

# TRANSCRIPT

## LEGISLATIVE COUNCIL ENVIRONMENT AND PLANNING COMMITTEE

### Inquiry into Recycling and Waste Management

Melbourne—Wednesday, 2 October 2019

#### MEMBERS

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Mr Clifford Hayes—Deputy Chair

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Ms Melina Bath

Mr Jeff Bourman

Mr David Limbrick

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Dr Samantha Ratnam

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#### PARTICIPATING MEMBERS

Ms Georgie Crozier

Mr David Davis

Mr Tim Quilty

Dr Catherine Cumming

**WITNESS**

Mr Lee Smith, Manager, Strategic Projects, Waste and Recycling, Veolia.

**The CHAIR:** I declare open the Environment and Planning Standing Committee public hearing. All mobile phones should now be turned to silent. I would like to extend a welcome to members of the public in the gallery. The Committee is hearing evidence today in relation to the Inquiry into Recycling and Waste Management and the evidence is being recorded; in fact it is being telecasted.

I welcome Mr Lee Smith, Manager, Strategic Projects, Waste and Recycling, from Veolia. Thank you for making yourself available today; it is much appreciated. All evidence taken at this hearing is protected by parliamentary privilege, as provided by the *Constitution Act 1975*, and is further subject to the provisions of the Legislative Council standing orders, therefore the information you give today is protected by law. However, any comment repeated outside this hearing may not be protected. Any deliberately false or misleading evidence to the Committee may be considered a contempt of Parliament. You will be provided with a proof version of the transcript in the next few days.

We have allowed about 5 to 10 minutes for you to give a verbal presentation. We are in your hands. After that we will go to questions by the Committee. Over to you, Lee.

**Mr L SMITH:** Thanks very much, Mr Chairman and members of the Committee. I do not have a formal presentation, but I will introduce what I have to say and then I am happy to answer questions as you see fit.

My employer, Veolia, is a very large multinational waste and recycling and resources company working in the water, energy and waste solutions area. It has about 170 000 employees worldwide; we have about 4000 in Australia and New Zealand. In Australia we have quite a few medium and large-sized waste reprocessing and recovery facilities, although we are not greatly exposed to the marketing of kerbside recyclable materials and not as badly affected by the current recycling crisis as some of our competitors in this market are.

We have a food waste processing facility in western Sydney, which processes about 52 000 tonnes of food waste per annum, making energy out of it and compost. We have a large bioreactor landfill near Canberra, which receives about 1.1 million tonnes per annum by rail, the only waste-by-rail facility in Australia. You are possibly aware that we have a green waste processing facility at Bulla, out past the airport, which processes about 85 000 tonnes per annum. We have another bioreactor—our landfill and energy production facility at Ti Tree in the Ipswich area of Queensland—processing about half a million tonnes per annum, and we have a mechanical and biological organic waste processing facility at the Woodlawn site near Canberra, which processes 144 000 tonnes per annum.

Directing what I have to say to the questions that are guiding the Inquiry, the Government cannot avoid having some responsibility for waste and recycling. Waste is an essential service. There are public health and safety implications if it is not properly managed. You know all this. It is about efficient resource management. Where all resources are finite, we have to manage them well. It is about carbon emissions. Producing something from virgin materials is always more energy intensive than reproducing something out of recovered materials either in energy use and/or in water use. It is always more efficient to recover materials. Disposal capacity is required and probably will always be required to some extent. To use that up unnecessarily is just in itself wasteful. The waste hierarchy is a well-accepted guide that governs the way we look at and the way we manage waste in our society and it should not be ignored. The State Government is already a key stakeholder in this state anyway. Relying on market forces to make our choices is how we got into this position in the first place. There are lots of things the Government should do. I will not read through my list that I wrote half an hour ago; I would be happy to talk to it later on.

The China's National Sword policy was anticipated. We had plenty of warning. It did not just arrive in February or March last year. The Western world just chose to ignore those warnings. China had been the largest importer of waste—probably for the last almost 40 years—in the world, particularly recycled paper and plastics. For the 10 years preceding the China's National Sword crisis the import of recyclables into China grew tenfold from about 4.5 million tonnes in the mid-90s to 45 million tonnes by the start of 2017. Article 17 was the first indication from China that they were going to change the way they imported material. That was April

2011. In February 2013 they instituted operation Green Fence, which was a precursor to National Sword. National Sword was introduced in February 2017. It was a one-year campaign similar to Green Fence.

In mid-2017 China announced that it was going to phase out the imports of all solid waste and recyclables by the end of 2019. They told the World Trade Organization that there would be contamination thresholds to commence on 1 March 2018. For example, the best recyclable material that was going to China at that point had about 5 per cent contamination. That was really good material, but the contamination thresholds marked the limit at 0.5 per cent. So it was an order of magnitude more stringent than what the best recyclers had been achieving at that point.

At the start of 2018 China confirmed the contamination standards, and later on in 2018 they introduced Blue Sky 2018, which was about the enforcement of National Sword and focused on preventing waste smuggling. They proceeded to go ahead and do this. It is about building up their own recycling industry, and who could blame them. They have got the material; they have got an economy that does it. There is really no shortage of demand for recyclable material—as long as people are producing goods, they are going to require packaging for those goods to go in, and a lot of those goods can be made out of recyclable materials. So it is not about demand; it is about a contamination.

Look, I am happy to let that be what I would say in terms of the preliminary, and I am happy to answer questions.

**The CHAIR:** Thanks for that. I will just maybe take you back to the last comment about the China policy and the reason why they do it. And I think you hit the nail on the head. The main reason is they want to deal with their own recyclable materials. I think they produce, from memory, about 10 billion tonnes of waste, or something thereabouts. So that is basically the main driver. Now, if you were to translate that to Victoria, what should Victoria be doing? I mean, the Chinese model, for example, is to go about regulating industry and setting direction about what happens to their waste and recyclables. Is that something we can adopt in Victoria to achieve a good outcome in relation to recycling and turning waste to energy, for example, and moving away from landfill?

**Mr L SMITH:** Are you asking can Victoria adopt the same standards?

**The CHAIR:** Yes, to look at a similar direction, or should we?

**Mr L SMITH:** Well, the whole of the Western world, not just Victoria, has to adopt those standards. Whether Victoria and the rest of Australia decide that they are going to continue to be reliant upon China's manufacturing industry as the basis for its recycling, or whether they decide to set up a circular economy in this state or in this country, it is going to require cleaner material. Either way it is going to require cleaner material.

**The CHAIR:** So can you expand a bit more on that? To achieve that goal what do we need to do?

**Mr L SMITH:** To achieve that goal, the best way of getting cleaner material—sure, the technology can help—is to get cleaner material at source, which means it has to be better separated. One of the problems, as I see it, that led us into this—well, it did not lead into China sword; China sword was coming anyway—and made such a great impact with China sword arriving was that we had got used to sending material that was not properly sorted because there was such a high demand from China. There was competition amongst receivers of recyclable, recoverable material in all of the local governments. Local governments were used to paying a lower price, and they were told that their material was extremely valuable in whatever form it arrived. That simply was not true. The more rubbish in there, the more it is going to cost to sort out. Sure, cheap labour in China solved that problem for a while, but eventually China got sick of dealing with the after-effects of all of that. So there has to be better sorting. For there to be better sorting there has got to be a recognition in the local government that that is required and that it is going to cost more money.

That cleaner material is then going to provide a much more viable recyclable market either within this state, this country or in the world. If we want to continue to export material to that part of the world, it is going to require significant education, it is going to require promotion and it is going to require some input of technology. But really the best improvement in material quality and reduction in contamination is not done by technology, it is done by hand. It is done by people who generate the waste in the first place making the decision that they are

going to actually take seriously the responsibility to put it into the right bin in the first place. It is also going to require some responsibility from the manufacturers of difficult-to-recycle material to either stop manufacturing that difficult-to-recycle material or to put some effort into developing markets for that material.

**The CHAIR:** So mandating, the State can play a role, or do we just let industry, council and individuals voluntarily comply and hopefully they will do the right thing?

**Mr L SMITH:** Well, we have effectively had a voluntary market for the last 20 years, where people did the best they could and all of the promotion was feel-good about having the right attitude and caring for your environment, and clearly that has not worked. It has worked to some extent. Support for recycling, a love of the environment and the desire not to damage the environment—in every survey you do they come up as a really high ambitions for Australians, but their behaviour indicates otherwise.

**The CHAIR:** I will finish with my last question, and then I will turn to other members. Sorting at the front end is basically the kerbside at the household or businesses, if we are talking commercial. I know you are a veteran in the industry; you have got over 30 years experience—30 or 40 years, I think, or thereabouts.

**Mr L SMITH:** Thirty, I hope, yes.

**The CHAIR:** Years of experience in the industry. So is that the way to go?

**Mr L SMITH:** That is the most important thing. Reducing contamination is the most important thing. The single best thing to do is to reduce the contamination of the material at the first stop it takes after it is generated as a waste.

**Ms CROZIER:** Thank you very much, Mr Smith, for your presentation. You mentioned that you had just written a list of what Government could do and it was too long to provide to us. But I am very keen on understanding what Government can do, and you just alluded to what local government can do, so I am wondering if you could briefly summarise what you think the State Government particularly but all levels of government should be doing in this space.

**Mr L SMITH:** Sure. It is not such a long list. It is just that I only had 5 minutes and I was getting to the end of that 5 minutes.

**The CHAIR:** No, no. That is all right.

**Ms CROZIER:** I think it is important for us to understand—

**The CHAIR:** Yes. Take us through the list, and also feel free after the hearing to share any further material that you would like to share with us. Just flick that through later on as well.

**Mr HAYES:** Yes, if you could submit the list, that would be good.

**Mr L SMITH:** Okay. There are always questions of jurisdictions that use a waste levy: what is the real purpose of the waste levy? How effective is it? Waste levies are a good thing generally because they can be applied to make recycling more competitive. Where there is a difference in levy between one jurisdiction and another you have perverse outcomes. Waste is like water: it flows to the lowest level. Queensland has done something to address that situation on their border. There is still waste flowing to Queensland, less going by rail, but it has not stopped the waste by road. I do not know what the actual figure is, but I know that all of the landfills that were taking that material are still taking material in south-east Queensland.

If New South Wales were to drop the level of its levy, or possibly if Queensland were to increase the level of its levy, one place the waste could go is to northern Victoria. So applying the levy to make recycling more competitive is one thing that governments should continue to do. They can use the funds they raise through the levy to kickstart new initiatives, promote behavioural change, enforce compliance and rectify some of the perverse outcomes of the levy in the first place et cetera. They can incentivise the introduction of circular economy initiatives. That is very important. They can support recycling and recycled content through government procurement. They can assist local government in making better decisions. Local government has

got goodwill, it has got great ambitions, but I think it needs some assistance in carrying those ambitions through practically.

They can harmonise waste and recycling systems across the state—the systems and the regulation within Victoria and in line with national best practice. The bin colours: if you move from Victoria to New South Wales, which I have done a couple of times now—I have moved back of course too—the bin lid colours are completely different, and it is the same with commercial bin colours.

**Ms CROZIER:** That varies between local government areas as well.

**Mr HAYES:** Yes, from council to council.

**Mr L SMITH:** It is less so in the Sydney area where I live now, but across Melbourne I know if I go to my in-laws' place or to my sister-in-law's or brother-in-law's house, they live in different LGAs and there are different bin lid colours. I really think consistency is the key to getting it right in the first place.

**Mr HAYES:** That makes education easier, doesn't it? If there is consistency, you can mount a public campaign saying, 'This goes in this bin, and this goes in that-coloured bin and that goes in the other'.

**Mr L SMITH:** Exactly. I was at an ACOR—Australian Council of Recycling—meeting here on Monday. We were talking to Sussan Ley about consistency through the different systems of waste management commercially and at a local government level, and also in the different services that are provided. I do not think it is so important to provide consistency that every LGA should have exactly the same range of services. If one LGA sees fit to invest more money in, say, doing a soft plastics collection for instance—trailing that—why should they have to wait until the whole of the state can do it? It has got to be trialled somewhere. But I think consistency of colours, consistency of what is allowable in terms of contamination—i.e., next to zero—and what their ambitions are after a trial proves that a particular material can be recovered is a good thing. In fact it is essential. As you mentioned, there have to be consistent waste education programs, and there has to be enforcement of compliance with environmental regulations.

**Ms CROZIER:** Is that your list complete, Mr Smith? I am just wondering. At a state level you said that there is a hierarchy involved in this area and government is at the top as the key stakeholder. So in terms of what state governments specifically can do in addition to—

**Mr L SMITH:** State Government does not provide most of the services that are available either commercially or at a local government level. So the State Government's job I see really is to provide a consistent framework. And since it levies the levy—

**Ms CROZIER:** That is right.

**Mr L SMITH:** it is also to provide funding for incentives, and disincentives for doing the wrong thing, and to have proper regulation.

**Mr LIMBRICK:** Thank you, Mr Smith. I want to touch on the China sword policy and how that affected Veolia. So Veolia was exporting volumes to China and has now stopped. How has that affected the operations of your business now?

**Mr L SMITH:** Okay. Veolia was not at that time, and still is not, greatly exposed to the household recycling materials market. We have three relatively small MRFs in eastern Australia. Off the top of my head I cannot tell you what the tonnage is, but it is less than 100 000 tonnes in total, whereas there are some companies that have MRFs that were single MRFs—sorry, MRF is a materials recovery facility—that were processing more than 200 000 tonnes per annum. So we are a relatively small player in that area, although we have lots of these facilities worldwide and we were exposed in other countries to the issues brought on by China's National Sword.

The material that we market through our small MRFs still had to find a home. Most of that material is hand sorted or sorted through a combination of hand sorting and technology, so it is pretty good quality material. We

were selling mostly to China but also to India and to other Asian countries, and we still are able to sell into those countries.

**Mr LIMBRICK:** You spoke before about the contamination issues in China. China was getting sick of these after-effects. Who were the receivers of these goods, and what was actually happening to the contaminated material that was not being recycled? Do we actually know what was happening to it—that 5 per cent? Let us say it is high quality and it has got a 5 per cent contamination rate. What was happening to that contaminated material?

**Mr L SMITH:** I think it varied according to who the buyer was of the material. I mean there are probably more than 1000 paper reprocessing mills in China. I do not know if it is multiple thousands, but it is probably up around the 1000. These are very large mills. They are very high tech. The incoming material that they are accepting—they have standards of acceptance that they are looking for. What they are looking for is a high percentage of the stronger cardboard, the craft boards, where they have long fibres. They will accept a certain percentage of mixed paper and what we call MRF paper—the other smaller pieces of paper which have generally got shorter fibres that are not as strong. They really can only tolerate a small percentage of other materials that do not contain fibre, so everything else that gets caught up in the recycling system.

The high-technology sorting systems generally work on whether an item is light or heavy, two-dimensional or three-dimensional, has magnetic properties or does not, whereas the hand sorting system is able to pick an exact item that it is looking for, and robotics can pick exact items as well, so that if something was flattened out, it would often be read as being a piece of cardboard or paper by the technology instead of the three-dimensional container that it used to be. What actually happened to that material? I guess, you would be as good a guess as me because your source of information is probably the shock-horror stories on the current affairs programs. Although I have got to say that some of that footage of the containers in Indonesia—I looked at that and I thought, ‘That looks like pretty good material, actually’, whereas the material they had chosen for their previous shock-horror footage obviously contained lots of things other than plastic containers. The photographs of the containers that I saw of one of the Victorian companies that ceased trading, when they were opened up all I could see was what looked like textiles and shredded paper, and it was being described as plastic waste.

What happens to the material? I suppose a really well-run facility would have a waste-to-energy facility that it had an arrangement with for that material, typically plastic and fibre material that is going to be high calorific. There is not really an issue with the metals if there are metals caught up in the material because the metal tends to be quite valuable and it is easily separated out by either magnetic or eddy current separators. The glass is another issue. Glass being heavier, you can usually get rid of it by shaking the material, and because it is fine particles of material it will drop out to the bottom of the sorting system. That would not go to a waste-to-energy facility; that would probably be used as some sort of aggregate substitute—or I suppose, by an unscrupulous operator, it might be illegally dumped. I think that was the issue for China: there are so many little facilities that were taking material and sorting it and that their regulatory compliance—they had the regulations in place, but it is a big country, there are a lot of people. I suppose enforcing compliance is very difficult for them, but now they are having a go at it.

**Mr LIMBRICK:** Just to clarify, there has been talk about waste-to-energy facilities in Victoria. It is fair to assume that a big chunk of that contaminated material was probably already going to waste-to-energy facilities in China, presumably.

**Mr L SMITH:** It could have been, yes.

**Mr LIMBRICK:** A fair chunk of it. Okay.

**Mr L SMITH:** Yes. That would make more sense than running the risk of being fined or penalised for illegally dumping it, and presumably there would be some return for the material if it had a reasonably high calorific value.

**Ms TAYLOR:** I have got a few questions. On things like polystyrene, I will make the effort—I go to the transfer station because I am pedantic, but I do not know how many people actually do that. Can you see a

mechanism for including that in the regular waste stream and making it easier—things like those kinds of really difficult products?

**Mr L SMITH:** Polystyrene is one material that I would make an exception of—I imagine you are talking about expanded polystyrene—because that material breaks up so easily in the technological sorting systems. If you have ever seen how the initial sort in a MRF after hand-picking the really dangerous materials occurs, the material comes into the MRF, it is flattened out into a stream that is—what is the word?—only one layer deep so that the people in the contamination room that it passes through next can see are there any really dangerous things that should be pulled out? And everything you can think of—bottles of hypodermic needles, gas cylinders, dead animals, bags of household waste—all of the things that the technology was not designed to take, they try and pull out in that first instance. It is a nasty, dangerous job, but it is required. It will probably eventually be done by robots because you can train a robot to sort just the same as a person can, there is no risk of injury and they can do it 24 hours a day without needing a break, and they are probably not the jobs we should be trying to develop anyway. But back to your question, which was about—

**Ms TAYLOR:** Polystyrene.

**Mr L SMITH:** Polystyrene. Sorry, it slipped my mind for a second.

**Ms TAYLOR:** No, it's all good!

**Mr L SMITH:** The next step after the hand sorting is that it usually goes onto a screen or a trommel. The screen is a bed of rotating discs—either just a straight disc or a disk with little fingers on it. They all rotate in one direction. Something flat will shovel over that screen. For something that is three-dimensional, if the screen is angled, it will roll off the side of the screen into the gutter in between. That is one way of separating out three-dimensional objects from two-dimensional.

There are other types of technology that do that too—a bounce conveyor jumps things up as it goes up a slight incline. But with all of those things, if polystyrene goes through it, will break the polystyrene up into little beads. The little beads become electrostatically charged just by moving them, as you are probably aware. They stick to your clothes and they stick to paper. They are one of the worst things for the paper mill; it does not want polystyrene beads. So if we could get polystyrene out of the recycling system—it is not the major problem; it is a problem—that would be a good thing.

**Ms TAYLOR:** That is good—very helpful.

**Mr L SMITH:** Another good thing to get out would be PVC.

**Ms TAYLOR:** This is what I was going to ask you about. This huge range of plastics, should we be narrowing down to those which can be genuinely recycled, as opposed to those which just end up God knows where?

**Mr L SMITH:** Perhaps we should. I mean, the mantra over the last 20 years has been about making recycling easy, about making it convenient and about making the decision for the householder really simple so that they only had to say, 'Does it go in the bin?', and 'My main focus should be on recycling it'. It should be the other way around. It should be: 'Only these things are recyclable; anything under a certain amount goes in the bin'. Now, that is going to be a difficult message for people who are focused only on landfill diversion. But people who are focused on the actual performance of our recycling and recovery system are making sure that the things that we aspire to recycle are actually recycled and not in the end sent off to landfill, dragging with them all of the things that were alongside them in the MRF. That has got to be a better outcome.

**The CHAIR:** Just to follow up on that question, do you go as far as then mandating or legislating that producers, manufacturers or retailers should not use any product—I am talking plastic and related items—unless it is recyclable?

**Mr L SMITH:** I do not know, because as a—

**The CHAIR:** A voluntary system does not work. We already talked about that earlier.

**Mr L SMITH:** If had a packaging hat on, I would be saying, ‘Okay, I’m going to have to use a lot more of the material if I use just a single material in some instances’. I mean, there are reasons why people who make packaging go to a particular type of material for their packaging. In some cases it is to do with shelf life; in other cases it is to do with the security of the food that is sold within them. In the case of some medical products, for instance, PVC is the best solution. Now, I do not think we should muck around with people’s health. I think we should say, ‘Okay, there’s a little bit of PVC packaging that there is currently no alternative for to make medical products. We should continue using that, and we should make sure that there is a proper recycling stream or disposal stream into which that goes’. PVC is a difficult one, because if it gets mixed up, for instance, with PET in recycling, it does not melt; it chars. It forms a little black spot in the PET. So it is the last thing that the PET recycler wants. If you are running a waste-to-energy facility, there are ways around it. But generally speaking if you burn PVC, it is going to create dioxins, so it is not the ideal thing to have either in a waste-to-energy facility or in a plastics recycling facility. If you had a clean stream of just PET, yes, it is eminently recyclable on its own—back into more PVC.

**Mr HAYES:** Can I just ask on that, you are saying that banning single-use plastics might not be a way to go, but is there some way of improving—

**Mr L SMITH:** I actually did not say that.

**Mr HAYES:** No?

**Mr L SMITH:** A single type of plastic may not be the way to go, but it may be okay to decide that we are going to ban a single-use plastic because anything we only use once and then have to rely upon it being recycled again is not—

**Mr HAYES:** Recycled or disposed of somehow.

**Mr L SMITH:** Well, disposed of is not a good idea, really. It comes from a finite resource, so I do not know that I disagree with banning single-use plastics.

**Mr HAYES:** You are talking about mixed plastics, are you?

**Mr L SMITH:** Yes. I am talking about certain types of plastic, either certain polymers or certain mixtures of polymers.

**Mr HAYES:** I was going to ask: if that was the case, do you see a role for product stewardship there, either better labelling of soft plastics as to how they might be recycled or making the manufacturer or supermarket or whatever responsible for their return or disposal—something like that that makes it easier for consumers in a way and gets these things out of the waste stream, really?

**Mr L SMITH:** I think that anyone manufacturing a product of any sort has not got the right to say, ‘I made it; I’ve got no idea what happens to it now’.

**Mr HAYES:** You get rid of it, yes.

**Mr L SMITH:** I think everybody in the chain has a responsibility for either not purchasing something that you know is going to be damaging to the environment or not making something and putting it out there, even though it might have some fantastic properties in the purpose for which it is designed. I think that definitely there is a role for product stewardship and for extended producer responsibility. I am not saying that it has to go back to their warehouse, but if you make something, you should at least have to think about how can that be most properly dealt with at the end of its life—and it is not just putting a little sign on it that says ‘Please dispose of thoughtfully’.

**Mr HAYES:** No, no, not at all; we have to do better than that.

**Mr L SMITH:** I mean, how many people actually look at an item and go, ‘What is that number? Yes, it’s a number 3. Let me check my council guide. Number 3 isn’t allowed, so I won’t recycle that’. No-one does.

**Mr HAYES:** It is too hard.



**Mr L SMITH:** You look at the item and you say, ‘A soft drink bottle, yes, that’s recyclable; a package of multiple layers of different types of polymers and foil, that’s not recyclable’—not in the household system, anyway.

**Mr HAYES:** No, but then how would you discourage that from getting into the waste stream or into the—

**Mr L SMITH:** Well, there are uses for that material. The material can be recycled into probably a lower order future product or its calorific value can be used in a waste-to-energy facility.

**Mr HAYES:** Yes, but it would not be primary sorted then, would it? It would just go in with a whole lot of other plastics or into a bin.

**The CHAIR:** In the red bin.

**Mr L SMITH:** If your choices are—I was going to say the yellow-lid bin, but it is not the yellow-lid bin everywhere, is it—the recycling bin at home or the garbage bin, yes, that would go into the garbage bin. However, Coles and Woolies have both got recycling systems in place for some flexible packaging, and that system could be expanded or other systems could be developed.

**The CHAIR:** So what do you think about the Coles—I was not going to ask the question, but I will ask it—new promotion of Little Shop? Is that a good idea or a stupid idea? Probably your customers say—you do not have to answer that.

**Mr L SMITH:** I actually just read a newsfeed that said that Cleanaway has got that account.

**The CHAIR:** That is all right then.

**Mr L SMITH:** I am not worried about offending Coles and Cleanaway at all.

**The CHAIR:** But from a recycling point of view—and for someone with your experience—is that a good idea or a stupid idea?

**Mr L SMITH:** From a recycling point of view, I do not think it is a great idea, but a lot of the way we live our lives and the marketing that is associated with our consumer society is not a good idea. Now, I would like to change the big things first before I get down to the nitty-gritty.

**The CHAIR:** I think it is a stupid idea, but anyway it is good marketing.

**Mr L SMITH:** Yes, sure.

**Ms CROZIER:** I just want to return to your views about governments incentivising and using a waste levy for that purpose, and in Victoria we have got the Government sitting on a large pool of money. I am just wondering whether you have a view on how that money should be spent in terms of incentivising companies to deal with this issue.

**Mr L SMITH:** Well, I think, starting at the top, designers of all materials, not just packaging, should be educated in taking into account the consequences of the end of life of that material, and end of life should be designed into it, or at the start of a new life should be designed into it. That is going to take a lot of education, not in terms of TV campaigns but in terms of dedicated training for those people in how to prioritise those sorts of things.

A couple of years ago I and another consultant were engaged by Australian Packaging Covenant at the time to deliver designing for recyclability workshops for packaging designers. I was astounded that lots of packaging designers—it may not be the case today; this was about five years ago—were not really aware of where the material that they were designing ended up. Lots of them had the idea I think that there was a big room somewhere that it all went into and somebody looked at the number, and if they had the right number on it, then it was recyclable. They did not really understand that a lot of the choices about, ‘What happens to that item?’ are determined by the technologies that are used at the other end. So that is one thing. Greater education at the start of life, lots of promotion on proper sorting, maybe the development of new technologies and the funding

of better collection systems and better sorting systems right throughout the state. Sustainability Victoria has already funded lots and lots of small- to medium-sized projects, which I am sure have had great results but not a lot of them are actually going to change the world.

**Mr HAYES:** Hand sorting you talked about in your facility; I am just thinking about sorting out some of those plastics that all go into the hard waste thing at the moment. Say you take out all the best recyclables but there are still plastics from cheese wrappers and kids' games and things like that, is it viable to hand sort them once they come to a MRF or wherever they end up at the next stage of the journey from the kerbside?

**Mr L SMITH:** I think probably not, because the weight of a cheese wrapper would be just a couple of grams and we are talking about in excess of a million tonnes of material going out of Australia. I think we need to focus on not the bigger items but the items that make up the bigger volumes, or the bigger tonnages, first.

**Mr HAYES:** So we do get those bigger tonnages out; I am talking about the remainder and trying to avoid sending them off to landfill of course.

**Mr L SMITH:** But you have to bear in mind that whilst there is also very little consistency of collection systems and management systems across Australia, there is a lot of inconsistency between the type of sorting facilities that these materials go to. The sort of materials—for instance, in response to your comment earlier about polystyrene, if polystyrene went into a hand-sorting MRF, it would not really be such a problem because all of that would be picked and put into one particular bin. It is actually worth good money, it is just that it takes up so much volume for the amount of weight you have got. So if you have got lots of it, you get in a compactor that uses heat and compaction to make billets out of it. For that type of MRF that would not really be a problem. Also for that type of MRF, flexible plastics, like plastic bags and shrink wrapping and that sort of thing is not really a problem because you can pick it out by hand. If people started putting that in—if it was not just commercially generated but everything that came into the house went into that bin, I think it would make that whole stream very hard to deal with. But maybe eventually that is going to be the answer rather than sending it into the garbage bin.

When that material goes into a high-technology MRF, and if you are looking at the scale of more labour intensive versus high technology and everything that is in between, the volume goes up too. The labour-intensive MRF can only deal with a relatively small volume per hour, per day, per year, whereas the high-tech MRF can deal with enormous quantities but it cannot deal so well with contamination. For instance, if you have flexible materials or stringy materials like chains and power cords and garden hoses and stuff like that, that all ends up getting caught up in the screens. I have worked at a company that had some very large, high-tech MRFs and their only solution really to all of this stringy contamination was to stop the MRF every couple of hours and the guys would jump up onto the screen with cutting knives and physically cut off all the stuff that had been caught around the screen.

**Ms TAYLOR:** Obviously there are many different types of waste to energy, which I understand is different technology. I think you might have been referring to incineration. I think you referred to other types as well. The question I am working towards is when you have got the debris at the end, the ash—and factoring in that there may be some dioxins and so forth in there, depending on how well you can decontaminate the stuff that you burn—

**Mr L SMITH:** The dioxins would usually go out through the flue gases, and if you burn at a high enough temperature, there are ways of scrubbing those flue gases by putting a proper cleaning system at the back end of the facility. It is not going to end up in the ash.

**Ms TAYLOR:** Good. What we have heard through, which has been a great concern to me, is that we do not want to put a bandaid, because my understanding is that ash still has to be buried in landfill. You cannot just whack it out into anywhere. You have got to be thoughtful with that, I know, and I think in Germany they put it in salt mines to keep it safe. So how would we dispose of that debris? Because I think the purpose of this Committee is we want to have that full cycle of waste, so I would hate for us to create another problem.

**Mr L SMITH:** You are right. There are lots of technologies that are broadly referred to as waste to energy, but when I have said waste to energy today I am referring to what you would call thermal energy from waste

facilities, which is the burning of material rather than the production of gas and then the use of that gas for energy, although you do derive energy obviously from energy from waste facilities. In lots of places in the world—yes, even countries like Germany which have largely banned landfill—they still have landfills just for the ash. They are called monofills because there is only one item basically that is going in there. The eventual solution for a no-waste society is never going to be a thermal waste-to-energy facility, because in my opinion that is still creating material that is not going to go back into your economy other than as energy.

There are two types of ash. There is the bottom ash in the incinerator and what they call the fly ash, the stuff that coats the walls of the incinerator, that goes up into the flue gas scrubbing system. Those ashes can be used as additives in concrete. In some cases they have been used for making pavers for industrial use. It does not have to go into landfill, although as soon as you develop something with what used to be a waste product in it and enter a market that somebody else is already supplying, the price is going to go down, and then it is a matter of who can do it cheapest.

**The CHAIR:** We are running out of time. While on the subject of waste to energy—let us call it the rubbish bin, which is the red bin—there is some talk about whether you send the whole bin into waste to energy or install a sorting at the front end before it goes in. I think New South Wales were looking at something like that once—I am not sure whether it is your company or someone else—and then they ditched the whole project because it was too expensive. Have you got any view on that—where you try to recover 5 or 10 per cent of whatever is recycled out of the rubbish bin? Is that something which—

**Mr L SMITH:** I think we should always recover whatever we can for re-use.

**The CHAIR:** Re-use. Would that make waste to energy a bit more expensive to actually run if you put it at the front end? Or do you want to take that on notice and get back to us?

**Mr L SMITH:** Look, I can take it on notice if you like, or I can make some general comments, I suppose. I suppose to burn everything is a solution that is just one step—I would call it a half-step—above landfill in the waste hierarchy. I do not think it is where we should be heading eventually. I think it is just a step. I really think that waste to energy is part of the solution that our society needs for the residual after you have done everything you can to pull material out and either to avoid making it in the first place or to recover it or re-use it or reprocess it or somehow give it another life. Then if you cannot do anything else with it—and there is lots of stuff—for instance, tiny fragments of plastics. You are not ever going to be able to sort out a mixed load of tiny fragments of plastics, which might be what you get as the light portion out of the gritty remainder of an MRF sorting process. So that material would probably be better sent to an energy recovery system than it would be going to landfill. But that is just using the waste hierarchy to guide our decisions.

A better solution in long term would be to say, ‘Why did we generate that stuff in the first place? Why did it break into little fragments? Isn’t there a way that people who are manufacturing it can come up with something that does not break into little pieces or is made of a single polymer and we can actually recover it and re-use it?’. The answer may be no, but we should be going down that path.

**The CHAIR:** Instead of going to landfill it can go to waste to energy, and that is basically what the Germans are doing.

**Mr L SMITH:** Yes, they got rid of landfill basically in one fell swoop.

**Mr HAYES:** Landfill was seen as the last resort; now waste to energy should be the next last resort, I suppose.

**Mr L SMITH:** Perhaps. I still think we are not at the point yet where we can say, ‘Tomorrow let’s close the landfills’. To be quite honest, I have designed landfills. We make a lot of money out of landfills.

**The CHAIR:** But we should design them, because they stink.

**Mr HAYES:** We want as little as possible going to landfill, and next on the chain we want as little as possible again going to waste to energy.

**Mr L SMITH:** My opinion is that we should not be throwing away anything that has intrinsic value.

**Mr HAYES:** No. I think that there is a greater role for product stewardship there too, to reduce that last component of the rubbish bin, so to speak.

**The CHAIR:** On that note, we are 6 minutes out of time. Mr Smith, thank you very much for your valuable contribution. We really appreciate it, so thank you. A copy of the transcript will be sent to you in the next few days.

**Mr L SMITH:** Thanks very much.

**Witness withdrew.**