing comments or are you ready for questions?

MR BROWNING: Closing comments there. Dr McLean pointed out, very conservatively I think, that there are some serious issues with methyl bromide in terms of toxicity but the point I would note there in particular is that we should not be under estimating the issue with chronic low exposures.

[9.35 am]

In terms of Dr Morgenstern's presentation, that while there has been a significant reduction in methyl bromide use internationally, particularly from the agricultural area it has been reduced, that New Zealand per capita has an extremely high use and all that remaining effect of anthropologic, human, use of methyl bromide will have an effect on climate change through ozone depletion.

I will leave it open to questions at this point. Thank you.

QUESTIONS

CHAIR: Thank you for that. Thank you, the three of you. Dr Phillips, please.

DR PHILLIPS: Yes, good morning. Thank you for your presentations. I just had one question for Dr McLean. Just in relation to the paper that you quoted on that long-term study on agricultural workers, I was just interested to know how you felt about whether the exposure profile would have been comparable between that and workers on ports.

DR MCLEAN: I would have no idea, to be honest. We don't have measurements from the past, which that finding is reflecting. So, really, no, I have a gut feeling it might have been higher.

DR PHILLIPS: Yes, if you think about how the applications would have been in an agricultural setting versus the situation we are talking about -- I guess I am just working out how relevant that information is to this current situation, except at a very broad level, which obviously it is.

DR MCLEAN: I think that the log fumigation is not exactly high tech science, though, either.

DR PHILLIPS: No, no.

DR MCLEAN: So there might be some comparability.

DR PHILLIPS: I was also interested in your comment about how there was so few papers on chronic exposure. You described it as a chemical on the way out but I would also describe it as a chemical that has been around a long time. It is quite interesting there hasn't been a lot of longer-term studies done.

DR MCLEAN: I am not sure why but I am only quoting the last five years just to put some bounds on it but it is more relatively recently that people were interested in taxes and things rather than looking at acute things. Recently with my age, that is the last 30 years or something that --

DR PHILLIPS: Fair enough. All right, thank you very much. Thank you. No more questions, Chair.

CHAIR: Dr Belton.

DR BELTON: Thank you, Chair, and thank you the presenters for a pretty comprehensive presentation. I have a couple of question. First to Dr McLean again. I think you said in your own case control study you demonstrated strong associations associated with fumigants. I am just wondering if you can clarify. I think that was information in your case control study? If you could just clarify a bit more about those strong associations, what is the measure, how strong?

DR MCLEAN: Well, in a case control study we were work out an odds ratio, what are the odds of a person who has the exposure getting the disease compared to someone who isn't. Sorry, someone has just driven up my drive. I can't remember the actual number because my submission is at work but I think it was something like 4.5 times an odds ratio of 4.7 or 4.5, is that right, in my submission? So that is quite a significant excess in risk but the qualification is that it is not a very accurate exposure just asking people whether they were exposed.

[9.40 am]

So if someone has got methyl bromide, they will be thinking back, "Oh, what have I been exposed to over the years that might have caused my disease?" Whereas the cases that we are comparing them with would have no reason, or not as much reason, to remember having been exposed to fumigant.

So our main analyses are based on the jobs that people have done in the past. People can remember their jobs with some objectivity and accuracy and then we make an assessment based on other information whether those jobs would have been exposed to A, B or C. That is more robust evidence.

I am sort of downplaying the evidence for the fumigants because it was self-reported. I would be shot down in flames if I tried to report it too strongly.

DR BELTON: Thank you. Now, a question for Dr Morgenstern. Can you give us an indication of where you would estimate the proportion of methyl bromide contribution to ozone depletion to contributing to climate change? How strong that may be versus our release of greenhouse gases, CO_2 and methane, for instance, please?

DR MORGENSTERN: So the ways CO_2 and methane affect climate are quite different from how these ozone depleting substances affect climate. Some of the ozone depleting substances are also greenhouse gases but their role in trapping heat is much smaller. It is a secondary effect, at least from my

perspective. The primary effect of these ozone depleting substances is through affecting southern hemisphere upper sphere dynamics. The speed up of westerly winds, the poleward contraction of weather systems essentially, that is the climate change that we are talking about here, it is not the warming effect. In that sense the effect of ozone depletion on climate and that of greenhouse gases on climate are relatively different stories. There is, of course, overlap and linkages between them but for this purpose I think we can separate them a bit.

Are you interested, for example, in the contribution of these greenhouse gases toward an event like the Northland --

DR BELTON: Yes.

DR MORGENSTERN: I wouldn't want to put a number on that, to be honest. So the ozone depletion effect is also seasonal. It is mostly in summer, which of course from a drought perspective is most critical, whereas the global warming due to greenhouse gases is much bigger in winter than in summer. Right, yes, as I said because they work in quite different ways is a bit hard to compare them quantitatively.

DR BELTON: I understand that. If anyone could differentiate them, you could, that is why I was asking you the question.

DR MORGENSTERN: Yes, I can tell you the various climate effects that these things have but putting them on a single linear scale is not that easy.

DR BELTON: That is it from me.

CHAIR: Thank you, I have no further questions. Dr Morgenstern, if you wouldn't mind giving your presentation through to the EPA so that they can post it up on the website, please. That would be appreciated. EPA staff questions?

MR BAILEY: Kia ora. The first one is not really a question as such - and please accept my apologies, Chair - for Dr McLean. The team had a quick look at the solution that you provided, so thank you. We know it does highlight some relevant points but without detailed further analysis, including reviewing the document we talked about the other day with Dr Pemberton, the DSR document from 2020, there was nothing immediate that would trigger us to deviate from our position as presented in the science memo. But just you mentioned at the end of your presentation that a study in New Zealand found methyl bromide in air and you quoted an American number. Just could you confirm what that American number is and the value of it, please?

[9.45 am]

DR MCLEAN: The American number I was quoting was the ACGIH threshold limit value of, I think it is 1,000 micro - I can't remember the unit, to be honest - parts per billion, 1,000 parts per billion. I note, I think, that the New Zealand workplace exposure standard is double that, 2,000 parts per billion, but not a lot of logic to that.

MR BAILEY: Thank you. We have no more questions.

CHAIR: Thank you. Mr Slyfield?

MR SLYFIELD: No questions from STIMBR, thank you, sir.

CHAIR: Thank you. Ms Jones, you have a question?

MS JONES: Yes, thank you. This is a question to Dr McLean. As you know, in Tauranga we have children very close to the Port of Tauranga playing sport. I just wondered, is it reasonable to assume that any data relating to the latent effects of methyl bromide on the general population do not map well to the potential effects on children and adolescents, given their immune systems are under-developed?

DR MCLEAN: As a general rule, exposure standards are developed in workplace settings and are based on the effect on adults and it is acknowledged that children and the elderly and the infirm have different levels of susceptibility to substances. They are also exposed often for 24 hours a day compared to an average eight-hour workplace exposure. So I think I'm agreeing with you that the effect on children would be greater than on healthy adults.

MS JONES: Thank you.

CHAIR: Thank you. Ms Barry-Piceno?

MS BARRY-PICENO: Thank you. This is also a question for Dr McLean. This is just in regards to your observation of the lack of reports in relation to health effects of recent times of methyl bromide, and I think this was also picked up by STIMBR in terms of their chemical engineering, so it has evidence. I just wondered if you, in terms of your observations in looking at the reports, have a view to -- similarly in the US there has been a strong push that a lack of data in this area related to issues of race and poverty in the context that the workers that were working with methyl bromide in terms of the EPA's exemptions that it allows for use of methyl bromide with, for example, fruit and vegetables similar to here, related to a part of the population that effectively wasn't a strong cohort that there was a commitment of funds for medical reports or monitoring. Do you consider that that has a relationship to the Port of Tauranga where many of the workers on the port itself are of a lower socioeconomic group or maybe casual workers?

DR MCLEAN: I would have a view on that but I don't think it would be anything other than speculation and quite subjective. My experience is that in the occupational field where there is research done on exposures and health effects it has often been in the past on unionised and very well organised groups, so a lot of the heavy manufacturing, the key industry, that sort of thing.

[9.50 am]

Yes, there is much less research called for, funding applied for and funding granted historically to women, to jobs that have a high female participation and lower socioeconomic, which is tied up with ethnicity and all sorts of things. I think I could say objectively that, yes, there has been a lack of research into groups that don't make a lot of noise. So that is my point about unionised labour in the heavy industries in the UK, Europe and the USA compared to immigrant short-term, like in our situation where we get people in from the Pacific to work in our horticultural sector. It is good for everyone unless they are also being exposed to things. A slightly rambling answer, I'm sorry.

MS BARRY-PICENO: No, that's okay. Thank you.

CHAIR: Thank you. We have a question in writing from Mr Glassey from MPI. I'll read it just so that it is on the record and it is a question for Dr Morgenstern:

"Does the 2018 ozone report mention the effect on the ozone layer recovery of removing QPS methyl bromide from the atmosphere? This might help Dr Belton's question."

DR MORGENSTERN: Offhand I can't remember in detail what it says. I mean, it is clear that if you remove methyl bromide from the atmosphere, as you would if you cut back emissions, you get an impact with delay on the ozone layer. So what we typically do is we weigh bromine versus chlorine. The relatively simple way of doing that is simply multiple the amount of bromine that is cut out by 60. That makes it then comparable, on a per molecule basis, with chlorine. So brominated species are responsible for of the order of 25, 30 per cent of ozone depletion. The remainder is chlorinated species and the reduction in methyl bromide is again a fraction of the brominated species, so you can do the numbers. Whatever we do on this scale is going to be on the percentage scale in terms of impact on the ozone hole because there are players there too that we don't influence here, that we don't discuss here. If we cut bromide emissions in this country, of course internationally it will have a small effect because we are only number 6 in the list of users.

CHAIR: Okay, thank you. A question also from Emanuel from MPI:

"Is there any observation of increased health issues, cancer, motor neurone disease, in people living in Tauranga compared to the rest of New Zealand?"

DR MCLEAN: Is that directed at me?

CHAIR: I don't know.

DR MCLEAN: I don't know either. I've not seen any research into that.

CHAIR: Okay, thank you. Mr Glassey, I've got a note that you may have another question. I don't know if that's the one that I've just asked but please do ask away if you wish, otherwise do any other submitters have any questions? Okay, great. Thank you to the three of you for your submission. We appreciate it and Dr Morgenstern, we look forward to receiving your presentation for posting on the website. There is a slight change of order now. We are trying to reschedule it and Ms Stewart from Horticulture New Zealand needs to leave the hearing by 10.15 am. She was previously scheduled to be on at 9.05 am, so I've rejigged the order again and asked that she is ready to go now.

MR BROWNING: Chairperson, Steffan Browning here. Unfortunately I had mute on there for those questions and I wanted to help in one of the responses to Dr McLean.

[9.55 am]

The agricultural study, an important part of that was the distance from the use area that was included in gathering the statistics was something like 500 metres, I think. Dr McLean might have confirmed that, but it was quite a distance and that is relevant to buffer zones, obviously, for the DMC to be considering. I know I'm now out of time so, thank you.

CHAIR: Thank you for that. Appreciate that and the question wasn't directed at any one of you three so it is appropriate for any of you three to answer. Thank you. Ms Stewart.

SUBMISSION 127591 - HORTICULTURE NEW ZEALAND

LEANNE STEWART PRESENTING

MS STEWART: Thank you. Good morning, everyone. My presentation is very similar to our submission, so just to highlight the main points. The horticulture industry employs approximately 60,000 people, occupies 130,000 hectares of land and provides regional development opportunities across the country. New Zealand growers export their crops to

discerning customers in over 130 countries and we also supply the majority of fresh and processed vegetables to domestic consumers. In order to supply consumers to some export destinations with premium fresh fruit and vegetables growers and exporters require access to various agrichemicals, which are classified by the New Zealand Government as hazardous substances.

Methyl bromide is also critical to the maintenance of New Zealand's biosecurity and this is critical to protect New Zealand from the incursions of pests, which would otherwise cause substantial economic damage and may also bring harm to culturally important flora. Biosecurity provisions using methyl bromide also protect the domestic industry from these incursions

Methyl bromide is an important tool on our export commodities and pathways and it's necessary to retain this in order to comply with our importing country requirements for our export destinations. Some of the pathways where we use methyl bromide include tomatoes and capsicums and peas to Australia, citrus and brassicas to Fiji, potatoes to French Polynesia, apples to Japan, dried peas to the UK. The value of these pathways is over $58 million and loss of these pathways due to the inability of methyl bromide would result in adverse impacts to regional communities in New Zealand where the crops are produced.

Horticulture New Zealand supports the requirement in place to recapture methyl bromide as it is good environmental stewardship. However, we consider this should be in line with what is achievable, being 80 per cent of post-fumigation levels, rather than set at a rate that is unattainable and would significantly negatively impact exports of fresh produce to many markets.

Horticulture New Zealand wishes the Decision-making Committee to consider how the use of methyl bromide by the horticulture industry not only facilitates trade but also protects the domestic industry from potential risk associated with imported goods. The requirement for the removal of this tool or the imposition of recapture controls that are not achievable has significant impacts on the industry and increased biosecurity risk to New Zealand.

Horticulture New Zealand supports the position of recapture controls that are achievable and practical based on the best current available technology. Thank you.

QUESTIONS

CHAIR: Thank you for that. Now to you, Dr Belton.

DR BELTON: Thank you, Ms Stewart, that was a great brief summary there but no questions from me, thank you.

DR PHILLIPS: Thank you, and no questions from me either.

CHAIR: Likewise from me, so thank you for your submission. EPA staff.

MR BAILEY: Thank you for that brief presentation and the submission. A quick question: could you just expand a little bit on the impacts for the regional economy with methyl bromide if the controls as they currently stand and what you think those impacts would be with the changed proposals, so the outcome put in their application form and in their legal submission on Monday?

[10.00 am]

MS STEWART: So I can talk in general to the impacts that we foresee. If there was loss of the tool to actually fumigate to levels that are practical then it means that we would potentially lose access to these markets if we didn't have any alternative treatments to use to manage phytosanitary risk. This means that production would likely be reduced because we don't have anywhere to supply our product, which has further trickledown impacts to regional communities who employ a lot of people to support the production for growers.

MR BAILEY: Thank you, and can I just maybe expand on my question as well. Are there any particular regions where that impact would be felt more severely?

MS STEWART: Yes, certainly. So our primary growing regions are Northland, Auckland, Bay of Plenty, Waikato, Hawkes Bay, Gisborne, Manawatu, Marlborough, Nelson, Canterbury and Central Otago. So most of the growing regions of the country.

MR BAILEY: Thank you. We have no more questions, thank you.

CHAIR: Thank you. Mr Slyfield.

MR SLYFIELD: No questions for STIMBR, thank you, sir.

CHAIR: Thank you. Mr Weiss, Bay of Plenty Regional Council, you have a question.

MR WEISS: Yes, good morning. Thank you. It relates to item 11 and there's a comment there where ...

CHAIR: Back to your sound playing up, Mr Weiss.

MS STEWART: I'm sorry, I didn't hear the question.

MR WEISS: Is that any better?

CHAIR: Thank you.

MR WEISS: Sorry, let me repeat. In item 11 of the submission there's a comment that says there are no protocols which require kiwifruit exports to be treated before it leaves New Zealand. My understanding was that there is a reasonable amount of kiwifruit that is fumigated with methyl bromide pre-export. How does that relate to those protocols and when and how is it decided just what the kiwifruit might be to be fumigated with and when?

MS STEWART: That is probably a more direct question for Zespri to answer but, in general, when product is being sorted and packed for markets, if a quarantine pest is picked up on a line it sometimes can be knocked out of a target market or a treatment can be applied to remediate the pest situation and then the product can be exported to that destination market. So that's most likely the case.

MR WEISS; Okay, thank you.

CHAIR: Thank you. Open up now for any other submitters that have questions to ask. Ms Smith.

MS SMITH: Thank you. I'm just checking, it's Ms Stewart, isn't it?

MS STEWART: Yes.

MS SMITH: Who is it that does the fumigation for the produce that you are concerned with?

MS STEWART: So some of the main fumigation providers -- well, in general, it's Genera.

MS SMITH: Are there any others?

MS STEWART: It depends on the location of the exports going out. So it's dependent on the port that the product is going from and it's a commercial decision who each exporter uses. So, in general, we don't promote one treatment provider over another.

MS SMITH: So in your submission, in what you said here today, is that it's a question of what is achievable as far as recapture is concerned. Where did you get the number as to what was achievable?

MS STEWART: So we've been provided information from Genera on their recapture trials that they've been running. That's the basis of the information that we submitted on.

MS SMITH: So the other -- you said that you don't require using a particular supplier. Have any of those other companies given you a number as to what is achievable?

MS STEWART: No, as that's a commercial decision for which treatment providers are used. That's the only provider that we've received information from.

MS SMITH: Have you asked?

MS STEWART: No.

MS SMITH: Okay, thank you.

CHAIR: Thank you. Any other questions? Okay. Thank you. In navigating around Dr Miller's technology issues we've had a change of order, which I understand Dr Miller's issues have been sorted, which is fantastic. The way forward after morning tea is that we resume with the same order of business, which would be Dr Miller, Mr Beech, Mr Nalder and then, to close out the day, Mr Olsen and others from MPI. If you have a scheduling issue please advise by message to either Ms Quinn from the EPA or me. Given the query that Mr Slyfield raised this morning, I'm not sure that we will have a response but I'd like to ask for 20 minutes for a cup of coffee and ask my colleagues to join me in the briefing room and we'll see whether we're ready to provide you with any response.

That being the case, it's 10.06, let's say 10.07 for log out and so we'll see you back here at 10.27.

ADJOURNED [10.07 am]

RESUMED [10.27 am]

CHAIR: Let's reconvene. Before we go to you, Dr Miller, just to come back to you, Mr Slyfield, we've had a brief discussion and our expectation that your right of reply will be given on Monday and then the Decision-making Committee will decide whether or not it needs to issue directions for more information, obviously during the course of the hearing or during our deliberations.

MR SLYFIELD: Thank you, Mr Chair, I'm obliged for that direction.

CHAIR: Thank you. Dr Miller, let's test your technology.

DR MELANIE MILLER PRESENTING

DR MILLER: Thank you very much for your patience, Mr Chair. Can you hear me now?

CHAIR: Wonderful, go for it.

DR MILLER: Thank you very much and thanks to the staff.

Next slide, please. Thank you. Just to say we're making a submission as individual specialists, not acting on behalf of any company of interest group. I have 20 years' experience of working in the Montreal Protocol. For 20 years I did a lot of work related to methyl bromide assessments, alternatives and strategies, and have helped with the phase-out strategies for many developing countries. However, for the last seven years I've been working on other substances controlled by the Montreal Protocol.

I'm going to just focus on international obligations and best practice. You'll be aware, obviously, the DMC noted that international obligations would be considered. I believe under the HSNO Act best international practices and standards for the safe management of hazardous substances would be taken into account.

[10.30 pm]

Relating to methyl bromide QPS, obviously methyl bromide is a controlled substance under the Montreal Protocol. Whether it's used for QPS or any other use, it is a controlled substance. This puts it in a very special category internationally. It's different to other pesticides in this sense. There are strict reporting requirements that every country has to comply with relating to the quantity manufactured, the amount imported and other things.

There are some other obligations broader. We know it's exempted from the timetable for phasing out methyl bromide, because at the time in 1992 when the timetable was first set, decision-makers believed that there were no alternatives, or very few, to methyl bromide for QPS. There are some obligations in general that apply, the general obligation to take appropriate measures to protect human health and the environment.

One that is particularly pertinent to ozone depletion, the responsibility of states to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states. Our use of methyl bromide for the QPS does contribute to the damage of the ozone layer which causes problems globally. Obviously yesterday another

submitter mentioned the Law of Treaties and that conventions should be interpreted in good faith in the light of their objective and purpose.

Next slide, please. Sorry, I might have missed one. It should be headed "Montreal Protocol decisions re alternatives at this stage", slide 6.

The decisions taken by the Montreal Protocol are generally regarded as good practice guidance or recommendations. In relation to good practice on QPS, there are several decisions that urge or encourage countries to implement, things like refraining from using QPS, using alternatives wherever possible and in cases where QPS is used, to minimise the emissions and use things like containment or recovery, with a key point added that it's until alternatives are available.

A general approach based on the Montreal Protocol experience of reducing about 100 ozone-depleting substances, with millions of different uses, some of them absolutely essential and important for society, that these cumulative decisions have indicated a hierarchy of good practice. Number one is to use, where possible, environmental safe alternatives where technically and economically feasible. The reason for this focus is because it provides a permanent solution to the problem of ozone-depleting substances. As a second plank of the hierarchy, until alternatives are available, as an interim measures, minimise emissions and QPS use by practices such as containment and recapture, et cetera.

Next, like, number 7, please. This accords with the general good practice internationally for handling and dealing with, addressing hazardous substances. The typical hierarchy goes from the most effective at the top, where you're aiming to eliminate use of that substance as much as possible, right down to the bottom where you're moving towards substitution, isolation, engineering controls and other measures to mitigate, but as you go down the list it becomes less effective.

Next slide, 8. If you come back to the Montreal Protocol, although the exemption for QPS exists under the protocol, there are many countries that have chosen not to use this exemption and many are using alternative treatment and procedures. A protocol decision in 2009, 10 years ago, noted that 72 countries had ceased or would cease using QPS by 2010. That has progressed. The situation since 2014 is that between 2014 and the latest reports received, most countries have not consumed QPS methyl bromide since 2014. Among the 40 industrialised countries, only 6 have been consuming it since 2014, that means importing it for use in their country. First USA, second Australia, third New Zealand and a couple more. Among the developing countries it's consumed by 51 of 157 developing countries.

[10.35 pm]

Next slide, please, number 9. New Zealand is the third largest QPS user among industrialised countries. That is out of step with our population size compared to other major-sized countries. It's out of step with our plant-based product, agricultural exports. We're out of step in another way. The Montreal Protocol often looks at trends of how different substances under their control are being used. If you have a look at number 1, the largest industrial country user, the trend line in the USA is a downward one, if you can run your cursor over that. If you move to Australia, number 2, the trend line was up but has now plateaued. It oscillates around that level. Number 3, New Zealand, has an upward trend. Number 4, the fourth largest user in industrialised countries, used almost 3,000 tonnes a year in the past and has greatly reduced it, if you look at that trend line. In the European Union, 27 countries used to use almost 3,000 tonnes per year and phased it out in 2010.

If we look at some examples, a number of countries, including a number of developing countries, have implemented national action plans for reducing QPS use of methyl bromide, reducing their reliance and many actually phasing out. If we look at the EU as an example, they provided a report on this to the Montreal Protocol ten years ago. They had started with things like polluter-pays taxes in some countries, banning or restricting specific QPS uses where they could, disseminating information about alternatives and, as you can see, various other policy measures.

Next slide, 11, please. The trend lines just for some developing countries, just to illustrate that several major developing countries also made substantial efforts to reduce their use of QPS. You can see how they went up to a peak and these countries have come down: China, Thailand, Mexico, Indonesia.

Next slide, please, number 12. There are various international guidelines, like under the International Plant Protection Convention, which my colleague here, Ken Glassey from MPI, is involved with and others in MPI. In 2008 that body adopted a recommendation which had some good-practice suggestions. In particular I'm picking on some of the action steps as an example of best practice, to review and how to change quarantine policies and import requirements, to replace methyl bromide where feasible, using equivalent feasible alternatives where possible, implementing a national strategy.

Next slide, please, number 13. On a different note, some other examples of better or best international practices. Substitution policies for hazardous substances have become commonplace among some of the European countries, particularly the Nordic ones, which tend to lead

the field in these sorts of areas, to avoid the use of hazardous substances if they can be replaced by less hazardous ones. This is a common theme. I won't go through the details, I'm sure you're aware of this information.

Next slide, 14. Dr McLean this morning talked about some of the adverse effects of methyl bromide. Highly acutely toxic by all routes of exposure. I just want to make a comment on that. When deciding controls, it would be appropriate to take account of the best international practices to protect health, as stated earlier in section 64(a). Certainly my colleague and I support larger buffer zones, much larger buffer zones of the order that have been talked earlier this week and very short TELs such as ten minutes, even five minutes.

[10.40 am]

I think the acute toxicity of methyl bromide and chronic problems underscore the need to use less hazardous alternatives where possible. Next slide, please, that is number 15.

Also just a brief note, the applicant did propose a change in the hazard classification for acute inhalation from 6.1(b) to 6.1(c) and we would oppose this. We do not support this. The hazard classification should remain where it stands at 6.1(b).

The Yamano study, that was the original basis for the 6.1(b) was reviewed in detail by the international panel related to chemical safety under the WHO. They made a very detailed assessment involving Japanese and other toxicologists and it has been reviewed by other international bodies. The proposed change, we believe would be inconsistent with the EU classification which actually adopted 302 ppm rate for its LC50.

As you will see from the table and other studies that I am sure your toxicologists looked at, there is a very narrow margin between 0 per cent morality and 100 per cent mortality on exposure to methyl bromide. It is not a big distance, so if you look at the table you've got 10 per cent mortality around 357 and 377 ppm exposure but it only needs to go up to 464 ppm to get 100 per cent mortality. This is in mice which are less sensitive than human children. The US National Toxicology Programme, part of the Department of the Health in the US, did a major review in 1992. They reported the lowest reported lethal concentration in humans around 257 ppm. So changing the classification for acute inhalation would be appropriate. I have more information on that if it is requested but let's move on.

Next slide, please, 16. We can skip that one. Slide 17, please. A brief note on the cost of ozone depletion as discussed by Dr Morgenstern

this morning, we know some of the negative effects on the health and economy, like more cases of skin cancer. It does reduce fish stocks and productivity of fisheries, which is important as an issue for us nationally, it also has negative effects on the growth in some species of conifer seedings and even in certain species of forest trees.

There was a paper in 2009 that cited a couple of reports looking at the benefit cost ratio of eliminating methyl bromide and that was estimated at around 11:1 benefit to cost globally and around 3:1 in the EU. Unfortunately the full cost of ozone depletion impact, it is a difficult thing to take into account but it would be highly desirable to take it into account, at least in some way, if not quantitively at least qualitatively. I hope the DMC may be able to take that on board.

Next slide, please, number 18. We all know that there are very difficult things to balance here. Benefits to biosecurity, which is immensely important, benefits to the export economy also immensely important, but then the strong negatives, health hazards and the strong negatives, the UV impacts from ozone depletion.

One of the problems outlined by other submitters this week is that methyl bromide users themselves do not carry the full cost of methyl bromide use. That cost is externalised, as we know well, to workers, communities in terms of ill health and global UV impacts. I didn't mention it just now but in the paper we submitted we also provided references to many published cases of poisoning due to methyl bromide around the world, even after safety restrictions were introduced.

[10.45 am]

A point to note here that the beneficial effects to New Zealand's economy are not provided really by methyl bromide itself inherently but by its function as an efficient pest control method. So it is not really about methyl bromide, this is about efficient pest control methods that do the same job. Where other methods can provide effective, accepted, affordable control of these quarantine pests, there is absolutely no net benefit from use of methyl bromide.

Next slide, please, 19. So our proposed approach that we would like to put forward for your consideration is to focus on implementing best international practices. This approach would be consistent with things like the hierarchy of control measures for addressing, dealing with, managing hazardous substances which starts with elimination where possible and minimisation as the most effective measures and then moves down the scale as it gets more difficult. Also consistent with the stated purpose of the Ozone and National Ozone Act which the purpose includes to phase out ozone depleting substances as soon as

possible, except for essential uses. Our Ozone Act defers to the definition of essential uses within the Montreal Protocol.

The Montreal Protocol has adopted general essential use criteria and it has been devolved over many years. There is a standard handbook on essential uses and these specify the steps for evaluating and the criteria for evaluating alternatives for specific uses case-by-case, or in some cases there can be, if the applicants prefer, grouped by very similar uses in similar circumstances.

So to date, as far as we are aware, New Zealand QPS uses have not been independently and systematically assessed against any essential use criteria, as you would expect under the stated purpose of the Ozone Act.

Next slide, please, 20. Some more proposals for additional controls. We recognise that it is not feasible in a short space of time to come up with detailed procedures to implement the best international practices as stated in section 63(a) HSNO Act, but it may be feasible for DMC to consider and find some words to say that procedures will be established and to set some general parameters and timelines so that procedures can be set up as soon as possible.

So we would propose establishing procedures to implement the best international practices for substitution policies for hazardous substances, hierarchy of actions, etc, as in some of the examples that we have presented, and to set up a procedure for ongoing and transparent evaluation of the status of alternatives. And to have it as an ongoing thing I think is very important because in 2009 when we first made a submission on the Yamano assessment, at the back end of our submission we included some tables with examples, some examples, just a few really, of alternative treatments that had been approved by importing countries around the world and really those technologies are -- that number of technologies has been extended and there have been many more approvals since that time. We could produce a far, far longer list. There is a lot of information out there that is relevant to our situation and should be analysed in a systematic way.

But what we would propose is working with all stakeholders to develop this procedure and criteria. Working together to evaluate the status of existing and potential alternatives, case-by-case, with a continuous improvement approach. That was mentioned by some speakers such as Don Hammond earlier this week, the importance of things such as continuous improvement.

[10.50 am]

The criteria we propose would be to be agreed by the stakeholders with things like obviously acceptable to the importing country, technically

and economically feasible, suitable for the commodity. Because certain treatments, even methyl bromide can damage certain types of commodities. Suitable for the circumstances to avoid and minimise adverse effects and to identify feasible implementation paths and timetables.

There was one other criteria I think mentioned earlier this week by Don Hammond was which socially acceptable. I think that would be a good addition. But there is a lot of information out there. It would be feasible to set up an online database for complying relevant information and open it up for stakeholders, registered users to submit information and evidence and that could then be, after review, included in the database if found acceptable. But then also another step to establish procedures to ensure that alternatives would be implemented in cases where they are found to meet the criteria.

Next slide, please, 21. So just to outline some of the preliminary steps that could be done for a database of this kind. The requirements of importing countries, they can be divided into three or four different groups but let's stick with three as a starting point. We've been hearing cases like India and logs where the importing country requires methyl bromide only, no other option approved. Obviously on those sort of cases it would need concerted effort via multi-diplomatic routes in order to gain approval. But that has been done in other cases and through the Montreal Protocol, through even the WTO Commission on phytosanitary measures, there are avenues for asking other governments for help when a country is in a difficult situation. I have seen this personally happen time after time in the Montreal Protocol. It is amazing what can be achieved through those kind of diplomatic efforts.

Coming on to the second category in the middle of the slide. There are other countries that allow methyl bromide treatment or they also specify other treatment or procedure that is allowed. In other words, they're allowing exporters options for the treatments that they may use. So the database could categorise these ones.

There's a third category example, importing countries that just require like a performance standard, they say, "We want nil quarantine tests". That's a performance standard. So it allows exporting countries such as New Zealand to use any suitable treatment that meets the standard of nil quarantine pests. There are other categories but I'll move on.

I'm short of time, I'm sorry I've taken up too much time but if we move on to the next slide, 22. So just some examples of the information that's readily available now. I'm not talking about stuff that is inaccessible or has to be pulled out of drawers, most of it is just online. So there are existing -- EPA holds data on specific QPS uses in New Zealand

because the annual reporting forms that are required under the Ozone Act, they actually provide data on individual QPS uses; each one is listed or is supposed to be listed in the Excel spreadsheet. The goods, materials fumigated, the country with import or export, etc, and the amount of MB. This is already in Excel spreadsheets and if you took the last two or three years' data you would get a very good overview of a database of existing QPS uses. Use by use in New Zealand and then you could start to categorise those into different groups and analyse them.

When it comes to imports, approved treatment providers, MPI has provided a very helpful list of approved treatment providers, which provide treatments such as insecticides, various dippings, fungicides, insecticides; you can see the list in the middle of the screen. I won't go into that. In addition, MPI has published its list of approved biosecurity treatments to imports and that allows alternative options for some methyl bromide uses and certainly deserves, as a second step after compiling a basic database, further examination to see -- against the criteria to see whether some of those existing alternative options will be fully feasible against the criteria if they meet the criteria.

[10.55 am]

Then there's potential and in those cases there's actually potential to say okay, then those methyl bromide uses -- the equivalent methyl bromide use for that use can no longer be used.

Moving on, more available information for preliminary screening. When it comes New Zealand exports - sorry that's the next slide, slide 23 - when it comes to New Zealand exports MPI also publishes a very helpful database on importing countries' phytosanitary requirements, which is easily accessible. The phytosanitary requirements of many countries, huge numbers, are published online. It's a (inaudible) really of the WTO and Sanitary and Phytosanitary Agreement and the work of the IPPC on that.

I just pulled up one example, since India exported logs from New Zealand to India has been pulled up and mentioned quite a few times this week. Just on the screen you can see this is India's Plant Quarantine Order, as updated, available online. Logs Pinus species going into India from any country, that would include New Zealand, must be free from the list of pests that are listed in the central column of the table and you'll see in the final column these are the treatments that India has actually authorised or approved for this purpose for Pinus timber logs.

The first treatment is methyl bromide or heat treatment at 56C for 30 minutes but that has to reach the core temperature of the wood. I have

not looked into this and defer to experts such as Dr Armstrong, who I'm sure is very familiar with the dual heating process that is under development. I do not know whether that would be a relevant treatment but it shows at minimum that India has acknowledged that heat treatment of wood can fulfil functions under certain conditions. With the quarantine pests being largely on the external part of the wood of whole logs it's not inconceivable that India might be perhaps persuaded that a heat treatment that does not go right to the core of that temperature might be sufficient, but I leave that to the expert.

But you'll see there's a third option here, clearly stated by India, that the third option is:

"By any other fumigant/substance in the manner approved by the Plant Protection Advisor for the purpose as the case may be ..."

And so on. So this certainly states in writing that India is open to other options and I know from my own experience that there are diplomatic routes that can be followed to help one country resolve another country's problem.

I will just, if it's okay, leave my presentation there. Thank you, Mr Chair, and I apologise for the technical problems earlier today.

QUESTIONS

CHAIR: No worries, thank you. Thank you for your submission. We'll go to Dr Phillips for questions.

DR PHILLIPS: Thank you for your very considered submission. It's certainly food for thought. I don't actually have any questions, thanks.

CHAIR: Thank you. Dr Belton.

DR BELTON: Thank you, Dr Miller, I agree, a very thoughtful and thought-provoking submission. Much of it is outside of the scope of this Committee and my question probably is too, so just a very short answer from you, if that's possible. The continuous improvement process you suggested, who would you suggest or which agency would you suggest leads that?

[11.00 am]

DR MILLER: I would suggest that EPA, in my view, could be the most appropriate because they do have experience already of the detailed assessment of hazardous substances with a view to placing controls on them of the kind that I'm suggesting.

DR BELTON: Okay, thank you.

DR MILLER: May I add another point? If I may say, I think that a number of points I've made would be relevant to your current discussions if you might consider because when the DMC in 2008 determined that grounds existed for a reassessment their decision, I believe, noted that international obligations would be considered. That's quoted on the actual quote from that report.

From slide 4, I quoted from that report and moreover the HASNO Act, section 63(a) for the modified reassessment procedure, which I understand we are following, actually refers to taking into account the best international practices and standards of the safe management of hazardous substances. That's on my slide 4.

So I think that there would be scope, that is my understanding that there would be scope for the DMC to take some of these concepts on board if they decide it's appropriate.

DR BELTON: Certainly I think we are taking into account our international obligations. Obviously we are not going to be part of a longer-term process, the continuing improvement project that you described, so that was the reason for that question. No more questions, thank you, Chair.

CHAIR: Thank you, Dr Miller, a couple from me. Your initial submission was dated 2010. Is that intended for this reassessment application or has it been replaced by your evidence of July?

DR MILLER: Due to other work pressures I've had no time, zero time, in which to make a submission so I resubmitted a submission we made in 2010 because there is a lot of information there in relation to the costs associated with methyl bromide and alternatives, which I believe is still relevant to the discussion of whether or not the current controls on recapture, whether or not it would be appropriate to change them and the manner in which they might be changed. Because if the whole focus remains only on recapture that is a very useful measure because it reduces the hazards to humans and the environment but it does not provide a permanent solution. That is why the focus in many countries has been placed on finding permanent solutions and working out ways in which to achieve that.

CHAIR: Thank you. In that case, in your original submission you referred to agency and I couldn't find what agency you were referring to. So are you able to --

DR MILLER: That would have been my mistake. I was referring to ERMA at that time and so at this time it would be EPA. I apologise.

CHAIR: No, that's fine. I wondered if it was but I didn't want to assume. Your submission refers to the EU context and we have heard over the hearing and in the evidence provided the difficulties scaling up alternatives of recapture technology due to the sizing of log fumigations or in a manner that is acceptable to trading partners. I am curious as to whether you have any comment on how the EU context fits the New Zealand context or, alternatively, if you feel you have covered it sufficiently in your 27 July evidence?

[11.05 am]

DR MILLER: If you are happy for me to refer to slide 10 in my presentation today. The EU carried a number of efforts and activities and individual countries within the EU started quite early on that process. A number of different activities that really supported the development and use of alternatives wherever they could. While some countries -- I am so sorry, I have lost track of the actual question you were asking. Forgive me, could you re-ask your question?

CHAIR: Yes, sure. The graph you presented on EU methyl bromide use compared to New Zealand is stark in comparison, there is a stark difference so I am curious as to how the EU context can be applied in your view to the New Zealand context.

DR MILLER: Thank you, yes, now I understand. The general context is that the EU had a very active programme which focused on alternatives and finding alternatives where possible rather than, I would say, the quite strong focus that has been placed on the capture here in New Zealand. So the types of activities that were adopted in the EU, even in the 1990s in some countries, was to do things like placing polluter pays taxes on methyl bromide. Obviously STIMBR and so on have already placed a levy on methyl bromide users and that is a step forward.

There were several countries that actually made very detailed evaluations of their uses at an early stage, use by use, and they either banned or restricted specific uses where alternatives were found. They also disseminated a lot of information about alternatives that could be used to industry at stakeholders meetings, they held conferences, there were a number of major international conferences, and a large number of stakeholder meetings within countries. Some companies adopted voluntary policies to avoid methyl bromide use and switch to alternatives. They provided - what's the word - lighthouse examples for other companies in the industry. There are some EU countries that took those leading companies as examples and published case studies. There are quite a lot of case studies published. Information about the technical aspects of those alternatives and the cost aspects. That helped to, again, inform industry about other things that were available.

On the regulatory side the EU regulation around 2000 placed an actual quantitative limit on the tonnage of QPS methyl bromide that was allowed to be used from 2001 onwards. They also required very detailed annual reports on the progress in evaluating and using alternatives from each member country of the EU. I can show you a copy of that or submit it if you are interested in seeing the elements of that report.

They carried out some very detailed reviews of QPS uses and identified alternatives at European Commission level and there were a lot of discussions between the 27 member states. Then in 2009 when most QPS uses had already shifted, as you can see in that graph, there was a major review of methyl bromide as a pesticide. Methyl bromide failed the criteria for reapproving it as a pesticide.

Shortly after that the ozone regulation prohibited all uses of methyl bromide from 2010 onwards. That is when it ceased entirely. So methyl bromide has not been allowed since that date.

CHAIR: Thank you. Last question from me. If we could go to page 4, slide 14, of your presentation. If you wouldn't mind covering again what you talked about here, acute toxicity levels at 6.1(b) or remaining at 6.1(b) as opposed to the 6.1(c) recommended in the EPA staff report. If you wouldn't mind just talking me through that again, please?

[11.10 am]

DR MILLER: We believe that it would be appropriate for it to remain -- this is the acute inhalation, to remain at 6.1(b) as it is at present, which was based on the 405 ppm study for four hours in mice by Yamano in 1991. My memory is that the applicant requested the change or proposed the change because they felt that the Yamano study was ambiguous. My colleague and I do not share that opinion. The Yamano study we have cited, we have got a copy of the study so we have read it, and was reviewed in detail by the IPCS, which is an international WHO body that reviews chemical safety and they have international toxicologists from major countries, including Japan. It has also been reviewed by other international bodies and reported on in those reports. We believe that the proposed change would be inconsistent with the EU classification because the EU sets the LC50, that is the concentration at which 50 per cent of the test animals die. They set that figure, the LC50, at 302 ppm for eight hours. That also appears to be a very appropriate order of magnitude, 302, because the morality in that same study actually occurred around 400 ppm.

Now, this was for eight hours and I believe in New Zealand the normal hazard classification is normally based on a four hour study. Nevertheless, it is indicative of the EU concern, I would say, about

methyl bromide's acute toxicity that they chose to use eight hour instead of four hour.

Now, there is also a very narrow margin of safety. Actually if you go to the next slide, the next slide shows the Yamano study, number A, the graph on the left. Yamano actually did three different studies within one paper, which is probably the reason why the applicant found it ambiguous or confusing. There were three different studies published within one paper and this just shows two of the studies. The first study was looking at the impact of methyl bromide for four hours at several different concentrations. About five different concentrations. Then the second one, graph B, flipped it around and again it looked at -- it held steady at 500 ppm and then looked at different durations of time with exposure up to three hours. A massive time period unfortunately so you can't get the direct comparison. Nevertheless graph A on the left, you will see from that, the vertical axis shows mortality from o to 100 per cent and if you take the 50 per cent, the blue line across the middle, that corresponds with the concentration of that 400 ppm. So that was the basis of which Yamano et al recommended around 400 ppm with a 95 per cent confidence interval, which I think is shown on the table above.

I am sorry I have probably said more than you wanted to hear.

CHAIR: Yes, I think it is something I need to listen to again but thank you very much. Those are the last questions from me. We will now go to the EPA team.

[11.15 am]

MR DEBBLE: Thanks, we have no questions, thank you.

CHAIR: Thank you. Mr Slyfield?

MR SLYFIELD: No questions from STIMBR, thank you, sir.

CHAIR: Mr Glassey from MPI, you had a question?

MR GLASSEY: Thanks, Chair. It relates to your question about the EU. Mōrena, Melanie and I assume Tom is there too. Good morning.

DR MILLER: No, it is just me today. Hello.

MR GLASSEY: A couple of related questions. What are the fumigants of choice in Europe currently?

DR MILLER: I'm not up to date with that, Ken. Tom is the one who could tell you that. I'm sorry, he's just not available, he's on another business at the moment. We can submit something in writing if that would help.

MR GLASSEY: My understanding is that the fumigant of choice in Europe is sulfuryl fluoride, which is being used to treat the bark-beetle-devastated forest that they're harvesting and exporting by the trainload to China. They're being treated with sulfuric fluoride, which we don't have registered in New Zealand. Can you tell me what the global warming potential is of sulfuryl fluoride?

DR MILLER: Yes. As you know, it's extremely high and it's not considered good practice to be using that particular chemical, from the perspective of the global attempt to reduce our greenhouse gas emissions. I do know that the European Commission has a major paper on --

MR GLASSEY: I can text you my email.

DR MILLER: Thank you. There is a paper on log treatments in the EU that was produced by the European Commission. That could be made available to you if useful.

CHAIR: Thank you. Mr Glassey, we appreciate that question, it's just out of scope of the work that's before us. Do you have any further questions?

MR GLASSEY: No, thank you, Chair.

CHAIR: Thank you. Anybody else with any questions, any other submitters?

MS BARRY-PICENO: Yes, sir, I do. Sorry, I didn't put my hand up. It's Ms Barry-Piceno here for TMFAG.

CHAIR: Go ahead.

MS BARRY-PICENO: Thank you. Dr Miller, I was interested in your slide where you talked about a way forward in terms of stakeholders and weighting of priorities. Whilst I accept that it may be considered by the Committee outside their jurisdiction, I think in the context of looking at the broader picture here it seemed to me, in reading that slide of a range of priorities that were put forward, that there was a number of the cost benefits that were what I would consider your subjective values, relating, for example, to socially acceptable as opposed to what is normally considered to a harder or easily able to be ascertained values in that context of cost benefits.

I just wondered if you had a view, if there was that type of assessment, how you would see that being able to be balanced, either by the stakeholders themselves or by a committee such as this one if it was an

overall determining body. I guess the clarification that I seek there is would you accept that there needs to be environmental bottom lines around any look at those appropriate types of uses and what's acceptable?

DR MILLER: Yes, I would accept that there needs to be an environmental bottom line, for sure. If we're thinking about the long-term welfare of New Zealand socially and economically, the environment has to be catered for and given higher priority. Environmental bottom lines are important.

I think when it comes to how stakeholders could have a fair input, given that they have very few resources sometimes compared to industry representatives, that would require some further consideration. But one can learn probably, one can always learn, from experience in other countries or other areas in New Zealand where similar difficult balancing acts need to be made, but within clearly set parameters, with the aim of moving forward to protect the environment and human health, as well as balancing the other factors. I'm sorry, that probably doesn't really answer your question.

[11.20 pm]

MS BARRY-PICENO: No, no, it does. My second question is, accepting that your primary focus is looking at the phasing out of methyl bromide altogether, that the strong concentration by a number of submitters at this point has been focusing on recapture as the best practical option at this point to manage methyl bromide in the interim, in that regard, with the logging industry's practice around use of methyl bromide to treat logs under tarps or in ship holds, is that a practice that you have seen or know of being used in other developed countries to the extent it is in New Zealand?

CHAIR: Dr Miller, could I just ask you to change the way you're talking, before you respond, or move closer or speak louder or something? You went quiet over the last two responses.

DR MILLER: I do apologise. Is this better?

CHAIR: Slightly, but I am deaf, so you carry on.

DR MILLER: I've got a quiet voice, I'm sorry. I'll try to speak up. I have visited many countries that use methyl bromide and was very involved in assessing alternatives for the non-QPS uses in particular. In that capacity I visited a number of different countries. Among the industrialised countries, I have never seen very large volumes of a toxic gas like methyl bromide being used in a place like a port right next to offices and other workers and residences and people just going about

their normal day-to-day business. I have never seen that. It may exist but I kind of doubt that any other country would be using such huge volumes of methyl bromide in single locations.

In my understanding, the latest report is that New Zealand was using, I think, 660 tonnes of methyl bromide reported last year. If one-third of that is being used in Tauranga, 200 tonnes, that means, being released in one location, if 50 per cent is used in Tauranga, 300 tonnes in one location during a year and in short, concentrated segments, plumes and so on, as the experts earlier this week were demonstrating, I think it is a major concern. I have not seen or heard of methyl bromide being used in that way in other industrialised countries.

MS BARRY-PICENO: Thank you, those are my questions, thanks.

CHAIR: Thank you. Any other questions? Dr Miller, thank you for your time today. We appreciate your submission and for your persistence as we navigate through the technology. Thank you.

DR MILLER: Thank you.

CHAIR: Mr Beech from Guardians of the Sounds. I understand that you're with us by phone. Hopefully you can hear me. If you want to start talking, we'll see if we can hear you.

SUBMISSION 127542 - GUARDIANS OF THE SOUNDS

PETER BEECH PRESENTING

MR BEECH: Kia ora, can you hear me okay?

CHAIR: Wonderful, thank you.

MR BEECH: Very good. You'd like me to start my submission now?

CHAIR: Please, if you would, I'd appreciate it.

MR BEECH: Very good. Kia ora koutou. Thank you for the opportunity to address your Committee. The basis of this submission is a question that I'd like you to think about before you make your decision. What do we do, as affected communities, when the breakdown truck breaks down?

[11.25 pm]

Firstly, let me recap Picton's fatal experience with the effects of log fumigation using methyl bromide treatment. Log fumigation using methyl bromide with 100 per cent released to atmosphere was stopped in the Port of Nelson after the widows of Port Nelson wharfies led a

campaign against its use, believing it to be the cause of their husbands' death. A bylaw was promulgated stating that methyl bromide could only be used if the fumigation were carried out in a closed shed with 100 per cent recapture. The industry wasn't prepared to fund that, so moved their fumigation process and log export to the Port of Picton, 100 miles away, where no such bylaw existed. The Guardians of the Sounds were warned by the people who had campaigned against its use in Nelson. We were immediately on our guard because we had experienced a similar problem with a local port company exporting coal.

In Picton we get atmospheric conditions that we call a low inversion layer, or low cover, where the clouds are that low you can't see the tops of the hills surrounding the port. This occurs around many of our nation's ports. This is known as anticyclone or high atmospheric pressure system. It occurs both summer and winter. When released coal dust or methyl bromide will rise. However, the inversion layer forces it down and, being heavier than air, it settles. After a shipment of coal had been loaded aboard ship, the whole port area and town was covered in striking black coal dust. It covered everything and if you didn't wash it off it corroded paintwork on cars and boats, clothes hanging on lines had to be rewashed. You could smell it. I was working in a local boatyard. Every morning we'd have to go out and wash all the boats down so that the paint didn't corrode. We went to the media about it. The yard was a leasehold property. The land was owned by the local port company. They sent a gang of men down and chained our gate shut and hung a closed notice on our gate, mafia tactics. The resulting uproar saw the CEO of the port company replaced and the export of coal from Picton was stopped.

So when the Nelson folk warned us about their experience with methyl bromide, we took this very seriously. It started with people working in industries around the port complaining about bad headaches following fumigations. Then people who already had respiratory issues like asthma and bronchitis found that their conditions intensified at times following fumigation. Eventually we got letters of support from local GPs who were very concerned about this and called for the end of its use. We had send numerous letters to the Ministry of Health who had offices in Nelson and knew all about the issue. For five years they adamantly refused to meet with the Picton community. This was obviously because their Minister had told them to back off. We tried to get Fonterra to put a stenching agent in the gas so people would know when they were being poisoned, like they do with LPG, but to no avail and the EPA also ignored these pleas. Why did the EPA not address this issue in the reassessment?

[11.30 am]

It should be a basic human right to be able to breathe clean air, especially in a work environment. If a poisonous toxic neurotoxin that is known to be carcinogenic is being used that is colourless and odourless, then the most basic safety precaution should be to put a stenching agent in the gas. We tried to negotiate a safety plan with the local port company to make conditions safer for workers, like don't fumigate when there is a low inversion layer or when there are strong winds that would dislodge covers and carry the gas over the town, delaying loading for a length of time after fumigation, etc. But all they did was fob us off. They wouldn't even meet with us, saying that these conditions would just delay sailings and the port would lose money. So they consulted, only via email, but implemented nothing and the local council that is based in Blenheim, a town 20 miles from here, they also refused for a long time to do air quality monitoring. The Nelson campaign discovered that a concentrated plume of methyl bromide would travel for 10 kilometres, so from that we knew that increased exclusion zones would not solve the problem.

Then port workers started dying of cancer. My uncle was a night watchman and he used to work on the wharf. He used to try and stop the fumigation covers blowing off in strong winds. A fit, strong, healthy man, he developed melanoma and died within three months of a brain tumour. He was only 63 years old, the patriarch of our whānau, a wonderful man and we all miss him terribly. Then the first log loader died of cancer. He was a great guy, a real character. Then my mate put his hand up for the job. I tried to dissuade him. He said, "Thanks for your concern, mate, but it's a good job and I need the money". He also died of cancer, only in his 50s, never got to see his beautiful mokopuna. The next replacement driver was very critical of us and our campaign. He said, "You keep this up and we will lose our jobs". Well, not only did he lose his job, he also lost his life from cancer. Then a tug master and an engineer working on the deck of a tugboat at Port Shakespeare in the log port were enveloped in a plume of methyl bromide. They both suffered vomiting and nausea. Within three years both of them died of cancer, both in their 50s. Ross had worked so hard to build his very successful barging business, barging logs for the forestry industry. Then Tommy, an exceptional gifted fitter and turner, who liked to help out his mates, liked to share his knowledge. He had studied hard and become a chief engineer on offshore fishing boats. These men are sorely missed by our small community, their friends and families.

CHAIR: Take a moment, Mr Beech, if you need to.

[11.35 am]

MR BEECH: A port company civil engineer and port company worker were on the wharf one day when a cover peeled off. The worker ran to secure it.

While he was struggling with it, his boss rushed up to him and said, "Get the hell out of here. Get away from that stuff. It's a deadly neurotoxin. It'll kill you". He secured the covers. Within a short time that civil engineer, who also lived in one of the port company houses in Port Shakespeare, died of cancer and the worker who was with him on that day developed prostate cancer in his mid-40s.

Then the crunch came. The man who was the port company safety officer wrote to me. He said it was his job to keep me at a distance. He said he no longer worked for the port. He said him and his wife lived in the log port at Shakespeare Bay where there were four houses, three of them port company staff houses. His young wife developed cancer and died very quickly. Then he developed prostate cancer. He chose to return to England for treatment but sent this letter because he wanted to inform me that seven people had either died or developed cancer in those three staff houses in Shakespeare Bay adjacent to the log port.

The Marlborough port company were terribly compromised. They not only owned the port company but were the third biggest forestry owners in Marlborough. They also refused to address the issue of a clean air bylaw to stop release to atmosphere of methyl bromide over our town and, of course, they owned the port company. So for the first time in the history of our town three busloads of protestors, three 40-seater buses, travelled the 20 miles through to Blenheim to the next full council meeting. There was standing room only in the debating chamber. There was an absolute uproar when they refused us speaking rights. We accused the port company of criminal negligence. They knew that methyl bromide was causing these deaths and they did nothing.

The next thing we knew, the fumigations were stopped in Picton. No reasons were given. No apologies were made to the families of workers who got sick and died as a result. It just stopped and the problem was shifted to another port and other unsuspecting workers and communities placed in peril. The reassessment gave the industry ten years to develop recapture but in this whole time industry has done nothing. Why is this? Now, your Committee or the EPA has given them a six-month extension.

[11.40 am]

After ten years they give them a six-month extension. I asked the question: will they have recapture ready in six months' time? I have been an environmental advocate for 30 years, through bitter experience I know the system, to a degree, having dealt with local, central government, government agencies, corporations and companies. I have been involved with countless resource consent hearings,

Environment Court cases, EPA and national significant issues. However, I have never seen such a blatant case of corporate political conspiracy as this EPA reassessment.

To have the conditions of a reassessment reversed before they have even been implemented would surely be illegal if it wasn't for the fact they make up their own laws to suit, or get you to. It is obvious to us now that the ten year respite given to the industry was just a ruse to fob off and defuse community anger. It certainly looks to the public as if the EPA conspired with industry to do nothing, with a behind closed doors promise to return to status quo before the ten years was up. Why else would this huge wealthy industry do nothing tangible to develop recapture equipment after being ordered to do so by the EPA, with the extremely generous 10 year timeframe.

Interesting that you refuse to allow Whareroa Marae to make a late submission. That should infuriate Ngāi te Rangi. My wife is from Mt Maunganui. Her father and brother are wharfies and young cousins that worked as fumigators. Most Māori males at the Mount work on the wharf in some capacity and they are affiliated to all the dozen or so marae, all the whānau have kaumatūa or mokopuna living at or attending Whareroa. They, as you know, are very concerned about their marae being affected by toxins from local industry.

I can only speak about our area. Here local marae and whānau hapū groups have become very disenchanted with their own iwi trust boards who government look to represent the local iwi interests. However, these trusts are the iwi's commercial arms and although they have trustees from local whānau hapū their kaupapa inevitability puts the interests of their commercial interests ahead of whānau hapū, their commitment to kaitiakitanga and the natural world, along with protecting and preserving their social structures.

I don't know about their local politics but suspect the Ngāi te Rangi Trust Board have commercial forestry interests. Is this why Whareroa belatedly decided to make their own submission based on adverse effects to their marae whānau from methyl bromide fumigation?

I have experienced that before with the EPA. When the judge just off-hand refused to allow a very important influential submitter to speak.

[11.45 am]

Even one who was on the schedule. In this instance I had paid out of my own pocket for this speaker to fly down from Tauranga. Remember that all the export ports are also very densely populated areas and some of our country's top tourism destinations. It is absolutely untenable for you to allow this deadly neuro toxin to be released over these

communities. If the industry can't guarantee 100 per cent recapture then fumigations need to be carried out in the country, 10 kilometres away from populated areas.

I hesitate to say fumigate on ships or at the port of destination because you are just shifting the problem on to other defenceless workers, yet this is what the New Zealand forestry industry will do to evade having to develop 100 per cent recapture facilities. If your decision is appealed to the High Court it will come down to interpretation of words and I find the words used by the EPA staff report interesting. Words like "moderate". Moderate risk to human health. How moderate is death? Words like "negligible risks to the environment". Methyl bromide is carcinogenic. It attaches to free radicals in your body. Its effects are cumulative and causes cancer. It is heavier than air. It drifts for 10 kilometres, is ozone depleting and being heavier than air ultimately always ends up on the whenua and then is washed into the moana to impact on our marine ecosystem.

New Zealand has an international responsibility under the Montreal Protocol to stop its release to atmosphere. It should have been significantly reduced at the very least. Question: what has been the increase in export log tonnage over the last ten years and how much more methyl bromide is now being used in relation to ten years ago? What profits have been made and what percentage of those profits have been channelled into research and development?

It stands to reason that because of the increased tonnage that instead of being reduced the amount of methyl bromide now will be significantly more, which is the contrary to the Montreal Protocol.

The words "health risks mitigated with controls". Again, there is no staunching agent and no recapture. Words "benefits of continued use of gas were significant". 80 per cent recapture by 2022, 95 per cent by 2037.

CHAIR: Mr Beech, we have read this information already so, respectfully, there is no benefit to this process by you repeating what is in there. I am just curious as to how much more time you have to speak.

[11.50 am]

MR BEECH: I have about another five minutes.

CHAIR: I will allow that. Thank you.

MR BEECH: So after ten years of doing nothing the EPA now want to give them another 17 years' grace. What about the workers who you know are

going to die during the next 17 years? This is government endorsed genocide.

I heard this morning that STIMBR wished to reduce the 80 per cent recapture level down to 30 per cent. They must be feeling very secure and confident with their relationship with the EPA. Why is it that the EPA staff report only talks about the positive economic benefits and mentions none of the negative health, safety, cultural and environmental issues? Is the staff paid by government or by the forestry industry?

If you look up the records of the reassessment hearing held in Picton ten years ago, you will find a submission by an owner of an American company who flew to New Zealand to make a submission and offered to build a facility to recapture methyl bromide. They had working models back in the States. I don't believe industry who say that the technology doesn't exist. They say they have spent $17 million researching this. That's an awful lot of cabbage. It looks to me as if they must have spent most of their budget on contributions to political party campaign funds just like the fishing industry did with New Zealand First, which worked out well for them. If the technology doesn't exist then pay for research and development. I'm sure there would be engineering companies who would revel in a challenge like that.

Industry says the recapture technology doesn't exist. What about Nordiko? Don't they use recapture containers around the ports? Surely this could be scaled up.

The other issue that worries me is that this is all about methyl bromide. If you insist on recapture, industry will just change to use of another gas just as deadly. This assessment needs to cover all log fumigants.

So to my initial question: what do affected communities do when the breakdown truck breaks down? The EPA is the breakdown truck. If you don't insist on recapture they will have broken down and failed our communities. There are only two ways forward. One is to get a new truck, which means they have collectively failed to protect the health and safety of affected communities. They will have neglected their duty of care and betrayed the people's trust. The community should ignore the EPA and protest; protest local government and port companies. We need men and women of honour and integrity. Not industry puppets.

The second option is to ignore the office as being totally corrupt and complicit in an unholy marriage between industry and state and implement protest action, like what happened in both Nelson and Picton. Here we were able to keep a handle on civil behaviour but the

danger is that there are always radical elements that want to use anarchy to burn, break down and destroy. That is the danger in what the EPA are doing. Their duplicity and lack of leadership will lead communities to use unlawful measures to protect their whānau.

The public know that there is corruption at the heart of this. Your community need to look hard at EPA's complicity. Your mana is at stake here.

[11.55 am]

Your honesty, integrity and honour. Once your reputation has been stained by corruption you can never wash it off. For ten years the New Zealand public has been led to believe we would have --

CHAIR: One minute, Mr Beech. One minute.

MR BEECH: All right. Unless recaptured. Stay the course, stay true to that kaupapa. If you return, the fumigation of methyl bromide would release to the atmosphere, more innocent workers will die. This is a classic example of corrupt corporate capitalism putting industry and profits ahead of workers' lives. Your reputations and futures will be judged on this decision.

As a community we, after ten years, still mourn the loss of our family and friends who died needlessly from methyl bromide poisoning. You must stop this needless loss of life. Kia ora.

CHAIR: Kia ora. Thank you for your submission, Mr Beech. Just to clarify something. Neither I or my colleagues in the Decision-making Committee, nor the EPA, will be commenting on defending the actions of the EPA. I also want to acknowledge, by the way, the emotion and the touching initial part of your presentation about your colleagues and your friends. I do acknowledge that.

Back into the process. Dr Belton, do you have any questions?

DR BELTON: Thank you, Chair. No, just to acknowledge the sincerity of the submission. I've got no questions, thank you.

CHAIR: Thank you. Dr Phillips.

DR PHILLIPS: Yes, likewise, thank you for your impassioned submission but I don't have any questions.

CHAIR: Thank you. EPA team?

MR BAILEY: We have no questions, thank you.

CHAIR: Thank you. Mr Slyfield.

MR SLYFIELD: None from STIMBR, thank you, sir.

CHAIR: Thank you. Any submitters have any questions for Mr Beech? Okay, Mr Beech, thank you for your time today. We appreciate that.

MR BEECH: Very good, thank you. Over and out.

SUBMISSION 127587 - NEW ZEALAND FRESH PRODUCE IMPORTERS ASSOCIATION

KEVIN NALDER PRESENTING

CHAIR: Now moving on to Mr Nalder from the New Zealand Fresh Produce Importers Association. Mr Nalder, in your hands.

MR NALDER: Good morning, am I online?

CHAIR: You are, thank you.

MR NALDER: Thank you for the opportunity to submit this morning. That's a bit of a hard submission to follow but I'll do my best to put some context in a fresh produce imports context.

The organisation I represent is an industry forum representing fresh produce importers, that includes two supermarket chains: Countdown and Food Stuffs. Our members account for around 98 per cent of fresh produce imports by volume and value. That includes mainly to help supply niche markets such as Otara markets and church groups, supply to cruise liners, hospitality, airlines and also some re-exports. That includes to Pacific Island countries.

The scope includes modern countries, effectively an A to Z of countries that we import from. I'll quickly go through those just for your benefit. We import from Australia, China, Chile, Cook Islands, Ecuador, Fiji, Holland, Italy, India, Kenya, Mexico, Malaysia, New Caledonia, Panama, Peru, Philippines, Samoa, South Africa, Tonga, Thailand, Tokelau, Vanuatu, Vietnam, USA, Zimbabwe, Zambia. That's the scope of where we import from.

Major commodities, again it's a bit of an A to Z. I'll go through that quickly because it's important in terms of context: apples, bananas, beans, broccoli, breadfruit, chillies, cherries, carrots, cucumber, corn, dragon fruit, eggplants, grapes, garlic, honeydew melons, jackfruit, kiwifruit, limes, lemons, lychee, lettuce leaves of many kind, mangoes, mandarins, nectarines, peaches, plums, pluot, pomegranates, papaya,

pineapples, plantain, pumpkin, rock melons, sugar snap peas, snow snaps, strawberries, squash, taro, watermelons, yams and zucchini.

[12.00 pm]

So we're a little bit different to logs in that sort of context. It's a 7 day a week, 365 day a year business. The main commodities are bananas, grapes; by example, New Zealand does not have a table grape industry. So we have a year-round import of around 2 million cartons from Australia, Chile, Mexico, USA and Peru. Grapes is a good example. We're in the middle of the US season. In the Covid situation the pre-shipment inspection officers that we normally have in California of course cannot travel. So our pre-shipment inspection option is not on the table. In a methyl bromide example is an on-arrival option, contingency option, that's very important to maintain that trade and many, many others.

I mentioned in our submission around the importance to the Pacific Island trade situation and the flow-on effects culturally and for dietary needs. For example, taro, some of you will be aware of, is a major food type for the Pacific Island community and it's a major import earner for their communities, their economy. Monies flow back right to the community level from that trade and other. So that trade's not very big in New Zealand terms, around 15 to 20 million, but in the Pacific Island context that is very, very important. The flow-on importance to the Pacific Island community is very significant.

So taro is one of many commodities we import out of the Pacific Island, albeit on a relatively small scale but it is small and often. That is one of the major differences with the methyl bromide use pattern for fresh produce imports in that it's not anywhere near the scale of logs. The methodology of delivery is different. The ability to recapture is more real in a commercial sense, however the current proposed standard would be nigh impossible for the fresh produce sector. Accordingly we would support either an exemption or the recent STIMBR proposal for reduced level that is practical and commercially viable to achieve. Similarly, we would support differentiation of commodities around use patterns and importance. The use of methyl bromide as an on-arrival contingency treatment is critical for the guaranteed supply of many country crop combinations that I read out before. It's a longstanding and recognised treatment that is generic across many commodities and pests. There was some talk of alternatives in previous submissions. Of course, the association and its members support many pre-export treatments. However, as an on-arrival contingency option there is nothing that could replace methyl bromide nor are there many alternatives. In fact, the alternative to reship or destroy product is untenable for many, many pathways. As you would imagine, reshipping produce or destroying produce on a commercial scale is a

very expensive exercise and suppliers aren't very keen to supply under that sort of scenario.

[12.05 pm]

So we estimate that for fresh produce in general it's less than 1 per cent of the total use. Fresh produce imports would be a fraction of that. So in total we're a small player, very smaller player but across multiple treatments, across multiple commodities, across multiple countries. Imports of fresh produce contribute to not only economic outcomes but important health and cultural wellbeing outcomes. You'll be aware of the five-plus a day programme that has been promoted in New Zealand for a number of years. If we took fresh produce out of that equation, it would be extremely difficult to maintain a five-plus a day programme in New Zealand for 12 months of the year. Similarly, promotions around "eat your colours" would be extremely difficult to meet any of those key health messages and flow-on impacts into the consumer wellbeing.

We note that again in context even a high relative recapture rate or percentage implemented for fresh produce would have a relatively low overall impact on total emissions. For example, if you compare fresh produce usage with logs, it's miniscule. So, again, we support some recapture, albeit it must be commercially viable, based on science and practical to implement.

I'll leave it there, Mr Chair, for any questions. Short and sharp just before lunch is probably what we're looking for. So I'll leave it there and open up for questions.

QUESTIONS

CHAIR: Thank you for that, Mr Nalder. Dr Phillips, any questions?

DR PHILLIPS: Thank you, Mr Nalder. I just wanted to pick up, I missed it. You said something about you supported a differential approach. I wasn't quite sure what you meant by that. When you were talking about basically supporting a reduced recapture approach, you said something about a differential approach. I thought maybe you were talking about that maybe some crops wouldn't need fumigation. I'm not sure.

MR NALDER: A differentiated approach.

DR PHILLIPS: Differentiated. That's the word, yes. What do you mean by that?

MR NALDER: Separating different sectors and different use patterns. For example, almost all of the focus has been on logs in terms of the volumes and, of course, the application. So differentiating logs from fresh produce, for

example, and having a focused and targeted recapture target within each sector may be a way of cutting the pie and relooking at the problem.

DR PHILLIPS: Is your logic behind that the fact that the fresh produce sector, relatively speaking, contributes very little or uses very little methyl bromide in comparison to logs?

MR NALDER: Correct. So, by way of example, it doesn't really matter what factor we use but if we use 30 per cent or 50 per cent recapture in the log industry, if one log stack had a 30 per cent recapture that is probably the total usage of fresh produce for five years.

DR PHILLIPS: Okay, thanks. That's all I have.

CHAIR: Thank you. Dr Belton?

DR BELTON: Thanks, Chair, and thanks, Mr Nalder, but no further questions from me.

CHAIR: Likewise, no questions from me, thank you. EPA team?

MR BAILEY: We heard yesterday examples where recapture on fresh produce could be done potentially in a couple of hours. Is that something that for the produce you and your members import would be acceptable?

MR NALDER: Yes. In the number of hours, the short answer is yes, but to get it down to 5 parts per million would take days, potentially many days for some commodities. Of course, again it is a different pathway to logs because we've got a cool chain situation. We have got perishable produce and other supply chain issues around moving produce through the system that is saleable at the end of it.

[12.10 pm]

So a recapture that is hours rather than days with a rate that is practical and achievable is where we would see it sitting in a practical sense. If we pluck a number out of the air that is not commercially deliverable then the flow-on impacts need to be carefully considered.

MR BAILEY: Thank you. We have no further questions.

CHAIR: Thank you. Mr Slyfield?

MR SLYFIELD: No questions from STIMBR, thank you, Mr Chair.

CHAIR: Thank you. Mr Weiss, Bay of Plenty Regional Council?

MR WEISS: Thank you, Mr Chairman. It is Sam Weiss, Bay of Plenty Regional Council. Mr Nalder, what residue limits are allowed on imported produce and just how is compliance with those limits verified?

MR NALDER: The nature of the gas means that it dissipates quickly. There is no residue.

MR WEISS: Okay. So there is no testing at all on any imported produce that is fumigated?

MR NALDER: There is no targeted residue testing. The residue testing is under the normal food safety authority regime that they have for total dietary intake and other residue testing programmes across fresh produce.

MR WEISS: Okay. Do you know how frequently that is carried out?

MR NALDER: Sorry, can you repeat the question?

MR WEISS: Do you know how frequently that particular programme of testing is carried out?

MR NALDER: The total dietary survey is annual, as I understand it. I could stand corrected on that. Targeted surveys are targeted surveys that would be based on whatever the scope and the target chemical or product that the food safety authority is focusing on at that time.

MR WEISS: Thank you. No further questions from me, Mr Chair.

CHAIR: Thank you. Any other questions from submitters? Mr Nalder, thank you for your time today. We appreciate it.

MR NALDER: Thank you very much.

CHAIR: Now we'll move on to the last submitter for today, Mr Olsen from Ministry for Primary Industries.

SUBMISSION 127589 - MINISTRY FOR PRIMARY INDUSTRIES

PETER THOMSON PRESENTING

MR THOMSON: My name is Peter Thomson. I'll be leading the MPI's submission this morning and with me I've got Shane Olsen and Paul Hallett. I'm the Director for Plants and Pathways within Biosecurity New Zealand for the MPI but our submission will be for all of the MPI. Shane Olsen is our Manager for Plant Exports and Paul Hallett is the Manager for Treatments and Inanimate Pathways. So I'll start and then I'll hand off to Mr Hallett and then Shane Olsen to present. We have got some slides so we'll just bring those up.

In broad, the presentation of our submission will cover MPI's role and responsibilities, our international obligations, the importance of methyl bromide for biosecurity and trade, the progress made on reducing or replacing methyl bromide and, finally, MPI's view on feasible recapture controls. Can I just confirm that you can see our slides now?

CHAIR: Yes, thank you. We're looking at your second screen but we can still see them anyway.

MR THOMSON: Okay. I'll just fix that. Is that better?

CHAIR: Yes, thank you.

[12.15 pm]

MR THOMSON: Thank you. All right, so MPI's role, we've got a broad role in an economy that has trade as a significant component and you can see on that first slide an outline of the MPI's broad role. I'll just draw your attention to the first, second and fourth of MPI's purpose. So, enabling the sector to thrive, protecting the natural environment and reducing the likelihood of pests and diseases entering.

MPI, and Biosecurity New Zealand in particular, has the component authority for animal health within New Zealand. Our responsibilities include setting the import and export standards to reduce biosecurity risk. These are the import requirements to prevent pests and diseases crossing the border, and also ensuring that our exports meet the requirements of countries importing our products.

We manage risk at the border. Not all product that comes over the border complies with our requirements and so we check, mark and then take action to mitigate risk that does arrive, both at the border and post-border. That's to protect the things that we value in New Zealand.

Finally, we carry out negotiations with trading partners for new and improved market-access conditions. That includes reduced methyl bromide rates, negotiating those with trading partners, and looking at alternatives, trying to get agreement on alternative treatments. Shane Olsen will address it later, but it can be a very long process.

We operate under quite a few international obligations and agreements. In terms of methyl bromide, there's the Montreal Protocol and you've had submissions on that. I just want to say MPI does support measures to protect the ozone layer. We have eliminated non-quarantine use of methyl bromide in New Zealand and our use of methyl bromide is limited only to the allowed quarantine and pre-shipment uses. We've been like that for quite some time. Those quarantine and pre-shipment

uses are as required by our trading partners but also as required when we have non-compliant product coming across the border, and methyl bromide is often the only reliable solution to pest and disease infestation on consignments. It's worth noting that world methyl bromide quarantine and pre-shipment use has remained steady over the last two decades.

It's been noted in some submissions that New Zealand has a very high use of methyl bromide and ranks highly in the world. I think it is worth noting, however, that our major trading partners - the USA, China, Australia, India - all use more methyl bromide than we do. Of course, on a per-capita basis New Zealand is higher but when you consider it is a reflection of our economy's need to trade, I think we sit quite well. One submitter, it's noted, has said that USA phased out the use of methyl bromide and we just wanted to note that that's obviously incorrect.

New Zealand's current use has increased over the years and this corresponds very closely to the volume of logs being exported, particularly to China and India where those countries require methyl bromide fumigation. There are some other options but that's the universal treatment and often what they expect. Log export values are significant. We're looking at $3.4 billion in export value for 2019 across 21 cubic metres of logs. There is some timber being treated with methyl bromide but a much smaller proportion of the use there.

[12.20 pm]

Other international obligations sit in the plant health space and the International Plant Convention, the WTO-SPS agreement. New Zealand is a member, a contracting party, to the IPPC and the IPPC adopted a recommendation on the replacement and reduction of methyl bromide as a phytosanitary measure, obliging contracting parties like New Zealand to make efforts to reduce or replace methyl bromide. Well before the 2017 recommendation MPI has been working internally, with the industry and with our trading partners to do that.

We have international obligations under the WTO-SPS agreement that are covered in this slide. Note that phytosanitary requirements for exports are determined the importing country. We can negotiate with them but at the end of the day it's their call. Those importing requirements must be based on science and risk. They must be transparent to all parties and no more trade-restrictive than necessary.

As I mentioned earlier, and I think Mr Nalder also mentioned, not all product arriving in New Zealand is compliant, and needs treatment. We do have options to reship or destroy, in addition to treating on arrival, but if we're unable to effectively treat on arrival, we do consider

that would be treated as a fairly extreme measure and trading partners could see it as a trade barrier that could seriously impact our trading relationships. For many non-compliant products methyl bromide is really the only proven effective option. That puts us in a difficult position if conditions around methyl bromide were such that we were unable to use it at the border on non-compliant product.

Before I hand over to my colleagues, let me just summarise New Zealand's submission, or our position on these matters. We do support the replacement and reduction of methyl bromide, including recapture and destruction. We are quite concerned that the current methyl bromide recapture targets and controls, if implemented, would have a significant negative impact on both biosecurity and our export trade. We do support the use of methyl bromide and do support the establishment of recapture targets and controls that are technically, practically and economically achievable and that provide a safe environment for workers and the community. I also want to stress that after targets and controls are known, a sufficient transition time really is necessary to gear up for implementation in terms of getting the right equipment and training people to use it.

With that, I'll hand over to Paul Hallett, the manager for Treatments and Inanimate Pathways to present on biosecurity issues.

PAUL HALLET PRESENTING

MR HALLETT: Good afternoon, everybody. Currently MPI treat a range of border goods with methyl bromide, from stock food to tyres, to fresh produce, stored products. As Pete mentioned, we also treat a range of non-compliant goods when pests are found on them. Biosecurity is reliant on access to the appropriate treatments, with methyl bromide being the primary tool we currently use in regard to treatments. If methyl bromide controls were not feasible, this would significantly affect MPI's ability to manage biosecurity risks. There are a number of points listed down there.

[12.25 pm]

It's impossible to manage risks all offshore. Effective alternatives may be more costly. If we had no options to treat, then we would have to reship or destroy those goods, which could cause impacts on trade.

Responding to biosecurity incursions would be very costly, with up to hundreds of millions of dollars of impacts across New Zealand. We have had several examples of the cost of incursions just recently with M. bovis, Bonamia, and previously with PSA to the kiwifruit industry. The costs associated with incursion are quite significant. We don't have any replacements that have the efficacy data across the range of pests

that methyl bromide does. This where having this tool provides us with the ability to treat across this range of goods when we find issues with them.

Just to run through a couple of case studies: brown marmorated stinkbug. We've been finding increasing numbers of this bug since late 2014. First off it was from the USA and then moved through to goods coming out of Europe, predominantly from Italy but also from Germany, France and other countries around that region. Currently we treat 33 countries, predominantly in the vehicles and machinery pathway, for brown marmorated stinkbug. The treatments that we currently use are methyl bromide, heat treatment of sulfuryl fluoride. Noting that methyl bromide is predominantly on-arrival treatment where we have non-compliances and brown marmorated stinkbug is found, and also in some exporting countries such as Singapore where exporters are able to offload their goods and treat there prior to arrival. Without methyl bromide in regards to dealing with brown marmorated stinkbug, we would have increasing issues with our ability to deal with it appropriately and within quick timeframe.

It's also noted that we also rely on accredited persons in transitional facilities to deal with interceptions of brown marmorated stinkbug outside of the border and within that border environment. Currently over 50 per cent of detections of brown marmorated stinkbug are actually made by the accredited people and TF networks. The concern we do have is that if those controls are too onerous or expensive with treatments we will lose the ability to get that information from the TFs or accredited persons so we would lose the ability to actually manage incursion of brown marmorated stink bug in a quick and efficient manner.

Pea weevil was discovered in Wairarapa in 2016. We used methyl bromide to treat pea straws and peas. We believe that if we did not have access to methyl bromide we may not have been successful in our ability to deal with it, which was successfully managed out at the beginning of this year.

Biosecurity treatments. Every treatment type has advantages and disadvantages associated with its use. For example, the use of sulfuryl fluoride across multiple pathways in Europe and the US where we are treating targeted vehicles and machinery, the fumigant actually has a high greenhouse gas loading. It is one of the decisions that we make we use and where we have a range of treatments is the access to and the ability of the gas to be effective in dealing with the target pests.

While, as Pete said, MPI supports the use of alternatives where possible and with the correct data to support their use for biosecurity, without the use appropriate treatments, especially with the use of methyl

bromide with achievable recapture targets, our biosecurity system will be placed at risk.

MR THOMSON: Thanks, Paul. I will just hand up to Shane Olsen to discuss the trade aspects.

SHANE OLSEN PRESENTING

MR OLSEN: Thank you, Pete. We are just moving on to the trade and export implications. A number of these points has been covered off in previous submissions over the last few days. I will just highlight importantly at the moment on current figures there are over $750 million per year of New Zealand wood products are fumigated pre-export with methyl bromide. Primarily that is logs for China and Indian markets.

If the methyl bromide controls were not feasible there would be some significant economic impacts. In terms of specifics, it is likely that at the end of the day our logs would be moved towards China and that would also increase the shipping costs associated with the logs to China. That is likely to increase.

[12.30 pm]

The most significant impact would be, if the controls are not feasible, the loss of the market for India for our forestry industry in terms of logs.

It is important in terms of our industries, our primary industries, to have some resilience, to have a range of different markets that are available, including the forestry industry but not limited to that. One of the things we have seen this year, the effect of Covid-19 on the slowdown of log exports is that that has had downstream impacts on our forestry operations, employment and social outcomes in New Zealand.

Just moving along to other areas, and people, including Port New Zealand, covered of this and I am aware of some other submission that have covered this or will this cover off next week as well. But the trade implications for horticulture and other exports could be significant. We export a range of products to Australia, the Pacific, EU and Japan where they require methyl bromide fumigation prior to export to meet their requirements. An example is apples to Japan currently valued between 12 and 15 million, as we have heard from other submitters, and a large potential to bring a lucrative market to New Zealand.

Other products are exported, without excepted alternatives exports to these markets may stop or will stop. I would just highlight that the

primary product exports that I have been discussing are considered very important in New Zealand's post-Covid recovery.

I quickly want to summarise what New Zealand has been doing just to provide a -- I know there has been a number of questions around this and a number of comments in the past few days during the hearing. Since 2010, 2011 there has been spent $30 million of research funding, the STIMBR research programme, included as part of that is $8 million from government to look at ways in which to reduce, replace and recapture or destroy methyl bromide. These are our very best efforts to work on that. MPI has been actively progressing negotiations with trading partners over many years and particularly in the last decade, highlighted by several proposals. The first one being proposals to India and China which are actively being pursued at the moment for the use of PBN and reduction in methyl bromide rates for log exports and those meetings and official correspondence has been happening as recently as last month and particularly in the last year.

As expressed by previous submitter T&G on Wednesday, we have also been working on non-fumigant systems approach for apples to Japan. Again, highlighting some examples, that has been discussed a length for a number of years.

As Peter indicated earlier, the negotiation with trading partners can take years to work through. Each country must prioritise the scientific and technical assessments required and weigh that evidence up, and also weighing up political and economic factors around those proposals. But to give you an indication of the impact of a potentially successful negotiation with methyl bromide, EDN has the potential - those two proposals to China and India - to replace 600 tonnes of methyl bromide and obviously that's subject to the controls that have been put around that. That is greater than 90 per cent of the current in New Zealand.

In terms of other alternatives, certainly that has been encouraged where possible. I would just highlight the phosphine used on log exports to China in hold fumigation replaces approximately 1,800 tonnes of methyl bromide per year. That is a significant, that is three times the current use which is saved by the fact that phosphine has been accepted by China since 2001.

[12.35 pm]

We heard from Genera yesterday about the work they have been doing to optimise methyl bromide application rates. MPI is working with them about how we can continue to meet the methyl bromide specifications required by overseas partners while still fumigating at appropriate rates.

MPI has also had a three year programme to investigate alternative treatments, including for pests such as brown marmorated stink bug. We are also supporting the Crown Research Institute in their research and their work, such as on hot water treatment for Pacific Island grown taro. Just one of a number of commodities that often requires methyl bromide fumigation on arrival at New Zealand ports.

I would just note that MPI has received additional government funding this year, in the 2020 budget, to support additional biosecurity treatment research and evaluation.

I just want to move specifically to cover off the types of fumigations. We have heard a lot about some of the types of fumigation happening in New Zealand and then just to discuss some specifics around the recapture targets. Firstly, we have talked a lot about ship hold fumigations, this is a log ship at Port Marsden. In terms of other photos, this is a log stack, covered log stack, quite large log stack obviously. We talked about fumigation in containers.

I want to make sure we cover off some of the other types of fumigation that are currently conducted in New Zealand using methyl bromide. There is fumigation in smaller chambers or closed systems, such as the 10G example. This is Jazz apples about to be fumigated. Other smaller closed or covered, sorry I should say -- this is fumigation of a container under cover. We do this for containers to manage the risks from hitchhiker pests such as brown marmorated stink bug or exotic ants, for example, that are coming in or potentially coming into the country.

Lastly, this is a photo of an even smaller covered stack. This is actually timber under cover. So the key message here is that there is a wide variety of methyl bromide fumigations, there's been a lot of focus on log stacks and ship holds in the last few days but there is also some smaller covered fumigations for a variety of goods, timber, vehicles, machinery, etc. Fresh produce too.

The proposed controls, including the buffer zone size, should - looking at the EPA staff report - consider a greater variety of fumigation sites and types, such as those closed systems or chambers and small covered stack. I don't consider they have been covered off significantly or appropriately at the moment and MPI is certainly concerned about the proposed controls which may affect some of the feasibility of the smaller fumigations which are just as important for biosecurity.

We have heard a number of comments over the past few days around the efficiency of methyl bromide recapture. MPI's view is that we are looking across goods and various ways in which methyl bromide fumigation is undertaken. There are various factors involved in successful efficiency of recapture. The size and type of enclosure. The

type of recaptured technology applied. The amount of methyl bromide used and the percentage remaining at the end, particularly in the end space, the target commodity, the environmental factors within the enclosure such as moisture, and then the time period in which recapture occurs. I know throughout the over 6,000 pages of evidence at the moment submitted into this process there is various pieces of evidence that will show variance in recapture efficiencies. There is published evidence that we've cited.

[12.40 pm]

We've talked a lot about log stacks and recapture efficiency but more recently we've heard about fresh produce and there is published evidence that we've cited around showing that potentially it can take a number of days for methyl bromide to be recaptured to a very high proportion for perishable fresh produce. We've also heard that it can take a number of hours to reach a maybe greater than 80 per cent efficiency. So there is a variety of evidence out there.

The key message for us is MPI supports proposals for technically feasible recapture targets and phase-in timelines. MPI has concerns over whether the current recapture technologies can achieve targets and noting that as of August 2020, despite lots of work, there does not appear to be -- we don't have strong evidence that current recapture targets can be technically achieved. MPI also contend that technically feasible targets need to be applied to various commodities and types of fumigation, given the importance of biosecurity and trade to New Zealand economy, environment and society.

MPI note that there is insufficient validation at this stage of current efficiency rates for available recapture technology. This is why MPI has more recently commissioned operational research to determine baseline scientific evidence for available recapture technologies. The results of this study are expected in April 2021.

Just some specific comments I want to touch on in terms of the recapture controls and the modelling. MPI supports the aim to achieve the required worker and public protection. We note that there are significant differences between fumigant dispersal modelling and small differences in inputs can result in large variance in outcomes. Some specific comments just to highlight some examples. Applicable fumigation rates using some of the modelling for ship hold fumigation is not the best to use as they are focused on China rates than India-bound log rates. Those are the ones that are used currently in New Zealand as ship hold fumigation focused on India rates currently. I just lastly note that New Zealand guidelines published around dispersion modelling recommend using the 99.9 percentile instead of the 100th percentile for predicting concentration levels.

Just lastly to summarise our presentation, MPI is concerned that the proposed methyl bromide recapture target and controls will have a significant impact on New Zealand's international obligations, biosecurity and trade. MPI supports the application and the continued use of methyl bromide as a fumigant with a recapture target and controls that are technically and economically achievable and also provide safe environments for workers and the wider community. We note that sufficient transition time is necessary for all fumigations but we also note that if the validated technology becomes available sooner, the time can be shortened for implementing controls.

MR THOMSON: Thanks, Shane. Okay, so that concludes MPI's presentation of our submission.

CHAIR: Thank you. Dr Belton, questions?

QUESTIONS

DR BELTON: Thanks, Chair, and thanks to the MPI team for a pretty comprehensive presentation there. Just a couple of points of clarification. The first one is in your earlier written submission from Dr Wards you talked about operational research expected in June 2020. Is that the stuff you're now expecting in April 2021?

MR HALLETT: Yes, that's right, yes.

DR BELTON: All right. Then the other one is on the negotiations to reduce the concentrations required to China. They've been going on, I believe, from 2010.

[12.45 pm]

I recall before I left MPI in 2012 being told that we had technical agreement that suggests that they could use the Indian rate and yet here we are in 2020 and we haven't gone anywhere and we've quadrupled our MPI presence in Beijing. What's the hold up there, please?

MR THOMSON: I'll ask Shane to contribute. He participated in the most recent talks on that.

MR OLSEN: Thank you, Mr Belton. I'm not sure what you heard before you left MPI. Ultimately this is something we're actively progressing. I can even personally speak to it. I was in Beijing in December where we were discussing the specifics around that and this is something that is being considered by the China customs. We've got a -- it requires sufficient data, which we have provided to China and India, a full package of data that supports that. Ultimately this is something that

does take time. We provided that about a year ago now, a sufficient data package which followed up from various other meetings and discussions we'd had prior to that. Within the last year we've been actively corresponding with the Chinese authorities, responding to their further additional questions. So all these negotiations do take time. As is said, there are various elements that need to be weighed up and ultimately that is a decision from the overseas importer country.

DR BELTON: I completely understand it's a decision from the Chinese side and that sometimes they do take time, although the Chinese, when they have a mind to it, can do things very quickly as well. Are there other issues going on and we're just not getting a lot of progress in the issues that we're putting on the table is I guess what I'm asking?

MR THOMSON: There is always many factors involved in getting trading partner approval for either new market access or modified market access and I guess all we can say is that we have provided what we think is a complete dossier of information that should enable the treatment to be accepted. We continue to meet with them, correspond with them to try and get progress, but the decision is at their end. We try to create a receptive environment for that decision to be made by making progress on the requests that they have put to New Zealand. So we're not aware of any specific thing that is holding up the decision, but it's just with them. Every time they ask us a question, we respond as quickly as we can.

MR OLSEN: I'll just add that we've had a methyl bromide reduction working group between China and New Zealand and there is strong interest. I've never seen such a big party when I was there in December from the China side in terms of a bilateral delegation. They had a huge number of people and that's because they have the same problem. If you reflect on the top ten world users of methyl bromide, they also use a significant amount of methyl bromide. From what I can tell personally, they have a very strong interest but, as discussed as well, there is various things that they're weighing up as part of that.

DR BELTON: Okay, thanks very much, guys. That's it from me, Chair.

CHAIR: Thank you. Dr Phillips?

DR PHILLIPS: Thanks very much for your submission, which was very informative. I just wanted to pick up on your point towards the end talking about how in terms of controls that are being recommended and your point about how the types of fumigation can vary in size. I'm just wondering, are you proposing that there should be some changes to the controls so that they're more differentiated, there's a greater level of differentiating to take in to account for that variability?

[12.50 pm]

MR OLSEN: Correct. I think if I remember right in the controls currently as per the EPA staff report you've got three classifications: ship hold, stacks, which I think is really focused on log stacks, and containers. Ultimately, as I've shown in those photos, the photos we've shown, there is a wider variation of fumigations undertaken in New Zealand with methyl bromide. It should be considered as part of those controls to ensure that we can use those and they are best fit for the fumigation types.

DR PHILLIPS: Okay. So, just looking at the staff report, there's four, which is based on two containers and fumigation under sheets and ship hold. You would like to see greater differentiation than that?

MR OLSEN: Yes, potentially and especially around the smaller size fumigations. I think that is our key point with that. There are many ways to do that.

MR GLASSEY: Also what we say with the modelling is the frequency of ship hold opening and if, for instance, instead of saying ship holds is a kilometre buffer zone, for instance, if you say it's, for instance, 10,000 cubic metres an hour or every two hours, then that gives you a volume that's open or lifted and will control the amount of the emissions of gas, and same with -- it can be stepwise. Instead of the number of the stacks you have the cubic metreage that's uncovered as a control method that relates potentially to the amount of gas being used.

DR PHILLIPS: Okay, it's a problem for the EPA.

CHAIR: Just before you ask your next question. Could I just grab your name for the transcript please?

MR THOMSON: That was Ken Glassey.

CHAIR: Thank you.

DR PHILLIPS: The second question I had was around the fact that there's been a lot of discussion over the last few days about the need for agencies to work together to resolve the bigger questions, which is around the reduction in methyl bromide use and recapture, and that sort of thing. It seems to me that you've illustrated quite well some of the ways in which you're doing that. For example, I understood that you're doing some trial -- you're supporting Genera with their trials, are you, on optimising the dosing rate? Is that correct?

MR THOMSON: Yes.

DR PHILLIPS: When you're doing that kind of work is that also feeding into, for example, or getting input from the likes of Bay of Plenty Regional Council or the port in terms of practicalities around -- for example, working with the port or what the Bay of Plenty Regional Council might want from a regulatory point of view. So the bigger picture or the more holistic approach, I guess, is that happening or is it just an MPI industry relationship?

MR THOMSON: There may be more we can do there. I think we've got a pretty good understanding that for agencies like regional councils or port authorities, the lower we can get the release of methyl bromide the better. So we're just trying to work on anything that's going to do that. But it's probably something we can strengthen, is engaging with some of those agencies more. But certainly we're working both within New Zealand and internationally with as many people as we can to find solutions. For example, we have a quadrilateral arrangement with United States, Canada and Australia where we -- for several years now, we've been sharing research results on methyl bromide alternatives, trying to collaborate as much as we can because we know that we haven't got all the answers.

[12.55 pm]

DR PHILLIPS: Thank you very much. That's all I have, Chair, thanks.

CHAIR: Thank you. No questions from me. Just before I pass on, if you wouldn't mind forwarding your presentation on to the EPA for posting along with any others who have presented today. Thank you. EPA staff.

MR DEEBLE: Just following on from Ngaire's question, could you comment a bit more -- you mentioned concerns around the controls for some smaller fumigations. Could you provide a bit more detail on your concerns here and perhaps some suggestions, if you have any, for changes for these in terms of controls, I guess?

MR THOMSON: If you look at the example, one of the photographs that Shane Olsen presented was a very small timber stack. It would be nice to think that the buffer zones and other controls were appropriate to the level of methyl bromide being used under such a small fumigation. But perhaps I'll invite Mr Glassey to comment, if you've got anything you want to add.

MR GLASSEY: A similar thing to what Pete said. We notice that the 210 controls that were put in place, for instance, for the fumigations meant that some facilities couldn't treat as they had been and so that the treatments were being moved and concentrated in a -- more fumigations in less facilities, which has the potential to expose people to the gas. So just

wary of some unintended consequences of having, say, a large buffer zone. I think it's suggested at 300 metres for a covered fumigation, which obviously have multiple log stacks but there are other situations where a smaller covered fumigation I think would not need a 300-metre buffer zone.

MR DEEBLE: Thank you. Just to get a little more clarification there. It sounds like the primary issue is with the size of the buffer zones relative to the size of fumigations. Were there any other controls related to the smaller fumigations that were of concern or is it mainly just the buffer zone issue?

MR GLASSEY: It's a little bit confusing about whose jurisdiction, I guess, some of these controls are between WorkSafe, EPA, and what the DMC are charged with doing. Certainly the recapture controls also, I think, as has been noted in previous submission modelling, are also relevant to the size of the fumigation noting difficulties of ship holds, the larger log stacks, smaller log stacks, containers and also small covered fumigations is related to the efficiency of the recapture process and what the target might be.

I also take this opportunity to mention the confusion about the efficacy of recapture versus the coverage of recapture. There has been confusion from submitters and, to me, the efficiency is when you say it's 80 per cent and then the coverage of recapture is to do with the volume of stacks or type of fumigation that you're requiring the recapture to happen as of the BOP Council requirement for 100 per cent of containers. There's the coverage and then the efficiency response of recapture is whether it's 95, 80, or 30.

[1.00 pm]

MR OLSEN: I'll just make a specific comment around, just to add to that response. We were talking about buffer zone size but we also talk about proposed controls. If I recall in the staff report it says in terms of the efficiency of the recapture efficiency, the containers for example, that's the classification, the smaller -- what I see as probably smaller at the moment. The focus was on, I think, 95 per cent. We need to consider, given the evidence that we've heard over the last few days, and the evidence the MPI is aware of, particularly for something, say, apples or fresh produce where we know there is very much no clear evidence or strong evidence to say that 95 per cent of efficiency would be able to begin in April, as suggested in the staff report, for a smaller fumigation or a containerised or closed system fumigation, if I was to call it that. So there is a need to look at that aspect as well, in terms of proposed controls, for what's a realistic target based on current evidence that could be done for recapture. Thank you.

MR BAILEY: Hi, this is Lee Bailey from the EPA. A few questions on what you said in your presentation, a few things we heard earlier in the week. You mentioned you wanted a sufficient lead-in time. What would you consider to be a sufficient lead-in time?

MR THOMSON: We're having trouble hearing you. Your transmission seems to be broken. I'm not sure if others are having the same trouble.

MR BAILEY: I'll try again. You mentioned in your submission and presentation that you wanted a sufficient lead-in time for any change in controls; what do you consider to be a sufficient lead-in time?

CHAIR: Are you still there, MPI?

MR GLASSEY: I'm sorry --

MR THOMSON: We're still here. We didn't hear any of that question from the EPA.

CHAIR: What do you consider to be a sufficient lead-in time? Did you hear that question from me?

MR THOMSON: We're having trouble hearing you as well. We seem to have a network -- could you try to repeat it? Everything is very broken.

CHAIR: What do you consider to be a sufficient lead-in time?

MR THOMSON: I'm assuming you can hear me. We've heard the question. What do we consider to be a sufficient lead-in time? I guess we might need to take advice from the likes of Genera and the industry. Depending on the controls, assuming there are still some recapture controls, we will need to procure equipment, or at least our treatment providers will need to procure equipment, and then have appropriate training to carry out those recaptures. So I would have thought it might take between 6 and 12 months, optimistically. I would be stabbing in the dark. I think there might be other submitters who would be able to provide a better idea on that.

[1.05 pm]

MR BAILEY: Thank you. I have a second question. In other applications where an applicant comes with a specific application rate, the EPA often recommends to the decision-maker to set that application rate as a maximum rate for the control so that the risks that have been modelled match the activities on the ground. I noted you were proposing a lower modelling rate for ship holds. My question is if we suggested a control for the Committee around about the maximum application rate that is used for holds to India, would that be an issue for shipments to China should they decide they do want methyl bromide only and no longer

phosphine?

MR GLASSEY: Sorry, EPA, we're having problems with the sound system in the room.

CHAIR: Could I suggest that you log out and log back in again, please?

MR THOMSON: It's not so much the sound system, it's the -- we'll have a go.

MS SMITH: Mr Chair, I just have a question. I'm not sure if you can hear me. I just wanted to know whether there'll be an opportunity to address a procedural matter at the end of the day before we sign off for the day.

CHAIR: Sure, and I do have a list of people who do want to ask questions, so, yes, we can do that.

MS SMITH: Thank you.

CHAIR: You can ask. I'm not sure if we'll be able to address it at the end of the day but you can certainly ask the question.

MR BAILEY: Mr Wilson, if when MPI come back they're still having problems with the sound, we have a question ready to go into the chat and we can read that out for the transcript if required.

CHAIR: Okay. MPI, can you hear us now?

MR THOMSON: We can hear you at the moment, yes.

CHAIR: Great. How about we have brevity as a key to asking questions.

MR THOMSON: Let's turn off our video. We're still having trouble.

MR BAILEY: We'll just put it in the chat. My question was noting that you're proposing that modelling should be done at a lower rate that suits the application rate required for India rather than China, is there an issue there for any ship-hold fumigations that would end going to China if China decided to not accept phosphine?

[1.10 pm]

CHAIR: Is there a phone number that these guys can ring in on?

MR BAILEY: Yes, we're sorting it out now.

CHAIR: Great, thank you.

Let's make use of this time, because that will manage my personal frustration. Ms Smith, how about you fire away?

MS SMITH: Thank you. I also did have some questions for MPI.

CHAIR: We'll come back to them. We'll circle back.

MS SMITH: The issue I wanted to raise was what Mr Slyfield, I think somewhat optimistically, referred to as a housekeeping matter. I think you know from my submission yesterday that the suggestion that everybody should just have a little more time to consider the fundamental time in the STIMBR application is somewhat more than a housekeeping matter and is completely unacceptable and contrary to due process. The additional suggestion that has been made today is that the modellers should get together and do some more modelling. I'm not sure whether that is because of what's been heard in the hearing so far or because of the change in the STIMBR application. I think it's more to do with the change in the STIMBR application.

Once again, they've had their chance. They made their application. Everybody spent a very long time. There have been a large number of meetings and hui to deal with this modelling and there's only one entity that is advantaged by the status quo here, and that is the applicant. What they're asking is, "Let's all take more time to consider all of these issues, let's get modellers together. Oh, sorry, we can't do that, it's Covid, we need another couple of months. Oh, sorry, we've got a problem with India, can we have another six months?" No. That is what I wanted to raise with you.

CHAIR: Okay, thank you. In terms of the process going forward -- in fact, that leads in to the matter that I wanted to raise or remind people of. Monday will be our last day of hearing and it will run as we have so far and then the applicant will be given the right of reply at that point. Following the right of reply, the only questions that will be asked will be asked by the DMC. Following that, the DMC will decide if it needs any further information to make a decision. So whilst Mr Slyfield's comments were noted, that will be up to the DMC to decide whether it needs any more information and we'll advise everybody accordingly.

[1.15 pm]

MS SMITH: Thank you, sir.

CHAIR: Ms Smith, let's not leave that. Does that deal with -- are you happy about it within the submission now? Okay, great.

Just so everybody knows that that was one point that I had with the right of reply, because I asked myself and those who have been in a HSNO hearing before will know that. That right of reply will only be questioned by the DMC.

Now we turn back to MPI who have promised me in writing that they can now hear and respond to questions. Let's test that.

MR BAILEY: Hello, again, MPI. Hopefully this question will come through this time. So in some circumstances when the EPA are recommending conditions to a decision-maker, in this case a committee, based on an application proposed, we often set proposal-control based on the application right to make sure that any modelling done and the controls based on modelling match future real-life use. Given that your proposal was to have ship holds modelled on the rates that are used for India, would that lower rate have an issue if set as a control on any future shippings to China, should China decide to no longer accept phosphine?

CHAIR: Okay, I have to ask. MPI, did you hear that question?

MR BAILEY: Ken, if we put the question in the chat would you be able to relay it to your colleagues?

CHAIR: I have also had -- of course the applicant has the opportunity to ask questions as well, then there's Mr Weiss, Ms Smith, Ms Barclay and Ms Jones have all put their hands up to ask questions. So perhaps we could speed this process up if you're able to start typing into the chat, with our apologies for that.

MS JONES: Sorry, sir, did you mean for us to type our questions out?

CHAIR: Yes, please. Hopefully the MPI team can at least see the chat.

MS JONES: Okay, thanks.

MR GLASSEY: Chair, can you hear me now?

CHAIR: We can and there are questions typed into the chatroom, so can you still see the chat?

MR GLASSEY: Yes, thanks.

CHAIR: We've got a question there from Ben and just for the transcript from -- Lee's question was noting you are proposing a lower modelling rate. If we proposed a lower application rate for ship holds in line with India would this be an issue with ship holds to China given their higher rate and/or if China no longer accepted phosphine.

[1.20 pm]

MR GLASSEY: It is Ken Glassey here. I think this relates to the previous questions and answers to do with size of the fumigations and I think the different rates also could be managed by having different criteria based on the amount of gas that's potentially being released. So instead of having one shoe fits all you tailor controls to the amount of gas that's likely to be released at any stage and the timing of that, as the model has noted, and BOP Council noted. If it's done over one hour, two hours, it makes a difference as to the readings and the modelling.

CHAIR: Thank you.

MR BAILEY: Thank you for the answer, Ken.

CHAIR: Okay, so that's all from the EPA?

MR BAILEY: That's correct.

CHAIR: Great. Mr Slyfield, you said you had two questions. It might pay for you to type them rather than ask them..

MR SLYFIELD: Yes, I'm just typing them up now, sir. I'm happy to take my turn later if that's going to make things more efficient.

CHAIR: Okay. Then going on to Ms Barclay. Her question was: MPI have stated in their slides that the 99.9 percentile of the model results are better reported as the maximum. The modelling done by the applicant's model provided deterministic modelling, in other words they took the actual MB usage over three full years of metrology. The resulting 99.9 percentile results were lower than what was being measured at the port boundary as reported in the applicant's own report, therefore do you still consider the 99.9 percentile a better maximum?

MR GLASSEY: Thanks, Chair. We don't consider ourselves to be expert modellers and that reference was from the -- what we could see was government policy to use the 99.9. The other aspect of that, we deal with efficacy levels for treatments a lot and there are different efficacy levels that we use for pests, such as 99.9 per cent for the gold standard, which Jack Armstrong often mentions as what's called Probit-9, which is a very high level of quarantine protection and runs to basically zero pests alive in 100,000.

So what the model has pointed out was the reliability of the numbers as you -- it seems like a small difference between 99.9 and 100 per cent but it makes a big difference to your reliability of the results. In the modelling, there was, as noted in many reports and reviews, huge differences between the expected readings. So that's basically our comment on that.

CHAIR: Thank you. From the applicant: MPI has referred to the package of information provided to China as (inaudible) to reduce the application rate for China. Who pays to develop the efficacy data to support these market access discussions?

MR GLASSEY: You can see below that Emmanuel has basically answered that. It's a joint industry and MPI.

CHAIR: So the advocacy data said research was funded by both industry and MPI, that is for the transcript record.

The second question from Mr Slyfield was: Dr Miller presented this morning some information on the phytosanitary requirements of India.

[1.25 pm]

As I understood it, Dr Miller suggested there are alternatives to MPI accepted by India. Did you see or hear Dr Miller's presentation? Are you familiar with the documents she was referring to? If so, can you comment?

MR GLASSEY: Just having some random things happen with our system here, sorry. Yes, we saw Dr Miller's presentation and are familiar with the market conditions in phytosanitary treatments that India accept. Yes, there is heat treatment as an available option but, as Dr Miller alluded to, heating a whole log and a shipload of logs to that time and temperature is difficult. We have helped the process with the dual heating. In fact it was initially an MPI ops research budget that started the research on the dual heating, which essentially is turning the log into a wire by applying electricity to each end and it very quickly heats the log in its entirety. It does work very well but obviously is expensive and will use a lot of power and maybe if Comalco -- the aluminium smelter no longer operates then Bluff could use that power. I think that's probably all we can say on that.

CHAIR: Okay, thank you. You heard the question from --

EMMANUEL: Can I add to this, Ken? With the draw heating, a lot of research has been done to prove that it's possible to use heat to treat logs, but the question that we are having is providing the machinery on the commercial scale and be able to heat these log stacks, a lot of logs at the same time. You can do one log under lab conditions that you can heat it and you can provide those heat treatments, but on a commercial scale it's not feasible and we don't have the technology as yet to be able to provide that level of requirement.

CHAIR: Ms Smith, I just wanted to check whether you had a question for MPI?

MS SMITH: I do. Should I attempt it orally?

CHAIR: Try that and we'll see how we go.

MS SMITH: My question was: are the markets other than India -- can they be expanded, the log markets?

MR OLSEN: That's probably a question for the industry at the moment.

MS SMITH: Sorry, I'm going to come back before you fob me off like that, because your paper includes very detailed information on who is buying what from who. So, do you want to try again?

MR OLSEN: It's Shane Olsen here from MPI. It's something we need to -- it's about working with the industry on possible markets and alternatives for India. Logs are a global commodity. There are various players involved, various forestry countries that are attempting or are trading with certain countries. So it's ultimately some commercial decisions that are needed around that but there's also feasibility in terms of meeting phytosanitary requirements.

[1.30 pm]

In some cases phytosanitary requirements set by certain countries mean it is difficult to trade into those environments. So it is a complex picture, which can't be answered completely by the Ministry.

MS SMITH: Okay. Let me try and make it simpler. Could the China market be expanded?

MR OLSEN: The China market has already expanded hugely if you look at the growth in logs.

MS SMITH: No, that's not my question. Could it be expanded?

MR OLSEN: If you let me finish, I'll respond. The China market has already grown and it will continue to grow. As the projections are from MPI, that will continue to grow over time. If there wasn't a market such as India available, our understanding is that that China market would grow. However, there is various factors at play here and, as also stated in our presentation, that putting all your eggs in one basket in terms of a market can provide serious downstream implications and it also puts pressure on price. Again, a complex picture but putting it into one market is challenging. As we've seen with Covid-19 this year, in effect having certain sectors providing primary products into one market in a significant way has had some significant impacts for those sectors.

MS SMITH: If you want to keep India open, is that something that export to India is a desire to expand that market?

MR OLSEN: Can you just repeat the question? I didn't quite catch it.

MS SMITH: Is there an existing desire to expand the India market?

MR OLSEN: So, from what our understanding is that there is potential growth in India but, again, that's a commercial question. The Ministry, as a regulator, we work with the industry to try and support their trade needs, but as I understand potential growth is possible. We continue to work on India and we've just had some recent correspondence around working on alternatives and, as I said, we've had a proposal with India and the Indian authorities around accepting --

MS SMITH: Okay, sorry, I'm going to stop you there because I think people are getting hangry. So that wasn't my question. You just said a lot about the alternatives. What I'm asking about is if there is no ultimate cap on the amount of methyl bromide that can be used in New Zealand - we're just talking about recapture rates - and the India market, there are efforts to expand it and they don't accept anything other than methyl bromide, does that mean we could see that curve that Dr Miller showed us continuing to go up?

MR OLSEN: That is quite a different question. I believe you're saying that the potential that we would increase methyl bromide use, that is a potential. As I've outlined, there is a number of activities that New Zealand is working on, various players, including MPI, are working on in terms of reducing that usage, including alternatives, including negotiations with overseas countries, including how we apply it, including how we recapture and destroy it.

MS SMITH: It was a question for clarification. I'm not clear that I've got an answer for my question but if the DMC thinks that is enough information I'll leave it there.

CHAIR: Great, thank you. I'm jumping and ducking and diving here, so if I miss it by the time I get to the end of the list, please jump in, those who have a question. I'll go back up to the top of the list, which is Mr Weiss, and then we'll come to you, Ms Jones, and carry on moving down. Mr Weiss?

[1.35 pm]

MR WEISS: Thank you, Mr Chairman. I'm hoping you can hear me this time.

CHAIR: Yes, a nice change.

MR WEISS: Thank you. So, MPI, in your published evidence provided in response to the EPA dated July 2019 it states, and I quote:

"According to Genera Limited, the largest provider of recapture services, it is not possible to achieve 5 parts per million with many commodities and large log stacks can be reduced down to around 2,570 parts per million after eight hours recapture. Self, 2017."

Now, I'm presuming this is a quote from Mark Self, the chief executive of Genera at the time. I note that that figure of 2,570 parts per million corresponds to an 80 per cent to 90 per cent reduction of the reported range of concentrations left at the end of the fumigation period. Clearly the MPI wanted to confirm what level of recapture was realistic or practical or economically achievable and so commissioned the research report. I understand the results from your original submission were to have been due by now but now you say they are due in April 2021.

My first question - I'm finally getting to it - is are you able to describe the scope of this project? For example, does it include Genera's proprietary recapture system and activated carbon recapture systems on log rows, for example? I'll have a follow-up question later on if I may.

MR OLSEN: That was quite a long question but I'll do my best to answer it. It's Shane Olsen here from MPI. So, firstly, obviously that information, that submission was placed in 2019, July. It has been over a year ago and we have certainly learnt more and I must say that even the evidence this year has shown that there is a real variation. That, I think, was the key message that came out, a real variation in the ability, the efficiency of recapture. MPI is aware of a huge range. We operate with -- quite a number of different providers of treatments, including methyl bromide, exist in New Zealand, all or at least some of them with recapture technology of different types, and there is a variation across there on what can be done and also what it has been applied to and tested and experimented on with fresh produce, inanimates, products, as well as logs, where obviously Genera has spent a lot of time and effort and money trying to explore.

As our submission said, there is a range of evidence, including presented in the last few days, more newer information, I believe, that has shown there is a variation depending on a number of different factors, as outlined in our presentation. So hopefully that covers off -- that puts a challenge, I guess, to finish, on what are the most appropriate recapture targets given current technology, but our message is it appears that we've got strong evidence that we can achieve those feasibly in the short term to the degree that the controls have suggested. That needs to be weighed up in the light of and including the most recent information, some of which MPI has recently become aware of.

MR WEISS: I was really asking you about the scope of the current trial that you referred to in your submission and in the presentation. With that trial or that project, what does it involve? For example, how many recapture events? Does it include activated carbon, for example? I'm interested in hearing a little bit about the scope.

[1.40 pm]

MR GLASSEY: Mr Weiss, the project is intending to cover the available recapture units in New Zealand and trying to cover N treatments of a variety of products such as logs and timber, containerised produce and machinery, et cetera, et cetera. So the idea is, yes, to cover both carbon and liquid scrubbing.

MR WEISS: Does that extend to both containers and log-room recapture for both carbon and Genera's proprietary system?

MR GLASSEY: It's my understanding that the smaller fumigations with containers et cetera are for carbon, and the liquid scrubbers are used for the log rooms, so that's what will be tested.

MR WEISS: Okay, thank you. My second question, if I may, is given that the issue of what is practically achievable in terms of recapture is highly relevant to the reassessment, is the MPI prepared to make preliminary results of the research project available to the EPA and the DMC?

MR GLASSEY: Yes, our co-operation and research projects results are available, can be made available.

MR WEISS: Terrific, thank you.

MR GLASSEY: Unfortunately, Covid has delayed the contractor who was going to do the work and isn't able to get into the country at the moment.

CHAIR: Thank you. Ms Jones.

MS JONES: Thank you. I'm Emma from Clear the Air in Mount Maunganui and my question is of clarification to you, the MPI. Once again, I'm not a technical person. I'm a resident concerned about their children playing sport 300 metres from the fumigation boundary. Could you answer most succinctly as possible? Your goal is to expand export markets, correct? It's a follow-up question? I just want to know. You're trying to grow our export markets, including logging, forestry and that, is that correct?

MR OLSEN: It's Shane Olsen here from MPI. In terms of answering your question, we're trying to support our industries and New Zealand's needs going forward with exports. That would include growing. It may not, though,

include logs in a way that is shaped and formed. There's quite a lot of work going on around processed wood and value-add within our ministry and within wider New Zealand as well and industry.

MS JONES: That's exciting to here. I'm really excited to hear more about that. Just in the meantime, while that's all happening and while all of this process is going on and deliberation, if the logging industry continues to expand as it is now, is it safe to assume, if nothing changes as a result of these hearings, that more methyl bromide will be used at the Port of Tauranga?

MR OLSEN: That's certainly not our wish in terms of --

MS JONES: That's not my question. It's just a yes or a no. It's just a yes, isn't it? If you're going to have more logs here to export, there will be more methyl bromide used in the short term if nothing else changes?

MR OLSEN: If nothing else changes, yes, but obviously there are a number of activities that --

MS JONES: Thank you. No further questions, your Honour.

CHAIR: I'll take that as a compliment with "your Honour" title. Moving on. In the order that I can see it, and my apologies in advance if I skip, Ms Barry-Piceno has asked does any of the STIMBR voluntary levy, as paid by logging industry, go directly to MPI individual development of alternatives or recapture technology.

[1.45 pm]

MR OLSEN: Can you repeat the question, sorry?

CHAIR: Ms Barry-Piceno has asked does any of the STIMBR voluntary levy that is paid by logging industry, go directly to MPI independent development of alternatives or recapture technology.

MR OLSEN: The answer is no, none of the levy is going directly to MPI. As you'll note in our presentation, the Government has supported the research programme to some degree. It has been largely industry that have paid for the majority of the research programme, as well as other industry players that also have been trying to resolve this problem about reducing, replacing and recapturing methyl bromide.

CHAIR: Okay, great, thank you. From Mr Slyfield, MPI's response relates to heat treatment. As I understood it, Dr Miller was suggesting there were alternatives other than methyl bromide and heat treatment accepted by India. Can you comment on that?

MR OLSEN: We're actively working on other alternatives, including EDN as a possibility, but at this stage there are no other alternatives for logs to India from New Zealand other than methyl bromide or the heat treatment, which is currently unfeasible. We are obviously progressing or trying to progress alternatives. If India came to us tomorrow, as an example, and said that they would be happy to have another treatment applied, such as phosphine or EDN, then I'm sure our industry and MPI would jump at the opportunity to use that where possible.

CHAIR: Thank you. I do note a written response from Emmanuel from MPI, which I'll read out just so that it's on the transcript:

"India accepts heat treatment as alternative but there are logistic challenges in meeting this requirement on commercial scale. We don't have the equipment to heat treat on commercial scale."

I do note, Mr Nalder, you've written a comment there. Respectfully, this isn't a discussion, although it seems like it. It's a question directed to MPI for their submission.

Let's see where we've got to in terms of are there any further questions for MPI.

Okay, great. Thank you for your submission. Our day has been sandwiched at the beginning and the end by technical issues but we got there at the end. I'll now adjourn the hearing. Panel, if you can, to quote Ms Smith, restrain for being angry and we'll adjourn to our briefing room. I wish the rest of you a good weekend.

I wish the rest of you a good weekend. We'll adjourn until 8.30 am on Monday. Have a good weekend. Here's hoping for a positive announcement from the Prime Minister today about our restrictions. We will carry on. Have a good weekend.

MATTER ADJOURNED AT 1.48 PM UNTIL MONDAY, 17 AUGUST 2020