



**TRANSCRIPT
OF PROCEEDINGS**

SPARK AND CANNON

Telephone:

Adelaide	(08) 8212 3699
Hobart	(03) 6224 2499
Melbourne	(03) 9670 6989
Perth	(08) 9325 4577
Sydney	(02) 9211 4077

PRODUCTIVITY COMMISSION

INQUIRY INTO WASTE GENERATION AND RESOURCE EFFICIENCY

MR P. WEICKHARDT, Presiding Commissioner

TRANSCRIPT OF PROCEEDINGS

AT SYDNEY ON TUESDAY, 28 FEBRUARY 2006, AT 9.08 AM

Continued from 27/2/06 in Brisbane

MR WEICKHARDT: Good morning, ladies and gentlemen. Welcome to the public hearings of the Productivity Commission inquiry into waste generation and resource efficiency. My name is Philip Weickhardt and I'm the presiding commissioner on this inquiry. The inquiry started with a reference from the Australian government on 20 October 2005. The inquiry will examine ways in which waste management policies can be improved to achieve better economic, environmental and social outcomes. The inquiry covers solid waste and more specifically the issues associated with municipal, commercial and industrial, and construction and demolition wastes.

We've already talked to a range of organisations and individuals with an interest in these issues. Submissions have also been coming in to the inquiry following the release of an issues paper in December. We're grateful to the many organisations and individuals who have already participated in this inquiry and are appearing at the hearings. The purpose of these hearings is to provide an opportunity for interested parties to discuss their submissions and their views on the public record. We've already had hearings in Canberra, Melbourne, Adelaide and Brisbane. Today is the first day of hearings in Sydney. We have hearings again here tomorrow and then we're having hearings in Perth and then in Melbourne again on the following Monday.

We're then working towards completing a draft report for government by the end of May, having considered all the evidence presented at the hearings and in submissions, as well as other relevant information. Participants in the inquiry will automatically receive a copy of the draft report. We like to conduct all hearings in a reasonably informal manner but I remind participants that a full transcript is being taken. For this reason, comments from the floor cannot be taken but at the end of the proceedings for the day I will provide an opportunity for anyone wishing to do so to make a brief presentation.

Participants are not required to take an oath but are required, under the Productivity Commission Act, to be truthful in their remarks. Participants are welcome to comment on the issues raised in other submissions or by other speakers here today. The transcript will be made available to participants and will be available from the commission's web site following the hearings. Copies may also be purchased using an order form available from staff here today. Submissions are also available on the web site or by order form.

To comply with the requirements of the Commonwealth occupational health and safety legislation, I draw your attention to the fire exits, the evacuation procedures and assembly points. The first exits are out this exit door here and then out some emergency exit doors and immediately to your left, down some steps and across in front of the Hotel Ibis. The alert sound in this hotel is a traditional

beep-beep-beep sound and the evacuation sound is a whoop-whoop-whoop sound.

I would ask everyone in the audience to please turn off their mobile phones or to turn them to silent, and I now want to welcome Mr Richard Berry and a colleague from Collex. I ask you if you could just give your names and positions for the record, please, and your organisation. Thank you.

MR BERRY: My name is Richard Berry. I'm an executive director of Collex Pty Ltd.

MR WISKEN: My name is Ian Wisken. I'm with the Fifth Estate and adviser to Collex.

MR WEICKHARDT: Okay. Now, Richard, you should assume that we have read your submission, and you've been good enough to actually receive the commission on visits. I thank you for that. It's been most helpful. But if you want to make some brief comments to introduce your submission, or stress some key points, that's fine. Otherwise we can move, when you're ready, to questions.

MR BERRY: I'll probably make two points which have been raised by my people when I've circulated this for comment, which may not have come out. One is probably the comments about enforcement. It's probably unusual for a company to come forward and say, "We'd encourage more enforcement and more regulation of our industry." I could say that that comes in two dimensions.

One is, there are parts of legislation which make it harder for the EPAs to enforce legislation. The classic example in New South Wales traditionally has been the exemption for facilities which take less than 20,000 tonnes from certain tracing requirements, which unscrupulous operators have been able to utilise to take in far more than 20,000 tonnes. In one case the believed figure is about 100,000 tonnes a year, which then became a nightmare for the EPA to prosecute because they had to actually see the tonnages going in and you can't sit somebody there and trace it all the time. We initially thought that the EPA was being lazy and then we realised, when you actually start looking at what they have to go through to enforce it, it was a nightmare for them.

The second one is, one of the comments I made in the submission is about the requirement for knowledge. One of the positive steps which can be taken, and it's been taken in a number of jurisdictions, is to group councils together for disposal, in either formal boards or by alliances, with dispensation from the ACCC. We support that but when it occurs there needs to be a fair degree of caution that it's not used as a way of controlling the market. The example I would quote is in New South Wales, Waste Service has a number of facilities around the city. It is easier for them to

service a large area at a single rate and it makes it very hard for other operators to move in or to compete if it is a single contract at a single price. I think the ACCC are aware of the issues, but it can be very difficult. It can be an impediment on competition if there is a single contract for a very large area.

MR WEICKHARDT: Can I just clarify that? The ability of WSN to offer a single price in a wide area, is that based on them having infrastructure or landfill facilities in a range of areas so that they have more opportunity to service that efficiently?

MR BERRY: There may be a number of reasons. That might be one of them. If I take a hypothetical example: a region where one competitor has a facility somewhere towards the centre of it and we're out on the border of that region. We can service the area on the border of that region very easily but we can't service the one on the other side of the Waste Services facility, or whoever the competitor is. So it's very difficult to get trucks to drive past - and it's a question of whether they should drive past one facility to the next one. That was the example. It's not saying that you shouldn't do it. You just need to be careful when you are doing it.

MR WEICKHARDT: The whole issue of councils aggregating together seems to have some merit. I think it's been commented to us that one of the issues that perhaps mitigates against good compliance with recycling is the fact that local councils, even within a fairly small area, can have quite divergent policies on what they pick up and in what bins you put what, and residents who move only a small distance can suddenly find themselves in an area where there isn't any green waste or you don't put the plastic bottles in with the commingled waste. So the idea of scale and aggregation does seem to have merit but you're concerned that it also can have anticompetitive tendencies.

MR BERRY: Yes, but I do support the principle generally, but we are not trying to throw the baby out with the bathwater, I guess.

MR WEICKHARDT: Okay.

MR BERRY: They were just comments which came up that I may not have made sufficiently in the document, but otherwise we've set out what we think are the issues in the industry and I'd be happy to answer any questions.

MR WEICKHARDT: All right. While we're talking about the ACCC in competition, I might turn to the section you've raised in here; some concerns about the fact that WSN perhaps do not compete with you on a fair basis, and you've raised issues that go to the competitive neutrality principles. Have you actually raised a competitive neutrality complaint against WSN?

MR BERRY: The procedure is that you send a letter of asking for a justification from the department. We sent a letter of that form. We received explanations. We have a draft letter to the Productivity Commission which we have discussed with a number of government departments. We had heard that the New South Wales government was proposing to dispose of waste services. That's been mentioned on a number of occasions and if that was disposed of, that would address that concern, but I guess we've been reluctant to the formal step of lodging with the Productivity - - -

MR WEICKHARDT: The office to do with - - -

MR BERRY: Yes, the formal document.

MR WEICKHARDT: You quote some work by the OECD in its 2004 report on waste management being important on refocusing debate in Europe, and you say that this report is considered an important reference for the commission. Some of my colleagues may have read that but I have not. Could you give us the full reference as to that document please?

MR BERRY: I don't have them on me but I will provide a copy of the report to the staff.

MR WEICKHARDT: We might just check with my colleagues. They may have already sourced that but if not that would be - - -

MR BERRY: Okay.

MR WEICKHARDT: You make a point here:

The environmental agencies are caught in an interesting dilemma where they've used a simple message to get the community to be aware of the importance of waste minimisation resource recovery, but now need to be careful to ensure that policy measures recognise the complexities of the problem so that they are not, in themselves, wasteful.

MR BERRY: Yes.

MR WEICKHARDT: It's an interesting point. Do you have examples that you would like to draw to the attention of the commission where you think these policy measures actually risk forcing people into wasteful activities?

MR BERRY: If I start and I say the various different - and I will mix up which government has which one - but Towards Zero, Waste Zero, No Waste 2010 - there are a whole pile of names and slogans which have been used to make the community

concentrate on the problem of waste, and they have been very useful and I think a major success in changing community attitudes. The simplest picture that they can find that can be conveyed to people is the tonnages of waste flowing into landfill. I'm yet to be convinced that there has been any proper analysis in Australia of the economics and the benefits of landfill versus - and a series of the AWTs.

There has been beginnings of work done by people like Nolan-ITU, but they have concentrated on particular forms of landfilling as their benchmark. There are positive forms of AWT. There are questionable forms of AWT. There are positive forms of landfilling. There are questionable forms of landfilling. That's the perspective. So you have decisions made that tonnages will be diverted from landfill without consciously addressing what the environmental benefits of the alternatives are, and that's where the slogan is driving a policy, rather than the benefits driving the way in which things are done.

MR WEICKHARDT: If the analysis has not been done, what do you suggest should be done so that decision-makers have some better tools to actually make good decisions?

MR BERRY: I think the OECD report goes part of the way, the Nolan report goes part of the way. There has been some work, I know, that has been done in the past in the EPA in New South Wales, and I think in other states as well, on the cost to the community of various forms of disposal for the purposes of their load based licensing. I'm aware that that was done in New South Wales a couple of years ago but it's not public. I've only heard that from people within the EPA. I'm sure that there are other examples around the state and I apologise - I've tried to talk to our people in the different states in responding to you, but I am based here and I tend to be a little bit New South Wales-centric. That's the examples.

MR WISKEN: If I could just make a comment. Industry, I think, would be hoping that the Productivity Commission would address some of the external costs of the various options. It's a pretty unsophisticated debate in Australia. Waste has generally been the fiat of government, and policy has been directed to achieve certain outcomes, but very little attention has been given to costing the externalities, and I think that's - getting back to Richard's point about making distinctions between various types of activities or AWTs, various types of landfills and bioreactors, and certainly in the UK and in Scandinavia they have costed the externalities, and in the UK in particular they found that the major external cost was the greenhouse impact of escaping gases from landfills, and they attempted to cost that.

There's been work done in the United States with respect to that also, and that, in Europe, has driven a debate towards differential taxing according to the success or otherwise of capturing the gas and turning it to energy. So there has been a far more

sophisticated analysis that looks at those external costs. That really hasn't happened in Australia.

MR BERRY: The point that I would like to make about - there is good work in the OECD but it is very naturally Euro-centric. When your people look at the report, and I suspect some of them may have already, they will see that the examples are almost exclusively quoted from Europe. Europe basically does not have the quarries which we have. It does not have the mine holes. It does not have open. It does not have extended spaces. Their landfills tend to be quite small, right beside urban centres, and they tend to be old without particularly good lining. So you compare that - they also have a history of, right from the Middle Ages, they have been burning their waste downstairs to heat their houses during winter. They don't have the same social awareness of pollution risks from burning.

MR WEICKHARDT: You also have a comment, which is sort of related to the previous one but you're referring to the waste hierarchy and the risks of rigidly following that. You say:

There is a point where the costs of reprocessing or reusing waste exceed the value and the benefit that can be obtained, even when all externalities and other market failures have been accounted for.

Again, have you seen any examples which you'd like to draw to the commission's attention, where you think that risk has actually been experienced in practice?

MR BERRY: One of the problems is that I believe in a number of cases the costings of projects are non-transparent. For instance, there is a lack of knowledge within the community of the full terms on which the GRD plan UR-3R is operating. Without knowledge of the full terms, I can't make any comment on whether the costs are justified, but I can comment that I'm aware of somewhat similar facilities in Europe - they're not identical - that have been tried out with operating costs of over \$200 a tonne.

When you move into those costs, I have questions about whether the relative benefit of that against alternative levels on the pyramid are relevant here in Australia. I have seen costs in Europe of \$250 a tonne for disposal of waste. I'm not convinced that that money wouldn't be better spent within a community, whether it be on water or on preventing waste, rather than in the way of processing it. My understanding, and again I don't have this authoritatively, is that the EPA's work on load based licensing would have put the cost to the community of the better landfills operating now at far below the proposed levy in New South Wales.

MR WEICKHARDT: Do you have a feel for what number they would be using?

MR BERRY: My understanding is that their load based costing came out in the order of \$20, which is what they've been charging until now. They're now proposing to increase that.

MR WEICKHARDT: \$20 is a levy - - -

MR BERRY: Per tonne. 22 to 70 is the current levy. My understanding is - and again this is indirect information, but it accords with the OECD figures - that it was beneath \$20 a tonne. The levy now is proposed as an instrument to discourage landfilling.

MR WEICKHARDT: Given the fact that you are saying this is quite complicated and some of the numbers are not transparent, what is it that a group of local councils that are probably not incredibly well-resourced anyway should turn to to decide whether or not they're making a sensible decision in the long-term interests of the community in adopting a particular waste management strategy?

MR BERRY: I think local governments are aware of the issues and they are working on the solutions. One of the other reports which I wanted to mention today - and I'll give you this little flier, which is a report that was prepared by the Victorian Local Government Association. They commissioned a group of their officers to do a research project to look at options and costs. I wouldn't necessarily agree with all of their conclusions but those sorts of efforts are big steps in acquiring knowledge and disseminating knowledge within local government.

There was some very positive work done by some of the boards in New South Wales when they were around, by the regional boards in Victoria. I'm aware that other EPAs and equivalent organisations in other states are doing a lot of work in education at the moment. In New South Wales it's not called the EPA - I get mixed up following the titles. The old Resource New South Wales group, which is still basically intact within DEC have done a lot of work to educate, but we have an industry which has basically grown up in the last five or six years, moving from a very simple disposal which was only concerned with public health.

In the period of the last five or six years there have been very large strides made in acquiring knowledge, but there is still a long way to go. As in any infant industry, there are significant mistakes being made. The classic within the industry is the Brightstar experience, when something like \$140 million was spent by some very good scientists but totally wasted in the end, because the project didn't go ahead.

MR WEICKHARDT: You mentioned the UR-3R facility and we are actually

seeing Global Renewables in Perth - I think they're appearing at the Perth hearings - but it's been put to us at hearings in Melbourne and Brisbane that there's an issue at the moment with compost and its application and finding a home and a market. Somebody yesterday at the Brisbane hearings quoted a stockpile of some enormous quantity - 440,000 tonnes - of excess compost in the Sydney market. In this situation, is there a risk that a significant number of dollars a tonne - you quoted \$200 - are being consumed converting organics into another form of stabilised organic that has no ultimate home in the market?

MR BERRY: Again, it's reasonably common knowledge in the industry that the New South Wales EPA has extreme reservations about whether it's been established that you can take MSW and turn it into a valid compost at any commercial level. I believe there are some disagreements within the EPA on that, but their only public documents, I think, have indicated very significant concerns and that they wanted a level of testing before they would be convinced, because the compost standards don't address pathogens which may exist in an MSW-derived compost.

The European experience - the information we have out of Europe now is that the processes like UR-3R, insofar as they treat the organic fraction into a compost, are considered only as a stabilisation process on the way to something like landfill. They're not considered as a valid compost. That's what I've been told out of Europe from people that were actually looking at using UR-3R as a stabilisation process. I'd leave it to UR-3R to explain to you more about their process because we don't have full details of it.

But yes, there are very significant issues as to the extent to which compost should be used or how it should be used, and one of the things which I would quote is our group is quite heavily involved in biosolid derived use out of the water treatment plants or sewage treatment plants in Europe, and that being used for agricultural purposes. When you are doing that you want to have very rigid monitoring protocols to make sure that you are not contaminating valuable land with heavy metals, for example. Our people do a lot of work on the actual application to land and that is starting to happen here in Australia as well and there are some good little companies that are doing good work there.

MR WEICKHARDT: We were told in Melbourne, by one of the councils who are looking at an AWT facility in Melbourne, that the comparison for them of an AWT compared to a landfill bioreactor of the sort that you have at Woodlawn was not, for them, a valid choice because the Victorian government policy of not liking landfill meant that they really couldn't choose a bioreactor, and yet, if the material that comes out of an AWT is going to landfill itself, that seems a rather bizarre consequence of their policy.

MR BERRY: I think that's an example of what I quoted to you where the slogan is driving the policy. I think if you actually spoke to the guys in the EPA they would then start talking balances. Both the Victorian EPA and the New South Wales EPA, they will start talking about the balances. They understand that there is a balance to be drawn. The difficulty is that to get a message out - you can't send out a complex message when you're trying to get people thinking about something in the first place.

It sounds like we do everything right. I would have to say that we have had a number of disasters in the field of composting; not massive disasters, failed businesses. We have worked a lot in trying to develop markets and your comment about the availability of a market is 100 per cent correct. It is a very - any waste which doesn't have a market or doesn't have a place where it can be beneficially used, it's a waste for the time being; and stockpiling things that may one day be of use is a question to me.

MR WEICKHARDT: Do you think there are solutions here? I mean, people have made comments that sound plausible, that a lot of Australian soils would benefit from application of organics and yet, as was highlighted in Brisbane yesterday, this is a sort of fundamental dilemma which may not be overcomeable by the laws of gravity and physics; and that is that most of the waste is generated in areas close to urban centres. Most of the agriculture is away from those centres and compost is quite expensive to move from A to B.

MR BERRY: There are definitely successful niche markets. Whether there will eventually be a large-scale market I think is still out to be decided. The niche markets are best addressed by early sorting or by source separating, so you have people like EarthPower who have a good niche business here in Sydney which captures energy and which produces a good level of compost, but they have to be rigid in their sourcing. They have had a lot of difficulty in getting their process going but I believe it's going well now.

We have found a successful market for green waste-derived compost in Melbourne and one of the interesting markets is a market like mushrooms which are actually grown reasonably close to the urban centres, so they have a large demand for compost and so that's - but again, they're not going to want MSW-derived compost. They're going to want green waste-derived compost.

There are opportunities. One of the things which we are working on which maybe you saw - I think you visited Woodlawn - is we're hoping to develop there a facility which will process compost which can be used in the remediation of that site. That can be a test, from our point of view, and we're hoping that we will produce a couple of different qualities of compost there, some of which may be able to be used generally for land base, but that will be something which we will have to develop

and approve over time, I believe, rather than leaping into general agricultural use of compost quickly. The logistic costs are very significant, and processing costs.

MR WISKEN: There's also an interesting issue, if you go back to the external costing of composting. If you take, for example, that the greenhouse impact is a major external cost - if you accept that argument - then open composting is a major contributor in - - -

MR BERRY: Yes. It's not as bad as you think, Ian. Sorry, I will just qualify you on that.

MR WISKEN: No, but if you cost it and you provide a direct comparison then with other reuses of the organic material such as in a bioreactor where you get a high waste to energy conversion, then you're starting to look at a balance of costings. You can make some real decisions about what is best both for the environment and from a policy outcome. That work needs to be done to increase the sophistication of the debate.

MR BERRY: When we say the work needs to be done, I mean, you might say, "Well, why don't we do it?" We have done most of it but, coming from us, it has a certain flavour so we encourage other people to verify, rather than us being the ones that stand up and tell everybody that we think we know what's going on and presumably we would be biased in our own commercial interest.

MR WEICKHARDT: You make a comment that new key performance indicators should be developed for waste management to reflect sustainability objectives which reflect environmental benefit, value and cost; not just tonnage. Do you have any in mind?

MR BERRY: If we put it in - there are indicators which can be developed. Whether they can be simple one-line indicators for the entire market is another matter. For instance, the issues are gas capture, which we talked about in energy production. Another one is the value of the recyclables which are generated, rather than just the tonnage. To suggest that a ton of building waste recovered has exactly the same value as a ton of metal, it's just an obvious false comparison. So the value, I think, has got to be one of the key ones. The second one is the toxicity - to be taking toxics out - and that's what the EPAs have tried to do in their load based licensing.

MR WEICKHARDT: Okay, thank you. You say on page 19 of your submission that the levy should deal with market values and provide incentives for behavioural change. I guess the question is, what chance is there of landfill levies achieving behavioural change given the problems in relaying the market signal to the

householder who, for the most part, pay a flat fee; whether their bin is sort of empty or whether it's full? I mean, if the incentives are to be supplied by rebates or exemption, what are the problems which are created in terms of compliance and avoidance or evasion? I guess, alternatively, should the levy be applied to products as an advance disposal fee rather than at the landfill?

MR BERRY: Yes. If you're trying to change attitudes towards waste, I don't see that you achieve a change to the community attitude towards waste by concentrating on one particular way of disposal. That, I guess, is probably my first point. Councils do tend to counsel officers and the councillors do tend to look at the total bill. It's one of the biggest expenses - signing a waste contract - that any of them will ever see in their lives. So there is some attention paid to the total cost. I don't see it as being an amazingly significant driver in changing community attitudes. It is noticed at the commercial end, so when you're looking at building waste, people notice the cost there of the levy, and that does generate conduct. I don't think that's a problem. You actually see that in what has been achieved in changing the level of recycling of building waste.

I might leap in there: this is not in answer to your question, but it is an issue which I did touch on in my paper, and that is that the occupational health and safety issues in relation to recycling are significant, and it's no secret that we are right at this moment considering whether we can continue to operate a major building recycling operation in New South Wales because of occupational health and safety issues. It's a combination of the risk of asbestos within that waste flow and the safety of people that we might put in there to inspect, to check that there is no asbestos in the flow.

MR WEICKHARDT: Okay.

MR BERRY: Sorry to change the topic.

MR WEICKHARDT: All right, thank you for that. In terms of the mooted sale of WSN, do you have any view as to whether or not any particular conditions should be put on the sale - in other words, should the landfills be sold separately from the rest of the business?

MR BERRY: If I was another player in the market, I would probably be very keen to see WSN split up in the sale. We have established a bridgehead as Collex. We have a transfer facility in Sydney; we have a landfill; we have a capacity now to develop that into other technologies as well. Other players are faced effectively by a gatekeeper who controls the flow, so if I was somebody else hoping to enter the market, I think I would be hoping that at least a number of the transfer stations were separated from the main body as a minimum. It's no secret that Collex would probably be interested in trying to get one or two as well, but I think other players

would be as well.

What used to happen in landfills, fortunately before I became involved in the industry, is a matter of legend within the industry. What may be in there is a concern, so there is an issue about taking over that responsibility. It may well be felt that that is a community responsibility, because people used to just come in and dump things in there, and the final clean-up of those landfills, of the old landfills, might be accepted as a state or as a community responsibility rather than transferred to a new buyer. That's a possible policy decision.

MR WEICKHARDT: One final question: you talk about sensible policies in the conclusion of your submission, and it says:

In terms of looking at a subsidy or a rebate arising from the levy, it should be set at a rate which at least puts the recovered resource on a par with virgin material by balancing any external costs associated with the virgin material.

What did you have in mind?

MR BERRY: I'm not an expert on mining costs - I make no pretence to be - but it is regularly suggested within the recycling industry that they are competing on an unfair playing field. Let's take a can of aluminium. What are the costs which have been externalised to the mining and production industries in producing that can of aluminium, be it in cheap power, be it in free use of land? What are the costs that have been involved in producing that can? If we are externalising some of those prices and making them being borne by the community generally - and I think there are clearly some but I can't calculate the total amount - then the recycling should receive at least the same benefits.

MR WEICKHARDT: All the benefits that recycling receives should be also counted, too.

MR BERRY: Yes. I agree with that.

MR WEICKHARDT: Thank you very much indeed for your submission. Thank you for appearing at the hearing. We will adjourn briefly, and the next participant is Evergreen Energy Corporation. Thank you.

MR WEICKHARDT: Our next participant is Mr Alan Martin from Evergreen Energy Corporation. If you could just give your name and position, please.

MR MARTIN: Good morning, Mr Commissioner. Good morning, ladies and gentlemen. My name is Alan Martin. I am the managing director of Evergreen Energy Corporation Pty Ltd. I will present for approximately 15 minutes this morning on Evergreen Energy's submission to the Productivity Commission's public inquiry on waste generation and resource efficiency. Just a little bit about Evergreen Energy and who we are: Evergreen Energy is a private company that was formed in 2001 to enter the waste treatment industry in Australia. From 2001 to 2005, we investigated alternate waste technologies with a specific focus on deriving energy from waste, particularly organic waste.

In late 2005, we signed an exclusive partnership agreement with Kompogas. They are a European leader in anaerobic digestion technology. In 2006 Evergreen is actively pursuing its strategy of sourcing organic waste and locating sites. Evergreen's mission statement are the following: to become a significant company in the organic waste industry in Australia and New Zealand; to produce renewable energy and extract valuable fertiliser and compost products from organic waste; to be a good corporate citizen in the field of environmental management; to promote the benefits of its licence technology to the community; to promote the benefits of diverting organic waste from landfills; last, but not least, to create value for its investors and shareholders.

My Evergreen submission this morning will focus on four themes as shown on the slide and, in particular, my submission is primarily centred around organic waste in the waste stream. It's not dealing with plastic or metals, it's primarily around organic waste. The four key issues that I would like to speak on in general with a presentation are the following - and these are the issues that are, as you know, being investigated by the commission. Firstly, what are the economic, environmental and social costs and benefits of waste, and waste-related activities? Second, what are the market failures, including externalities associated with the generation and disposal of waste? Third, what are the economic, environmental and social benefits and costs of recovering energy from waste? Last, other particular products or locations for which recovering energy from waste would be the most efficient approach to waste management.

Firstly, dealing with the issue of the economic, environmental and social costs and benefits of waste and waste-related activities, I would like to touch on what is now deemed to be one of the more toxic of greenhouse gases and that's methane. Methane, if you do not already know, is produced from the decomposition of organic material. Green waste, any household organic waste, that goes into a landfill degrades, decomposes and methane is produced. It's generally accepted now that

methane has a global warming potential of more than 20 times that of carbon dioxide.

Closed-circuit anaerobic digestion can achieve almost 100 per cent capture of methane during decomposition of organic waste, whereas landfill biogas collection systems cannot achieve this. The removal of organic waste from landfill reduces organically derived leachates and toxins from entering the groundwater system, which can be at a huge cost to the communities that are associated. Anaerobic digestion, such as Evergreen's Kompogas partnership, could process in excess of 30 per cent of the organic material that's currently going to landfill, thereby reducing landfill volumes to make more space for other non-toxic materials and inert materials. Also, very high quality compost and liquid fertiliser can be incorporated back into the environment. These are the waste products, the products that are produced during this Kompogas process, thereby enriching the soils and effectively completing that ecological cycle.

The second issue to deal with a question by the Productivity Commission is the market failures, excluding externalities associated with the generation and disposal of waste. We believe that perhaps more renewable energy credits would encourage the production of electricity from biogas rather than the disposal of organic waste in landfill. The current treatment of organic waste in open windrow composting appears to set the economic benchmark, because sometimes it is seen as the only or also the lowest cost option. Low-cost landfill rates in eastern Australia and also, in particular, in Victoria, appear to be governed more by the supply of air space and not the full costs of disposal. In the full cost, I mean what is the cost to the community and the environment of methane emissions, what is the cost of the pollution of waterways by leachates derived from the decomposition and what is the cost of the rehabilitation of landfill sites once they're capped?

Other issues, other technologies, that are sometimes looked at to treat waste is incineration. However, incineration destroys valuable carbon and nutrients that we believe should be recycled back into the environment. Not to knock current composting techniques, but the basic composting techniques that are employed today are now being questioned by some authorities as to their ability to consistently destroy contaminants. By that I mean bacteria, weeds and pathogens. Also leachates may still enter groundwater systems if there aren't proper controls in these composting areas.

Third is the topic of the economic, environmental and social benefits and costs of recovering energy from waste. Here I've taken the diagram from the Productivity Commission's paper on the waste hierarchy and you can see at the top you've got "Avoidance" and on the bottom "Disposal". At the moment the organic waste that is sent either to landfill or to any other waste area is about 250 to 300 kilograms approximately of organic material that is produced from each household. In a city of

3 million to 4 million people, say in Sydney, you're looking at almost a million tonnes - you know, seven, eight, nine hundred thousand tonnes - of organic waste.

The issue with avoidance is that it's just a fact of life. We don't believe that you're ever going to avoid generating a certain amount of waste, but of particular importance is how it's disposed of. Evergreen Energy in its Kompogas partnership will deal with the issues in the middle, and that is recycling, recovery of energy and treatment. Following on from that, one of the ways to recover energy from waste is, as I've mentioned, anaerobic digestion. Why is it a benefit to the community? Well, (1) it maximises the recovery of the resource that is inherent in the organic part of the waste stream. It allows for 100 per cent diversion of methane - again, remember, toxic - greenhouse gas from the atmosphere and that can be used as a fuel.

The system is essentially carbon dioxide neutral. When you break down anaerobic digestion, what is produced is solid fertiliser, liquid fertiliser, but also CO₂ is produced in the process. The CO₂ that's produced is essentially the same CO₂ that was used by the plants and fruits in the reaction of photosynthesis, so there's no net addition of carbon dioxide back into the environment. That's what we mean by CO₂ neutral. The methane that's recovered can also be produced into electricity or what's often referred to as renewable energy, because there is going to be a renewable stream and a never-ending stream of that organic waste that's generated by society. In some places - particularly in Europe - they use the methane as compressed natural gas or CNG as fuel for vehicles. They have two fuels.

Just a bit about the Kompogas process. A typical plant treating 25,000 tonnes of organic waste would produce the following products: more than 10,000 tonnes of high quality, hygienic compost or solid fertiliser; more than 10,000 litres of liquid fertiliser. Both of those products, I think we would all agree, would be very beneficial to the environment, given the tough conditions in a place like Australia.

Especially with a drought, liquid fertilisers are in high demand, but also enriching the soils which tend to be poor at the best of times. There also is an electricity surplus that's generated from the methane. As I mentioned, you put the methane through a gas generator and more than 4000 megawatt hours of electricity are produced by processing that methane and that's enough to power almost 1000 homes.

The equivalent energy of the electricity surplus is equivalent to about 1.4 million litres of petrol so it's reasonably significant and that's only with 25,000 tons of organic waste and just bearing in mind that, as I mentioned, Sydney would produce 800,000 to a million tons of organic waste every year. Melbourne would be much different in terms of the actual quantity per person or per household.

Last, what about the issue of locations for which recovering energy from waste would be the most efficient approach to waste management? We believe that if it can be avoided, the transport of waste to areas that are, you know, long distances, should be avoided because of the cost of transport, and the Kompogas technology that we have entered partnership with, we would be able to set up plants in major metropolitan regions: Sydney, Melbourne, Brisbane, et cetera, and especially situations where there may be a symbiotic relationship, producers of significant amounts of organic waste, food processors, agricultural industry, et cetera, can provide the organic waste - the supply of organic waste - and we can produce electricity and there's also surplus heat that's produced with this process. We feel that the key is to limit the transport and to link into existing infrastructure.

Just a bit more about locating sites: Kompogas plants do have a fairly small footprint compared to current processes of a similar scale. They are controlled environments in which the anaerobic digestion is maintained at high standards. The plants are sealed, which limits any odour emissions into the environment and plants, as I mentioned, can be located very proximal to population centres. The technology is proven and robust. There are more than 30 plants operating in Europe and 15 plants are under construction. We believe that this sort of process can guarantee to the community a long-term contract to sort of lock in disposal costs, which should be a benefit.

So in summary I would like to hit you with some key conclusions from my submission today and I guess the first thing is that waste generation, as we see it, is a serious long-term issue for communities and the environment. The generation of waste is not going to go away. Given that if you accept that point, then we believe that it's really the effective and efficient treatment of waste - you know, if you can treat waste more efficiently, more effectively, and recover what we see as valuable resources from the waste stream and to limit the amount of waste that is actually disposed of at the back end.

As I mentioned, there are valuable resources - energy, electrical energy and heat energy - from this process and in anaerobic digestion itself and high value natural fertilisers, being both solid and liquid fertilisers, are produced. Another important thing with the efficient treatment of waste, especially organic waste, is a diversion of this material from landfill. There still is a lot of organic waste being sent to landfill at the moment all around the country, and the less that goes to landfill would prevent toxic substances - leachates, which can carry heavy metals - being released into the environment: the soils and also the waterways. You can see that the prevention of this sort of situation would be of benefit to both the environment and could be quite costly to the community.

The other thing is just in general the avoidance of long-term costly

rehabilitation of landfill sites. The less that goes into landfill, the less you have to rehabilitate. We believe that Evergreen and its partnership with Kompogas could provide a solution to the treatment of organic waste in the future. That's the bulk of the presentation but I did have some photographs that I would like to show you.

This is a demonstration plant just outside of Zurich in Switzerland. Don't worry about the stack. It's not an incineration process. That would just be where the CO₂ is emitted in the normal anaerobic digestion process. At the left-hand side that's where the trucks would go in and deposit the material. You can see - it's not very clear but in the sort of back right there are houses back there - it's a sort of semi-suburban industrial area. We actually had lunch less than half a kilometre on the other side of a road and, you know, you don't notice that there's a plant here treating organic waste. If you go inside the plant, yes, it does - there is an odour - but there's no odour emitted to the surrounding environment, so very environmentally friendly.

That's because the area is sealed, as I mentioned. I think in the left photograph trucks would drive up, deposit organic waste and then you have got, on the right photograph, the organic waste being - that's just material that's going to be sent to a shredder before it gets put into the digester.

This is a typical digester. It's the vessel where the organic material would sit and naturally occurring microbes break down the organic material, and the methane is then captured and put through a gas-fired generator. The outputs are very valuable to the community and the environment. On the top left, soil condition or very high-value compost. The bottom photograph is - that's a hydroponic greenhouse and there is no soil on those beds at the left. They're just gravel beds so the plants are drip-fed with the liquid fertiliser that's produced during this process and you can see lush plants. We ate some of the tomatoes. I mean, the vegetables are lush and ripe. On the right-hand side, as I mentioned, in Switzerland and other parts of Europe they use methane as a fuel and it's just like the taxicabs here. There's a tank underneath, there's a compressed natural gas and they can sort of change from normal petrol to methane and there's no change in the output and it's not very expensive either.

That's just our chairman on the left, visiting one of the Kompogas plants outside of Zurich, and our technical adviser on the right, and that ends the presentation.

MR WEICKHARDT: Okay, thank you very much indeed, Alan. First of all, a comment. You make in your submission and also in your presentation the comment that this process is CO₂ neutral because the CO₂ that is omitted was CO₂ the plants actually originally utilised to grow, I think in reality you could make that comment if you extended it to coal and oil too. I mean, at the end of the day, all the fossil fuel

came from plants originally, so I'm not sure that it's a particularly legitimate comment really.

MR MARTIN: That's true but if you think it through, the CO₂ in fossil fuels was at one time taken in but that's a net addition. If you have a coal seam underground or a gas field underground, the utilisation of that resource does end up with a net addition of CO₂ into the atmosphere, whereas this process would treat organic waste, as I mentioned and, yes, it produces CO₂ but that CO₂ is then used by plants again and the plants produce - and then the process produces CO₂. So it's the same CO₂, you could say. I mean, you couldn't map it but it's the same CO₂ that effectively leaves our process, that goes back into the plant and we take that plant material and put it back in the digester, so it's the same CO₂. Effectively there's no net addition, whereas the burning of fossil fuels, if you kept the coal in the ground there wouldn't be any more - you know, if you kept that coal seam in the ground. I'm not suggesting that one does. I mean, coal is a valuable resource. However, there is a net introduction of carbon dioxide from the burning of fossil fuels.

MR WEICKHARDT: I think it's exactly the same cycle. One takes thousands of years. Yours takes a slightly shorter time.

MR MARTIN: Right.

MR WEICKHARDT: You also made the comment in your slide that your process prevents toxic products released to the environment. I'm assuming that the input to your facility is actually pre-sorted organic waste.

MR MARTIN: It is.

MR WEICKHARDT: You're not taking toxic products into your process, are you?

MR MARTIN: No, we don't. This process would treat pre-sorted organic green waste.

MR WEICKHARDT: I'm not commending this as an alternative, but I'm just trying to test the veracity of your comment. If that product went to landfill, what toxic products would be released?

MR MARTIN: The toxic products released if it goes to landfill, you've got - when organic material is decomposed it does produce leachates which can actually enter the groundwater system and that's regarded as a toxin. The removal of that - - -

MR WEICKHARDT: But surely most organic products have gone to landfill. As I say, in the process of making coal and oil, that's a pretty natural process. If they're

just straight green waste I would have thought that was a part of nature that probably isn't all that offensive. It may produce greenhouse gases, but I can't see that green waste going to landfill actually is an unnatural process in some ways. It may not be the best process, but I find it difficult to see that that can produce toxic leachates.

MR MARTIN: If you look at the literature and the chemical process that occurs, the sort of decomposition of green waste produces - you know, it can produce leachates which can actually carry - and the material can be actually toxic to groundwater systems. It's in the literature.

MR WEICKHARDT: I have to say I'm deeply sceptical of that. You talk about the advantage of your process versus windrowing and composting via windrowing. Apart from the issue of the temperature and therefore perhaps ensuring weed control pathogens are not carried through, what do you see is the big advantage of your more capital-intensive facility? You talked about capturing methane, but I understand windrowing doesn't actually produce methane, it produces CO₂. What do you see is the big advantage of the expensive capital facility you're commending here?

MR MARTIN: The big advantage would be (1) the production of much higher value fertiliser, much higher value material. It's difficult to get a homogenous treatment of composted material in open windrow composting, so it's a very basic form of composting. This process treats the organic material at a higher temperature; 50 to 60 degrees. It's more homogenous in its treatment, so you produce a higher value product that totally eliminates any bacteria or seeds. You can't guarantee the elimination of bacteria, especially if you're using biosolids. If any composting process is using biosolids, you can't guarantee that the bacteria will be removed.

There is then the methane. You do capture the methane. It's more a complete recovery of the full resources that are available, rather than just producing a basic sort of compost material.

MR WEICKHARDT: Roughly speaking, what's the capital cost of one of these units?

MR MARTIN: A 25,000-tonne unit would cost approximately \$15 million.

MR WEICKHARDT: How much?

MR MARTIN: 15.

MR WEICKHARDT: 1-5?

MR MARTIN: 13 to 15, yes.

MR WEICKHARDT: Have you done the economics on this sort of facility in an Australian environment and, if so, what sort of value do you have to realise for the compost to make this economically sensible?

MR MARTIN: Yes, we've done some. We're in the process of doing an economic analysis. The key to the process is the gate fee and then - as are most waste-treating facilities, it would be the gate fee and then the value of the compost, both solid and liquid. Bear in mind current sort of composting processes would not produce a liquid fertiliser. Then the value of the renewable energy of the electricity.

MR WEICKHARDT: What figures notionally do you have to assume on gate fees, on values for this compost, liquid and solid, to make this sort of thing fly?

MR MARTIN: We're still doing the market research at the moment, but you would be talking about gate fees that are more similar to, for example, the Eastern Creek facility in western Sydney. Their fees are north of \$80 a tonne for the gate fees. If you look at I think basic composting fees, they tend to be around the \$50 a tonne area. We would be closer to the similar fees at say Eastern Creek. Given that the process produces a higher value solid fertiliser, we would expect with marketing that we would fetch a better price for that compost or solid fertiliser and then there's also the liquid fertiliser.

MR WEICKHARDT: We've been told there's a significant surplus of compost in most markets around Australia from various sources. In these circumstances do you think you're likely to get a significant premium and price for your product?

MR MARTIN: I don't think we would be competing with normal sort of mulch, as they call it, or open windrow composted material. Yes, I have heard that there is a surplus of this material in the marketplace. I don't think we would necessarily be competing with that product, given that our product would be more attuned to a soil condition or at the very top end of a soil fertiliser. We would, I think, be more at a high-end niche market, rather than competing with basic mulch or compost, which is clearly not what's produced in the process.

MR WEICKHARDT: Okay, well, thank you very much indeed for appearing and for your submission. We will adjourn briefly now and start in about five minutes.

MR WEICKHARDT: Mr David Somerville from the Southern Sydney Regional Organisation of Councils. If you would just give your name, position and organisation for the record, please.

MR SOMERVILLE: My name is David Somerville. I am the programs manager for the Southern Sydney Regional Organisation of Councils.

MR WEICKHARDT: Thank you. If you want to - - -

MR SOMERVILLE: Yes, I would like to, if I may, just read out a prepared text to supplement our submission. I'm happy to take questions thereafter. Sir, the SSROC, as it's more commonly known, is a peak body for the councils of Botany Bay, Canterbury, City of Sydney, Hurstville, Kogarah, Marrickville, Randwick, Rockdale, Sutherland Shire, Waverley and Woollahra councils.

SSROC provides a forum for our councils to develop common policies and approaches to the challenges facing the southern Sydney region through resource sharing, shared policy development and advocacy. This verbal submission is intended to clarify and supplement the points raised in SSROC's written submission to the commission, and focuses on those issues relating to or influencing local government in an urban context. Our written submission has identified those approaches taken at a regional level which are assisting member councils to introduce positive changes in resource recovery or provide better management of health risks caused by waste creation.

This verbal presentation looks at the background to the costs and benefits of waste activities incurred by councils and explains further why our councils have chosen collective approaches in the present situation and what strategic choices lay ahead in the years to come. The first area that the inquiry is covering is the economic environment and social costs and benefits of waste and waste related activities.

The main economic, social and environmental costs of waste activities to SSROC councils have and continue to be the following: the expanding costs of collection related to multi-bin kerbside services to residents; the growing net damage to councils' road infrastructure caused by the increase in collection vehicles in number and frequency of travel across council areas; the increasing gross unit cost of downstream disposal to landfill as a result of levy instruments; the net cost of diversion to recovery facilities as a result of increased levels of consumption in recyclable materials; increasing costs of maintaining the amenity of public places as a result of consumer purchasing habits and the entry of temporary visitors to public sites such as beaches and parks within our region; increasing levels of air pollution resulting from greater heavy transport activity, the legacy of poorly designed

landfills resulting in contamination of water catchment areas and breakout of methane gas emissions; increased heavy transport activity in local areas causing higher levels of noise pollution, ground vibration, vehicle emissions, and the social cost of increasing traffic congestion and extended travel time of vehicles to drop-off points perhaps outside our region; the deteriorating visual amenity of increased heavy traffic movements in residential areas and the increasing potential risk of traffic accidents as a result of these increased vehicle movements along local streets.

Balanced against these cost structures are a set of responses which have, or are likely to have, relative economic, environmental and social benefit to the southern Sydney region. Two examples of economic benefit experienced by member councils has been the stabilisation of operational costs resulting from group procurement activities. Recently a short-term contract for the disposal of general waste by member councils has established a fixed price for that service which would otherwise be an open market varying gate fee.

A second example has been council's ability to encourage the development of local infrastructure by the bulking up of products supply through group contracting arrangements. In 2004 the group contracting by three member councils for the processing of recyclable kerbside material has encouraged the establishment of new materials recovery facilities within southern Sydney. This has led to significant reduction in gate fee costs and reduced travel distances for collection vehicles. In the area of environmental benefit, the introduction of a regulatory framework at both state and federal levels has led to significant improvements in the design and management of landfills and resource recovery infrastructure.

However, the degree to which environmental benefit can be primarily achieved through action and enforcement against breaches in environmental regulation is dependent on the ability of the regulating authority, whether a local council or a state federal agency, to gather appropriate evidence to prosecute successfully such offenders. This situation is particularly problematic for many of our member councils in the area of illegal dumping in public places. Multiple benefits are beginning to be realised in the area of new infrastructure across the Sydney metropolitan area.

Two recently constructed facilities - one near Parramatta and the other near Blacktown in western Sydney - are beginning to divert organic wastes for energy production through anaerobic digestion processes and the recovery of fibre residues for the horticultural and related industries. The benefits cited above are a response to the costs of waste production. Apart from some job creation opportunities, there is little evidence to suggest that the production of waste is intrinsically good for local communities. However, in the wider economy there is strong justification for increasing waste production because the approach underpins the manufacture and

retail system of varying life cycle usage of product and the expansion of net consumption of products and materials by the general population.

The second area the inquiry is covering is the market failures associated with the generation and disposal of waste. SSROC is generally supportive of the serious concerns raised by the Boomerang Alliance in their submission to this inquiry. In particular, SSROC believes that there needs to be a national approach towards introducing the following market mechanisms to address the problem of negative externalities associated with waste disposal. The introduction of extended producer responsibility would provide greater collective responsibility for dealing with waste outcomes and, as stated in the alliance submission, shift the burden of waste from ratepayers and local governments to consumers and brand owners.

The widening of a container deposit approach to product recovery introduced in Australia would also be beneficial, in our opinion. If extended across the other states of the nation, such a system would help to drive higher rates of container capture in the public domain, operate as a self-funded recovery program and reduce the increasing problem of littering. The third area that the inquiry is covering looks towards strategies which would be adopted by government and industry to improve economic, environmental and social outcomes in regard to waste and its management.

Longer-term opportunities are emerging for local government to work at a regional level and beneficially influence and respond to the environmental, social and economic effects of the increasing - and what is increasingly being seen as - unsustainable consumption levels of products and materials across the wider economy. The southern Sydney region is continuing to change in population density as the state government begins to implement a metropolitan strategy for addressing current and future growth in the Sydney basin.

Land values continue to rise and land use is changing, reflecting these demographic pressures. State government policy on Sydney's growth is to encourage concentrations of medium- to high-density housing along main transport corridors and around current or future centres or hubs. There is also growing public pressure to maintain public amenity as Sydney matures and follows the pattern of growth in major cities around the world. With the continuing inflow of people to southern Sydney, SSROC has undertaken an initial review to analyse member councils' current waste services and the options that could become available for improving service delivery in the coming years ahead.

A summary of the report's findings is attached to our submission. These findings indicate that improvements in the delivery of municipal waste services could be made by responding to the following criteria: firstly, the topographical or

physical constraints of the urban environment, and secondly, the consumption outcomes of the different types of residents who live across the region. In relation to urban constraints, member councils have long-term opportunities to provide different types of collection services which respond to specific environments. These environments range from the concentrated pattern of terrace housing in the eastern suburbs area of Woollahra, Waverley and the City of Sydney, to the wide avenues of the detached housing across such areas as St George, in Hurstville, Kogarah and Rockdale.

There are indications that consumption outcomes tend to reflect lifestyle choices which different types of residents make. For example, transient visitors to one area, such as backpackers or university students, are likely to make different choices to those of well-established groups in another area. Similarly, there is evidence to suggest that residents in medium- to high-rise units tend to make different lifestyle choices in the consumption and disposal habits to residents who live in low-rise areas.

Member councils are currently assessing the conclusions of this initial report before proceeding with more detailed studies if they are warranted. In conclusion, member councils of SSROC are progressively moving forward with resource recovery initiatives and look forward to working with state and federal agencies to make these improvements sustainable.

MR WEICKHARDT: Thank you very much indeed, David. A few questions that I have: you talk about the benefits that the Southern Sydney Regional Councils have gained by working together. I guess my question relates to whether if some is good, more is better. I mean, if this works at that grouping, why don't we have one grouping of councils or one group that handles all waste across urban Sydney. Is there a role for local government at a council level in waste recovery and disposal options now, or has this become an area where the technologies, the choices, the scale mean that really it would be much more efficiently dealt with on a total state basis or certainly a major regional centre basis?

MR SOMERVILLE: It could be argued that that's already happening through the Department of Environment and Conservation at a policy level. The experiment with the waste boards back in the late 90s was brief. I won't go into the rights and wrongs of their disbandment but - - -

MR WEICKHARDT: I would be interested if you could comment on those.

MR SOMERVILLE: I think there was concern by industry, particularly about the varying directions that the waste boards were taking. There was a legitimate concern that there wasn't a single overriding strategic direction, given that the communities

around Sydney aren't particularly dissimilar and whether or not one overarching waste board to work complementary with Waste Services New South Wales, as it was then, would have been more beneficial in providing a stronger strategic direction. As it was, I think the waste boards tended to be working in isolation from each other, with the perception at least that that was occurring, and that did disadvantage the impact, that progress that some, if not all, the waste boards made in their own particular areas was worthwhile.

Getting back to your point about whether it would be a good idea to amalgamate councils, as a result - - -

MR WEICKHARDT: I didn't mean in all respects but in terms of responsibility for waste. Is this something that now would be more efficiently and effectively dealt with by a more aggregated body?

MR SOMERVILLE: Not necessarily. It depends how state and federal government sees the role of local government. As I mentioned, I think, in my submission, one of the original roles of local government was to be the custodian of public health in the local community, being the most appropriate agent to deal efficiently in a safe and healthy environment for their communities. Whether or not you want to replace that by another higher authority may in fact make the decisions at a local level more remote and - - -

MR WEICKHARDT: I think it happened with sewage, didn't it?

MR SOMERVILLE: Sydney Water would be, yes, responsible for water reticulation around Sydney and obviously the disposal of sewage. What's interesting is that that hasn't actually been raised. Whether or not the forthcoming inquiry the state government is holding in municipal waste management is going to address that, we're not altogether sure at the moment. It may have merit. It then becomes a political issue, I suspect, probably outside my terms of reference.

MR WEICKHARDT: Okay. Now, you made a comment in your verbal comments and you also refer to this issue in your written submission about extended producer responsibilities and you particularly use colourful language in your submission that:

The practice of local communities supporting the packaging industry and their customers is not sustainable, it is an inequitable system. There needs to be shared responsibility between manufacturers and consumers for the life cycle of packaging products.

You said, I think, in your verbal comments that the extent of producer

responsibility shifts responsibility from ratepayers and the burden is sort of sent to manufacturers but, in my simple mind, the consumer always pays. If you say to a producer, "You have to take responsibility for managing this product at the end of its life," the producer is simply going to add that cost up-front. The ratepayers are consumers, so ultimately what is the benefit of shifting the point at which the consumer feels the cost of disposing of the surplus products?

MR SOMERVILLE: I don't think the consumer necessarily does pay for the external costs of disposal in tossing a Coca-Cola can on the side of the road or, as he should do, in a litter bin in the public domain.

MR WEICKHARDT: They pay rates.

MR SOMERVILLE: Yes, but I may be a visitor to the area and I'm paying rates out at Wagga Wagga and I have come to Sydney for the weekend and I have chosen to buy a can of Coke or another soft drink - not to name them in particular - and then I decide to discard it in a variety of ways. What we're suggesting is that kerbside recycling and local government's responsibility for the public domain is quite an onerous financial requirement on local government. The sharing of the costs, these externalities, as has been noted in quite some detail in the issues paper that the commission has raised, needs to spread that cost more fairly in certain sectors of society, such as in a public place, and that the assumption that local government and the local ratepayers should actually pay for imported rubbish or rubbish created by visitors to an area, we argue, is not equitable.

MR WEICKHARDT: I guess that depends on the size of the collection area and how much is imported and how much is exported from that particular area. All I'm trying to say is you, I think, colourfully say the burden is on local government. My point is local government has no burden. The ratepayer has the burden. The ratepayer is the person that bears the cost.

MR SOMERVILLE: The government represents the ratepayer and they're democratically elected and they make decisions on behalf of the community.

MR WEICKHARDT: So the question is, for the community, where is the best place for the member of the community and where is the most efficient place for that member of the community to bear the cost?

MR SOMERVILLE: I think we're talking about a suite of initiatives. There's not one solution here. There should be a variety of solutions to fit the circumstances in which product ends up in the waste room. We're not against kerbside recycling. I mean, councils would be - I wouldn't use colourful language like "horrified" but I think they would be concerned if kerbside recycling was to end and be replaced by

another system, because it has taken local councils some considerable time to build up an understanding by local residents about the merits of recovery. In that circumstance it just so happens to be whatever you buy in the shops, take home, consume, should return through a particular system.

MR WEICKHARDT: I guess, coming back then to the sort of price signal that somebody who disposes of waste should feel, I accept that there's not a very direct price signal at all from the material that somebody puts in their bin. They pay the same rates regardless of whether they fill their bin or whether they don't fill their bin. My question is, given the size and the cost, when somebody buys a product, if that price was totally embedded in the cost of the product that you bought, would that be sufficient to actually change behaviour?

MR SOMERVILLE: It depends. Rate increases reflected by, say, the cost of a waste levy which the current state government has put on the city metropolitan area is relatively insignificant on the cost of a rate. It's a matter of a few cents. So if you're looking at that as a mechanism - - -

MR WEICKHARDT: And it might, if you look on the price of the soft drink - - -

MR SOMERVILLE: Exactly. I don't think that's necessarily going to give the right behavioural response, although I can't profess to have a lot of knowledge in that area but it's something that the studies I referred to - the report - the initial findings, I think we will be looking at exploring these areas in further detail to see if they have merit.

MR WEICKHARDT: You mentioned in your submission a - is it Bower Reuse and Repair Centre?

MR SOMERVILLE: Yes.

MR WEICKHARDT: In which you suggested -

specialised in recovery of waste stream and household domestic products for resale and reuse. Receives many calls from people in the Sydney region who wish to donate or otherwise get rid of unchanged product. As a result, the Bower centre receives a significant oversupply of product, much of which it's unable to receive.

MR SOMERVILLE: Yes.

MR WEICKHARDT: Does this suggest that the councils aren't actually providing a user-friendly service that helps people recycle or reuse product so that they find

that either illegal dumping or hoarding, or some other solution which might be suboptimum, rather than reuse and repair and recycle occurs? If the councils don't make it easy for people to actually deal with that sort of product, and centres like this that are set up sort of get flooded, isn't this an issue the councils ought to be dealing with?

MR SOMERVILLE: Yes, well, each council deals with this issue in different ways. Again, as we know, the elective process is that councillors are elected and then they respond to the needs of the community as they see it in their election. They make decisions in which council officers, through the general manager, carry out those activities.

MR WEICKHARDT: We've been consistently told in this inquiry that surveys of ratepayers say that they're all in favour of recycling. They love the idea and in fact I think somebody has quoted that 60 per cent of them would be prepared to pay more money.

MR SOMERVILLE: Yes.

MR WEICKHARDT: Why don't councils simply put up the costs for their rates and provide more services that help people do these things?

MR SOMERVILLE: Because if there isn't a downstream home for, say, a mattress where you can actually recover the material from that mattress for reuse, and mix in with virgin material to make more product, then the process of recovery becomes just a cost to council. That cannot be recovered. Those costs cannot be recovered. That product cannot be recycled. You could argue presently that maybe in a few years' time that could be.

There are a whole range of products and the Bower focuses on those products which are not readily recyclable. I mean, we're not talking about containers, we're not talking about paper, we're not talking about green garden organics. We're talking about that multiplicity of miscellaneous product that people use - furniture, curtains, you name it, a whole range of electrical and electronic products - which don't really have - if they were to be abandoned - there are small embryonic markets which are currently trying to recover the product but, in general, there's no overarching system of recovery at the present time.

The Bower, which we believe - we want to support the notion that many products do have a potential extended life and through fashion choices that people make, they may no longer want that product, whereas someone else in another part of the community may want to recover that and reuse it. This provides a good trading opportunity for that to take place. I mean, the Bower operates on a shoestring. It

nearly closed last year because the revenue stream didn't cover its cost structure. It's to be seen much more as a community experiment than a thriving section of the recovery industry. Because it's a nonprofit, nongovernment organisation, it isn't driven by commercial incentive.

MR WEICKHARDT: I guess the question is how much of what councils are considering implementing in the future is driven by the state strategy and how much do they reflect the interests that the councils perceive of ratepayers? For example, to achieve the targets for diversion from landfill that the state government has set will presumably require considerable investment in alternative waste treatment facilities or recycling facilities, or some other processing sort of facility. I guess the question is do the councils make a judgment as to whether or not those sort of facilities are sensible from the point of view of their ratepayers and have they done a sort of cost-benefit analysis of those sort of options?

MR SOMERVILLE: At an individual council you probably don't have the size and the economies of scale to make that a reality at the moment, so you would really be - - -

MR WEICKHARDT: But your association does?

MR SOMERVILLE: Again, this recent study that we've carried out could well lead us down to looking at the stratification of services that better reflect the environment and the choices that people make in their habits - in their consumption habits. Yes, I think generally local government would see merit in greater recovery of difficult waste streams such as organics and putrescible waste. It would be very supportive of state government in particularly the concern of toxic waste and the problems of illegally dumped material, which again has quite a high profile in the government's policy on waste avoidance and resource recovery.

MR WEICKHARDT: I guess I was sort of trying to tease out from you your comment that each local government does what it thinks is in the best interests of their ratepayers and yet this issue of, well, if you're going to meet the state government recycling requirement you're probably going to have to group together as a group. The question is collectively do you decide then, "Well, yes, this sort of target actually is in the interests of our ratepayers," or, "Regardless of whether we think it's in the interests of our ratepayers, because the state government tell us that we've got to meet these diversion targets, we'll do it."

MR SOMERVILLE: I think local government or councils see the state government's strategy as in many ways a best endeavours approach. Being a policy of course it gives an outline on intent. One of our concerns has been the lack of an implementation strategy; how that's going to be achieved in practice. I know there

has been considerable debate recently about the question of an infrastructure plan linked to the metropolitan strategy for the future of Sydney - transport strategy and amenity strategy - which is all integrated in the debate on how we use and discard products, so there's a major gap there.

We're really, you know, increasingly concerned that in order to meet these targets we need really quite clear direction from state government as to how that's going to be achieved. Particularly in the southern Sydney region there is a great lack of infrastructure for the processing. Conversely, it's quite a serious political debate about where that would be sited; where it's in the best interests of the community. We know that every local community will say, "It's a great idea, but we don't want it behind our garden."

MR WEICKHARDT: You have beaten me to my next question, which was if your association believes that some facility like an AWT would be desirable, then where are you planning to put it in your area, because you made the point you don't want trucks driving - - -

MR SOMERVILLE: As I mentioned earlier, heavy transport activity is really becoming an increasingly serious problem, and congestion and the general nature of the complex road system that Sydney has, you know, already created is quite problematic and the rat run is created. If we're going to shoehorn another - well, a lot of figures have been bandied around, but say another 300,000 people in our region, are they going to buy a car, are they going to drive to work? You know, where's the public transport? That contributes to the problem of congestion and urban stress that our communities are going to experience.

I suppose, getting back to your point about alternative waste treatment technologies, we carried out a waste audit in our region last year to really identify what types of waste people were still disposing of, and we got a pattern emerging of waste disposal. We're concerned about the accuracy of the figures. I think I mentioned that we would like to see a much more rigorous approach to statistical analysis of studies on how people - the volumes and the types of wastes that are generated, because we only get really a very indirect view of waste production from the current waste auditing methodologies that are currently being used.

There is a strong indication that the largest single form of waste now generated in organic in nature; food-related waste. It's heavy and it's probably seen as problematic from a health point of view, of course. I think that would be the area where we could achieve and exceed the target set by the state government in relation to the 65 per cent to be recovered by 2014. As I think I mentioned in our submission, the organic trials could be one of the most significant areas of work that we do in the next year or two. In fact, we're just about to prepare for these trials,

where we want to do a full life cycle analysis of the options in relation to whether anaerobic digestion is the better option or whether landfilling - you know, going down to Woodlawn - would be a better option or not.

MR WEICKHARDT: Who's doing those trials for you?

MR SOMERVILLE: We're doing it in-house actually.

MR WEICKHARDT: With your own resources?

MR SOMERVILLE: Yes, although we are looking at commissioning a consultant to do economic modelling of the performance measurements that we're going to get out of the trials. We're getting another consultant to look at the upstream complexities of what makes a community want to change their behaviour.

MR WEICKHARDT: That will be particularly interesting.

MR SOMERVILLE: Mm.

MR WEICKHARDT: You make a comment in your submission that the waste industry within New South Wales tends to operate as an oligopoly.

MR SOMERVILLE: Yes.

MR WEICKHARDT: And as a result of this market condition you believe that the pricing for diversion of material away from landfill is likely to track the cost of disposable landfill. Now, that suggests that actually the materials that are being diverted away from landfill are not being valued for having particularly valuable resources that could be recovered from them. Indeed, if they had valuable resources that were being recovered from then you might actually expect that they had a negative gate fee.

MR SOMERVILLE: You would expect that, wouldn't you?

MR WEICKHARDT: Yes. So what do you make of all that? You say this is simply due to a distorted market?

MR SOMERVILLE: I think it's realities of the infrastructure that is currently available for recovery, and again the externalising of those costs. If they were internalised then I think materials recovery would have a greater intrinsic value, but the question is who actually pays for the development of that infrastructure to make those resources of greater value than the manufacture from a base source, from a base resource, and the energy input into and then the development of the products

that we see on the shelves today? I think that's the point I'm really trying to make. I'm not implying at all that there is any collusive behaviour in the marketplace. I'm just saying that's the reality of the situation.

MR WEICKHARDT: But part of the reality of the situation, we are told, is aggravated by the behaviour of local councils in that the barriers to entry for people trying to establish re-sorting and recycling facilities in areas close to where the waste arises are very high. Somebody cited the fact that there was a MRF that was attempted to be established in Botany, that after four or five years the private company that was trying to set this up just gave up because it was too difficult. If local council on the one hand want to encourage recycling, surely they have to accept that infrastructure has to be put in place that allows this to occur efficiently.

MR SOMERVILLE: Yes. But I think it's the role of state government to act as an arbiter to actually have a plan to say, "Look, we are going to go through a consultation engagement process with the community, probably through local government, operating right across the Sydney metro area," because, as we know, local councils under the Local Government Act are responsible to their own community. So they are - there is a problem if they're not in this regard. So there needs to be a collective approach made to look at the long-term benefits of the siting of such facilities.

MR WEICKHARDT: It seems to me - this might be simplistic - that local government can't have it both ways. They can't say on the one hand, "We want to retain responsibility for waste," and yet not take the collateral consequences of planning for it. If you are going to push the collateral responsibility of planning for waste to the government, surely you should push the responsibility for managing all waste to the government.

MR SOMERVILLE: Yes, that is a significant problem for council officers to address because they have to make decisions which are in the best interests of the community but being mindful of the political dynamic of the decisions that also need to be made. It is a dilemma that is facing local government, but it's something that we think, from a collective point of view, we can overcome in time, particularly with the changing dynamic of the Sydney environment.

MR WEICKHARDT: One last question from me: it's been put to us by some people who are in the construction and demolition recycling area that one of their biggest frustrations is that they find it very difficult to encourage some people who procure materials to actually use recycled materials because they cite specifications that, "The product ought to be a virgin raw material." Deep in the headlights of this accusation are lots of local councils. Do you have a policy in SSROC that your specifications for purchase should (a) all be performance based and (b) should at

least put recycled materials on the same footing as virgin raw materials?

MR SOMERVILLE: If the performance of the recycled material matches the performance required of the outcome of that product, then yes.

MR WEICKHARDT: Do you know whether your specifications in council - - -

MR SOMERVILLE: The road repair and maintenance contracts that recently went out to tender do acknowledge that certain types of road base can be made from recycled product. So from an engineering stand and specification point of view, it is, and that was one of the outcomes of one of the Waste Board's projects that came out in the late 90s. So there is growing acceptance by the professional staff in local government and beyond that there are opportunities for using recycled product if it can meet the standards required of that specification, and I think we will be encouraging that, wiping out into other areas, if in fact the use of recycled materials can match the specification required.

MR WEICKHARDT: Good.

MR SOMERVILLE: I would just like to come back to one point you mentioned about this vexed issue of infrastructure and the siting of infrastructure, and just say that in the recycled processing facility contract that I cited in the submission, the verbal submission, with three councils successfully tendered for - did in fact site that facility in our region without any major political or other disruption, and in fact greatly reduced the travel distance for the collection vehicles to that facility. So we do have examples of being able to introduce small scale - it's as much scale as anything, and it's not in fact the siting of the facility so much as the heavy vehicle traffic that's generated that travels to and from that facility that's the major problem.

It's the heavy traffic activities that are of concern primarily, and not merely just the siting of a facility because, as we have seen from other submissions, you can develop zero emission facilities which are run very well under strict EPA requirements, which overcomes that problem of siting but not the problem of the entry and exit of vehicles, which is really the main concern.

MR WEICKHARDT: Okay. Thank you very much indeed, David. Thanks for appearing and we will adjourn now for about five minutes. Thank you.

MR WEICKHARDT: Our next participant is Mr Mark Glover from Eco Waste and Mark, if you can introduce yourself and your capacity in which you are appearing before the hearing right now.

MR GLOVER: Mark Glover, a director of Eco Waste, which is a resource management/sustainable resource use consultancy of some 30 years standing.

MR WEICKHARDT: Do you want to make some general - - -

MR GLOVER: Just a few remarks. As I say this initial submission, I went to the trouble to answer all 74 questions in some detail and using the opportunity to prophesise slightly for a changing paradigm from waste management to resource recovery, and would like to dwell on that, and presumably since I have written most of it down, concentrate on answering your questions, but I think the summary of it is that I think the waste industry is something that nobody wants. We don't accept waste in any other form of life. We find that we try and get efficient and remove waste in most of what else we do, and so waste and the waste industry is fundamentally what we don't need.

What we do need is systematic resource recovery for all sorts of reasons, which I have alluded to in my submission, and that an awful lot of it, in my view, can be adopted by simply using a fully-informed market structure. The problem is it's not fully informed and it's not a full market, and all sorts of prices aren't properly reflected. Where they can be and where they are, we do tend to find market forces in the pursuit of self interest tends to give us the right results, as long as they are properly commercially telegraphed.

There is a strong role, I believe, that the time has come - and I think this commission at this inquiry is a very useful opportunity to try and draw a line in the sand between waste management and resource recovery. The process - in my daily life, in my day job I'm actively in the process of building and constructing - I think is something that we need to move to a set of systematic, centrally coordinated through the federal government system of resource recovery that is designed from the ground up, that is designed with the manufacturers involved in the thinking through of what services are required. If there's any part of our existing waste management system which can be adopted or used, so be it, but it shouldn't be the starting point for what we should be trying to do from hereon in.

I think out of all that, if we are going to make change - and this probably comes to an opportunity we will talk a bit later in the morning, where we have done this with the tyre industry. I think, as an underlying opening comment, there's tremendous room to achieve that sort of major paradigm shift to have central, coordinated, properly thought through Commonwealth planning for this new

infrastructure - taking the water example from submissions earlier this morning but taking it on a broader scale - with local government amalgamated into regional sections as supply authorities into that system, with state governments doing nothing more than being the regulators and adopting local conditions as a regulator.

But the systematic planning since the market for the products, the materials and the end markets that come from this are all national. They are no respecters of state boundaries. I think we're basically looking at local government as supply authorities amalgamated to concentrate on just what we have to do - collect it appropriately and pass it on and not worry about necessarily what happens to it - and that this infrastructure on a national basis needs coordinating on a central Commonwealth basis to get the efficiencies which will be needed so that these materials do present as valuable resources and no longer as squandered resources or wastes. So with that provocative opening I'm available for questions on the submission, or I can talk to it in more detail if you would like me to.

MR WEICKHARDT: Let's ask questions and talk a bit at the same time. I'm sorry, this might not be necessarily a completely rational order in which to start, but I will go through the things I have marked in the order I have done so. You talk about the use of virgin material versus recycled and recovered materials. In bold you say:

Virgin materials need to be transparently priced, including the full costs of primary extraction and conversion, the cost of existing government subsidies, et cetera.

The question is, where don't you believe that that is happening and are you absolutely confident that if what's sauce for the goose is sauce for the gander that recycled and recovered materials are also transparently priced where the costs of all government subsidies and support, et cetera, is built into those?

MR GLOVER: The point made with virgin extraction of resources, as referenced in the submission, are the full collateral impacts of the original extraction, the conversion, the ecosystem services which I attempt to put a figure on as being something in the order of 50 per cent of what the market price currently reflects, and that's referenced as to where that information came from. Whatever it is, it's a big figure. That is, we know that the very establishment of a corporation - the very idea of a company structure - is all about externalising costs to make them more efficient in what they focus on doing.

They do that very efficiently so that the costs of the public roads, the costs of the effects on land for extraction, the effects of remediation afterwards, the assumption that the biosphere can absorb whatever emissions they choose to put to atmosphere or to water or land degradation that can't be reused for other purposes -

all of that is assumed to be a community cost, less so nowadays; there's more effort in that in the mining industry - but certainly that's the history so that the net least cost of extraction can be prevented as the original material for conversion into the product.

The conversion pathways - those primary industries, as I'm sure you've researched on numerous occasions - the amount of government subsidies to support primary industry in those endeavours to make them internationally competitive may all be wonderful things for gross national product and for our national competitiveness, but when it comes to a fair assessment of those materials recovered and returned, benchmarked against the virgin equivalents, we aren't in the same ballpark.

The recovery of the materials themselves - in fact, I have an example from my own experience - where we have managed to demonstrate, with my commercial hat on - we actually have a used oil refinery operating in Wagga. We're the first and only facility of its sort in the country, which is the only recipient of the highest benefit at the moment of the oil products stewardship scheme. But we've managed to prove, although it's not necessarily referenced in my submission, that the recovery process with all externalities where we possibly can, internalised into the refining and re-refining of that material can be put back into the market at a price which is cheaper than virgin extraction of lubricants and that - - -

MR WEICKHARDT: Is that taking out the product stewardship subsidy that you receive?

MR GLOVER: That's a matter of scale, so the issue there is that small demonstration plants need the subsidy; full-scale commercial ones don't. That's purely a scale issue. So the next generation of them won't need the subsidy. They enjoy it. It's very nice to pay off capital quickly, and that's another opportunity to stimulate new infrastructure to be constructed, but there's an opportunity where you find that by having a facility that has no effect - the boundary isn't connected to the server - complies with all its EPA requirements for no emissions exceeding the limits over the boundaries, a minimal impact on the local area is managing to produce the same material that the original extractors are fighting wars over around the world.

It is possible - and we will come later in the morning to the tyre equivalent, which is proving exactly the same point. So the broad thrust of the argument where it's in the submission where you've highlighted it is that for governments currently the approach to, "Is alternative management of waste affordable?" always tends to be benchmarked against landfill, and the argument that I am supporting in that proposal is that that's not the benchmark. The benchmark isn't, "What is the cost of essential and important resource recovery against the disposal option which is unsustainable?"

It should be against the alternative source of those materials as put back into the productive economy at a quality and quantity and to a price which can work in a free market system, as long as the market is properly informed as to the real value of the materials in the first place.

It might not mean, in policy terms, adding the cost of extraction onto the virgin materials. That might be very difficult for international trade. But there's all sorts of ways you then use MBIs to establish the playing field against something that's real and not something that's just perceived, like landfill levies at the moment, which are a very blunt instrument that aren't focused directly at the particular problem they're trying to resolve.

MR WEICKHARDT: I understand the point you're trying to make. It, in my very limited experience so far in this inquiry, seems to me that some of the real costs of recovered materials are much less transparent than the costs of virgin materials. It seems to me that people have levies, they have EMRETs, they have state government support, they have all sorts of resources that are input. Indeed, in trying to work out the economics and the justification for some of the recycling and recovery schemes that are in place, I have to say the data is very opaque. We have been trying to understand, for example, some of the information around the AWT facility that exists at Eastern Creek. It's not very transparent as to whether or not the full costs of the recovery process have been really accounted for and whether this is delivering a net community benefit or not, and we're trying to understand that better.

So I accept your point that full costs of virgin material should be examined but I think, apart from some of the issues that you have talked about, that these might be using uncosted eco services, but I think resource recovery also requires resources.

MR GLOVER: Yes.

MR WEICKHARDT: And they use eco services too.

MR GLOVER: They certainly do. So my argument would be that if you had, basically, a fully informed free market in the process and that these costs were for everybody fully established, it is the basis for determining where extra assistance might be required. I think you will find that in all the general materials the nonspecific difficult either high value or high toxic materials, or particularly awkward icon-type materials, that that broad thrust of a fully-informed market would in fact give us some really important data as to where we need - will remove a lot of the perceived market failures by simply having that approach and that then, if there is anything left over, we can look at it in isolation. It will be the exception rather than the rule.

MR WEICKHARDT: Okay.

MR GLOVER: Of course, a lot of the costs of recovery at the moment are based on the fact that the system that you're trying to recover these valuable materials out of is a waste management system designed around being paid to cart it away and do what you can with it after it's left over. A resource management system set up specifically for recovery, where the focus is on producing products to a market that you have identified - and you can't believe how lucky you are that someone is actually paying you to take them away - is a whole different paradigm. You do think quite differently. Your efficiencies change dramatically.

As we'll show later on with tyres, which was an intractable waste for ages - we've now got the data available to you this afternoon - by taking a resource management approach you suddenly discover that not only do you not need to be paid to take tyres away, you can in fact afford to pay to receive them. That value comes from the inherent resource value in the products themselves and the notion of service is simply an opportunity to - materials recovered from waste streams aren't going to be systematically used back in a productive economy if they have to apologise for their origins. We simply have to get them out so that they fit back in in the normal course of business, but it does pose some responsibilities on how they're manufactured and we'll presumably come to that shortly.

MR WEICKHARDT: You make a point later on in your submission that waste exchanges have always proven to be a waste of time and effort. It has been put to us that in live situations one person's waste is another person's resource.

MR GLOVER: Absolutely.

MR WEICKHARDT: And that there are some good examples where industry has actually capitalised on reprocessing and reusing a resource that another organisation saw as a waste product. Lots of stories and more stories of frustrations in doing that sometimes, but why do you say that these waste exchanges have been a waste of time and effort, and how do you suggest that people should be better informed about the opportunities to view waste not as a waste but as a resource?

MR GLOVER: It's a definitional issue, so I'm very glad of the opportunity to clear that up for you. Let me give you an example that we all understand where waste exchanges effectively work in a sector that we all rely on on a regular basis. The basis to my comment is no-one wants to buy waste. They want to buy products. They want to buy things they can use. They don't want to buy someone else's waste. Waste by definition comes with very little by way of specification as to its quality, its quantity and its reliability of supply. The definitional issue is by-product exchanges is a whole different kettle of fish to waste exchanges. That's perhaps the crux of the

response.

If we take an example that we're all very familiar with of the livestock industry, which has had an opportunity for the last 150 years to mature and for the economics and rationalisation to occur, we find a very simple industry which on the face of it is growing big black cows to make Sunday joints but, as time goes by, the butchers have discovered that there are a whole lot of lesser cuts that go to other purposes and that if the farmer starts to look after his steer and take the rough edges off his fences, you'll start to find that the hide is now suddenly more valuable than it was and it's not something he has to throw away. You'll suddenly discover then that the industry matures. There is no such thing as waste. There is just a continuous trade in by-products. The materials from one level have trickled down to the next and there's nothing left but a memory, but the whole poor beast has disappeared.

That has allowed a significant amount of maturity and time for that industry to develop its codes of practice, develop the transitional process by which - I mean, the butcher's trimming your Sunday beef and is trying to leave your jogging requirement the following morning to a minimum. He's trimming off bits that perhaps were the most tasty morsels, but they finish up - you'll find the bits of bone and the bits of fat go in separate containers because they're going somewhere separate afterwards. That concept works in mature industries without intervention, but nowadays things are moving so fast that that level of economic maturity has had little or no chance to occur.

That is an area where by-product management - one person not making any waste whatsoever, simply making core business product and anything that they don't want which is surplus to the requirements in a manufacturing process - is presented ready for the next person to use as a valuable by-product. It's a simple concept. It works a treat and you can think of lots of examples where it occurs, but I've got two old overcoats and a dead fan and would anyone off the net please come and buy them off me? No. You would find a very limited requirement for people who want two old overcoats with the elbows cut out or whatever it happens to be. Again it's a definitional process.

If, on the other hand, the two old overcoats have been particularly sewn up and made into something that's a fashion item or they've turned it from being a nondescript, non-described waste into a product which is definable and the person wanting it can get some flavour of the benefit they'll get from making the purchase, you've moved from waste management into resource recovery. These are the sorts of areas that need to be stimulated as we work our way through the very complex introductions right through the productive economy. Does that help?

MR WEICKHARDT: Yes, I think you're right. It is a semantical issue, if I

understand you correctly. You made the point about the sort of mechanistic following of the waste hierarchy and you say, "Well, this is sort of fine for the amateur but the professional needs to sort of think more seriously about the implications of following this and be conscious of the resources that are involved in any of the choices that you make." Other people have put to us that - I mean, there comes a point of time where the resources required to actually recover something useful out of some products exceeds the value of the recovered material.

How is it that you suggest local councils or state governments should reach informed views on how they should proceed in these areas? Because, as one of our last speakers commented, in some cases the mantra is actually driving decisions. We had a council in Victoria say, "Well, we couldn't consider that option because that would be considered to be landfill, which is again state government," so they hadn't done any economic evaluation of whether or not this made more sense. They were simply being driven by what you've suggested the professional shouldn't be driven by.

MR GLOVER: The concept that's adopted really I think is a concept called highest net resource value. The "net" means subject to the cost of extracting and recovering that value. The materials that I think are the subject of your inquiry are what I've collectively called urban solid wastes of the three streams combined. We might have been quite dramatic to appear this morning with a bin of such material and on the table in front of us have emptied my bin out, if you would let me, and then we could all have put gloves on and taken knives, forks and spoons and selected our way through it for the course of the morning. What we would have finished up with was no waste at all. We would have finished up with a pile of quite simple homogenous organics, a whole pile of polymer-sorted plastics, colour-sorted glass, a few recognisable metals, some Hoover fluff and perhaps a dead rat; but we would have actually worked through that it was only a waste because it was mixed.

Therefore, you then come back to another item in my proposal which for the sake of - I can actually provide you with a copy. You've actually got that already, but it's one way of quickly coming to a conclusion. The selection of highest net resource value is something where you can actually start to work your way through. You can build in the circumstances of the arisings of the material, the local demographics, the access to markets, but there are a lot fewer choices in doing this systematic unravelling of urban solid wastes than might appear the case if it's just a truckful dumped on your front lawn. There's nothing in urban solid waste which is a waste. All of it is potentially a resource. It's only there because of mixture.

It doesn't matter which way you look at it, the material arises and goes down two options. Option 1 is some level of source separation and option 2 is where it has been left mixed and it's heading off down a residual route for some sort of value

recovery. There aren't any other options. You're either picking it up mixed or you're picking it up as an homogenous source. The homogenous materials, whether done deliberately through kerbside recycling or because at the furniture factory the bin is all full of the same wood waste and therefore it can go to a particular end use because it has been kept clean, can head off down traditional recycling resource recovery opportunities.

The rest of the material which didn't go down that route for one reason or another - the behaviour of the person doing the discarding, the way the material was manufactured originally so as to make certain options impractical, is going to finish up going down a mixed route. The options there become incredibly small. You finish up, after going through any form of AWT, with those basic generic types down the bottom which, for the benefit of those who don't have the little coloured diagram in front of them, you will finish up with a generic level of metals recovery, you'll finish up with a mixed high calorific fraction which was predominantly the hydrocarbon based materials. It will include your plastics, toothbrushes and old running shoes; materials that originally had a hydrocarbon start.

There will be the organic fraction which will have - there will be small crossovers and contaminants. It won't be as high quality as normal compost. You will finish up with inert residuals; the brick ends, the broken china, the material which is fundamentally an inert material. You will finish up with, if you go to that level - not that I'm here to espouse the Eastern Creek facility, but you've got an opportunity there to start to decrease the levels of toxicity in these materials by either physically removing gas cylinders and car batteries or later diluting that material into large volumes of water to have that effect. You will have a last opportunity to get a lower quality of carryover recyclable material that's missed part of - there are no other options. That's it.

AWT itself as a broad headline doesn't deliver solutions and ends and markets to that. It's simply a process of starting the source separation, more or less efficiently to reduce those particular streams. What's missing is where those materials go. Metals have an existing market which is fairly straightforward, although it needs to be expanded into some of the smaller volume lower quality materials. The high calorific fraction we can address in a lot more detail when we get to energy later in the morning, but there's a process for handling that. The moist biomass materials aren't your top quality soil-separated organics for composting and within the commercial interests that I represent, Camellia, the digester, is one of our stable of enterprises, so I do understand how digestion operates.

MR WEICKHARDT: Just pause there for a moment. A fairly large chunk of the municipal waste actually does go down that - if it's separated - organic stream.

MR GLOVER: Up the top.

MR WEICKHARDT: And, you know, whether it's green waste to start with or whether it's just mixed organics, if it goes that route it ends up in compost of varying quality.

MR GLOVER: Correct.

MR WEICKHARDT: It has been increasingly repeated to us that there's a huge excess of compost in the market.

MR GLOVER: Yes. This isn't part of my submission, because it's a commercial and confidential issue that we're working on as my day job. You're absolutely right. I totally agree. There is a surplus of compost made because it's an easy process to make. The top-quality stuff has an enormous use in and around its locality. It has a drawback in that never mind its benefits, it can't afford the transport to go back to where it's needed.

I would be more than happy to, under a different set of circumstances if it's possible, give you a detailed briefing on processes that commercially we're operating on with all the paper mills and pulp mills in the country at the moment; which is taking that carbon and getting it back to soil in a different form, which overcomes the tyranny of distance. It increases the value by an order of magnitude over and above what it is and it doesn't need an inquiry. It hasn't required any government assistance. It's a process that we're getting on with because we see that there's a tremendous commercial opportunity to take that particular carbon and get it back in the soil more efficiently than by the aerobic route.

It does involve divulging an awful lot of fairly commercially-sensitive material which I could probably do half of, but I would then slip into something I shouldn't have done. So if there's an opportunity, I'm more than happy to do a separate submission on another day on a pathway for carbon to come from the metropolitan markets. It's a very interesting process. If a lot of this material, apart from that which is grown in everyone's gardens - which is very interesting from the produced responsibility point of view, because it doesn't have a brand on it but it belongs to community who regenerate it - they grow the geraniums and the palm trees - and yet asking them to take the same level of responsibility they ask tyre manufacturers to take for their products seems to sort of disappear in the wash when they get down to the rational end of it.

On the other hand, an awful lot of carbon comes into the metropolitan market from the soils that desperately need it. That's the one-way traffic. Part of the cost of internalising - that carbon is needed back where it came from, but I think after a

certain area compost isn't the way to do it. Even though it's very beneficial when it gets there, the transport subsidy is a real issue. There is a pathway to do that. It is being implemented at the moment on a very large scale for pulp and paper, purely because that's a fairly defined starting point for the biomass. When it's proven it will be available for a lot of this material, as well.

I totally agree with you, there's a limit to what you can do with compost. I think it's something where you act locally for local circumstances. It's not something except at the very top end - the material, for example, that comes out of the Camellia digester at the moment is very high value. It does go into a particular product. It is sold nationally, as it stands, in a bagged and branded market, so it is possible to do it if you get the value in.

MR WEICKHARDT: To question 18 you say:

Notwithstanding the laws of thermodynamics and the inevitable generation of entropy throughout the productive economy, within the limited practical terms of reference from the inquiry there should be no such thing as waste.

I find that difficult to accept. The laws of thermodynamics are actually ones that govern us and at some stage - - -

MR GLOVER: It's the definition here again.

MR WEICKHARDT: - - - you have to apply sufficient external energy to recover waste, but it becomes a wasted resource to do that.

MR GLOVER: Which comes back to your original point of the hierarchy and highest net resource value. In fact, I didn't finish answering the question. I've still got it all tipped up on the table and we've sorted it all out. You will find, as it stands at the moment, that for all the materials that you would sort out from standard urban solid waste, they all have existing or nascent markets which without any difficulty could be either cranked up or already exist. The only reason you can't access them is because of the mixture.

If you design the system from the root up and you start looking at AWT for producing these sorts of outcomes and not just stabilising for landfill, all that is commercially possible within the current landfill structure prevailing in this country - that's a nice bold statement - which is what I do for a day job. That material already has opportunities to be turned into something really useful. As I say, if you start looking at piles of not even the colour-sorted glass but the plastics, if you start teasing them apart and saying if that's my input, if you do the numbers on it - which

we do all the time - you'll find that it has been presented in concentrations imminently greater than are available in the natural environment if you start to sort the stuff through.

We know, for example, even on a small oil refinery, as a classic example, we are something like 30 per cent more efficient than the big guys making their lube oils in a big refinery, because all we have is a lube oil coming in. They've got a wide range of cuts and a whole lot of complexities to overcome. We are able to channel on what we do and make lube oil at a better quality and more efficiently than they can in the big refineries because of the nature of the feed. The opportunity to do that with materials out of urban solid waste is the same for all of them - all the metals, the plastics, the organics, all the bits that are there - once they've got themselves into some sort of homogenous group.

So there is a level for AWT to get that broad separation and there's certainly room - which I'm sure you're about to come to - where you can use product stewardship EPR schemes to start to detoxify waste streams, to start to recover icon values in large chunks. You will finish up with these materials as very reliable inputs into value added processes. All of them have available markets if some level of presourcing had been systematically planned.

MR WEICKHARDT: Well, we went to a facility in Melbourne which is claimed to be the most sophisticated facility in Australia, and sophisticated by world standards for sorting glass that has come from a presorted facility. That facility, I seem to remember, cost 20 or 30 million dollars. It still has a lot of mechanical and individual human intervention and there's still something like 20 per cent of that product that goes to landfill. Now, if I read what you say here, you're telling me that it would pay for another \$100 million to get that 20 per cent and sort that back to some useable commodity?

MR GLOVER: Not necessarily. It may be that at the moment, if the access to the material is available, those that want to get the glass to make into glass or they want to get the glass to turn it into sandblasting materials, or they want to put it into concretes, the systematic resource recovery process that makes it available to those people who have got those markets and those uses needs to be in place. If the idea at the moment is that someone should go to extraordinary lengths to get the very last bit of glass so they can put it back at bottle grade or something, that's the level where highest net resource value cuts in. You allow the trickle down. We know it exists, for example, in paper. We know that the top fibres get shorter all the time you process them. The quality drops off. You have to keep feeding fresh fibre into the process from virgin sources and so it will be for a whole range of these commodities, and I think a lot of this idea that things have to go from bottle to bottle or jar to jar, or whatever it happens to be, is missing the point that the highest net resource value

concept allows you to pick that up, but it doesn't mean that the material has to be dumped to landfill because the bits in between can't be stimulated by access to that material.

MR WEICKHARDT: There's a bit that's left over at the end that I suspect would be wasting huge resources trying to recover.

MR GLOVER: Well, you will notice I have a definition for "landfill". The next thing is, again, it's definitional. The definitional use for "landfill" in there is "materials that have no higher resource value than to be used for filling holes". Now, that's fair. Anyone will tell you that as you build a high-rise city like Sydney, you've created in the hinterland the equal volume of hole, and someone wants to fill that in and turn it into a playing field or they want to turn it into a housing estate; one or two of them become boating ponds, but at the end of the day there is a mass balance issue. But to put materials into those holes that are still full of energy and resource value that can be accessed, because the current contract relationships won't let people get access to it, is where the issue is.

MR WEICKHARDT: Okay.

MR GLOVER: That's highest net resource value. Filling holes is because that's all you want to do, fill a hole, but as a treatment technique or as a repository for materials for the future it's a glitch in the system.

MR WEICKHARDT: You talk about the landfill levies that are being applied in different states and, as you point out, they are being applied on top of basic operating costs recovery frameworks. The question is whether or not it would be better to get the landfill operators to internalise most of these external costs, to properly recover all greenhouse gas, to properly ensure there weren't any external leachates and there were no odours and things of that sort, rather than to apply a levy retrospectively, and then I would like you to comment on the issue as to how closely the levies being applied in different states actually approximate to the externalities.

MR GLOVER: If you're designing - which we need to - maybe I need to ask a question at the beginning because I'm sheeting my answers back to a profound understanding of sustainability; the concept that we're trying to leave the planet fit for someone else to use, and could I just ask: I notice in the terms of reference there is almost sly reference to ecological environmental and social benefit, but the word "sustainability" isn't there, although you'd suspect that the concept was being considered, and then there is an attempt later in the discussion paper to raise this issue a bit more. Do you find one of your criteria for making subsequent recommendations will be based in any way on genuine sustainability or is it, as the past head of the business council once referred to it as, "I need to keep sustainably

making money so that I can afford a bit left over to patch up the environment I trashed in the first place"? Because it would help me to answer the question if I've got some idea as to what you consider important.

MR WEICKHARDT: I think to deny that sustainability was important would be absolutely foolish, so I totally accept that it should be considered. However, I run out of patience with people who say, "I failed on every other argument to justify an action that I believe in, and therefore I'll say sustainability is the killer card I play, without having to justify costs or substantiate the reason behind it."

MR GLOVER: Delighted. That's magnificent rules of engagement, Marquess of Queensberry. Because on that basis, all the projects that we are currently constructing - whether it's the digester at Parramatta, whether it's the oil refinery, whether it's the tyres, whether it's the carbon process at the moment - all prove that doing it properly is actually not only commercially viable, it's better than the alternative, which is not part of the submission but - so we are on exactly the same wavelength and we have managed to pick some items like oils and tyres because at the moment the externalities - they are not included in the market at the moment, the pricing disparities are so big that you can get away with it for the short term, but certainly that's how all these projects have been proposed.

Back to landfill levy. This actually goes right back to the very first question you asked, which is the issue of if you had a market which instead of deciding whether some alternative to landfill was beneficial as an alternative to landfill cost, it was actually a question of a system which said that materials go out into the marketplace, they present eventually as, unfortunately, waste at the moment, but they should have been community by-products. The system we have in place is there to recover them systematically and put them back into the marketplace and that process should be that it can deliver those resources back so that the productive economy can absorb them, benchmarked against the true value of the virgin resources. That's the framework that I know works.

Now, the fact that that's complex - and going back to the start of the proposition - suggests that at the very minimum that this is an issue that comes as Commonwealth policy and Commonwealth integration because of the size of that objective. State governments get themselves in a mess because they don't have that level of control and therefore do the next best things, if anything at all, which is to use landfill levies as an opportunity to stab at what the externalities might be to deliver some policy objectives. So they are better than nothing. They certainly stimulate alternative behaviour but they are only really stimulating slightly better waste management behaviour. We still haven't gone to systematic resource recovery.

How they have been applied in different states? It's remarkable that they are

much lower in Victoria, that they seem to be getting high levels of resource recovery. So it doesn't show that there's a direct connection if we take that particular example. For Melbourne and Sydney to say, "Melbourne, I've got lots of landfills, therefore I've got a different paradigm" - that ain't true. A simple matter of mass balance. We have got the same amount of holes at the back of Sydney as we have at the back of Melbourne. It's just that the will to use them - is 1.2 million cubic metres of air space in western Sydney which is more than enough for a very long time, but it's a whole different political agenda about whether they want to use them or not. It's not they haven't got them.

But the objective here is to move from thinking waste management thoughts and dumping things in holes, into these are valuable resources, all of them have markets if we go about recovering them systematically. All of that, it would be my contention, can be done within the existing price structures. It's a question of wanting to do it now, not a question of - it's a question of organisation, vision, leadership; something that's missing whilst the debate is being managed by seven different states, which is possible if you can get central coordination to pull it together.

MR WEICKHARDT: So apart from greenhouse gas emissions, to what extent do you think the existing regulations that govern landfills fail to address some of the issues that cause concern and externality costs that you think at the moment are not being properly addressed?

MR GLOVER: The biggest one is simply the opportunity cost on resources themselves.

MR WEICKHARDT: Okay.

MR GLOVER: The materials themselves are too valuable, they don't meet my criteria. They are far too valuable to be used for filling holes. They have much higher resource values. You just simply can't help standing in front of a bulldozer blade watching computers and kids' toys and complex manufactures and very hydrocarbon based materials all being bulldozed into a hole; not because that's the right material for filling holes - in fact it causes all sorts of engineering problems. It's because we haven't got the up-front infrastructure and systems to recover that value before we get to that point.

MR WEICKHARDT: If it's a resource value issue, then is trying to address that by tackling products at the waste end the appropriate place to tackle it?

MR GLOVER: No. In my submission there is a very detailed paper, both in the Eco Waste one and later on in Energy from Waste, where we have done a lot of work

on behalf of IEA Bioenergy, task 36, where the relationship between - there is a very strong relationship required to be cemented between the two key decision points in how waste gets made in the first place. The first is the point of product initiation, design product initiation, as things are made. A lot of stuff at that point can make the difference between whether it presents as an undervalued resource or a waste, versus whether it can continue to be recovered as a recyclable.

A very simple example: I noticed the other day I went under the sink - why I was washing up, I can't imagine, but it must have been one of those days - and discovered that the container that I was looking for, the soap powder for the washing machine, which said on it "fully recyclable", was a cardboard box covered in a wax coating with a plastic handle and a metal spout. Someone - whoever made that and had the gall to put "fully recyclable" - hadn't linked with the people who recycle cardboard. They like the cardboard and, yes, it's fully recyclable but not the way it had been designed, so there's an - - -

MR WEICKHARDT: But taking your point, if you take enough energy and effort, you could peel the plastic off there; you can take the plastic handle off there - - -

MR GLOVER: That's where the effort - - -

MR WEICKHARDT: - - - dissect the cardboard.

MR GLOVER: That's fine. That's where the effort - - -

MR WEICKHARDT: It's fully recyclable.

MR GLOVER: Yes, it is. However, the commercial realities and the equation for that is fully improved if at the design point they didn't make it that complex and where complexity for recycling - so if you take the two decision points, the person doing the original manufacturing of the product and the person consuming and using and discarding it - everyone else are service providers, they're just in the chain. That is an area where those two decision-making points have to be better linked so that one (a) understands what the discard options and how the usage patterns are going to be for their consumer, and vice versa, and what they can do with it afterwards, so that issue is addressed. But vice versa they can then think about redesigning it in a form that meets the post-consumer fate plan that they have put in place for it.

In fact, most product stewardship doesn't mean that the manufacturer who makes that container has to physically go out and collect them at night. If they just share a little bit of responsibility and consider what those options are and are somehow induced to have that thinking process at the time they're manufacturing it, the problem of waste disappears. It didn't cost anybody anything, just a simple bit of

thought at the right time in the right place. Those manufacturers are predominantly importers and one or two local importers that manufacture those sorts of things. Getting that message across is not something that state jurisdictions are capable of doing.

It has got to be done at a Commonwealth level. It has got to be part of industry policy, broad environmental policy, and none of it need be a handbrake on the economy but it does require a little bit of thought and coordination to get the outcome and then a lot of the cost structures that are unnecessarily in the system, such as the way it is at the moment: the recycler has to take off the wax carton, he has to remove the plastic handle, he has to take off the metal spout, therefore he suddenly says it's not economic to do the recycling. He wouldn't have to. It would be a simple cardboard carton and he'd have no trouble. Those are the sorts of areas where if we had a genuine dialogue between industry and the post-consumer waste service providers, we would remove an enormous amount of cost without having to build any more facilities at all. That's the level of complexity that I'll be advocating for and needs to come from a paradigm change and it needs to come from central government.

MR WEICKHARDT: Okay. Just pursuing that point one more level, you mention that part of this problem was with imported product. Perhaps there is a portion of imported product that originates in locations where those design principles have not been well thought through but a huge amount of product that's imported in this country originates from locations where that product is made to specifications in meeting Japanese or European or US requirements, where those principles have been well and truly thought through. So why aren't those signals actually working without the Australian government having to do anything in regard to the imported product?

MR GLOVER: So the question is, "Did my soap powder come from overseas and, if so, why did they make it that way?"

MR WEICKHARDT: Yes.

MR GLOVER: I would have to ask the soap powder manufacturer.

MR WEICKHARDT: Or was it that overseas they had decided that the fact that they could recover energy from that product was the best alternate use for it and therefore bothering to make it in a more expensive way so that it could be recycled wasn't worth the effort?

MR GLOVER: Now we're coming back to your hierarchy. If they had assumed that simple energy recovery would do the job, had they been through the sustainability guide for energy for waste which we were going to come to a bit later

on - because, if they had, they would have discovered that it would have been an awful lot easier to design it without the plastic handles and the metal spouts so that it could be used for cardboard and then perhaps as egg cartons and other bits and pieces before getting to the energy use. And if they had been intellectually lazy then it means that when they arrive at a boundary of a country like Australia with such high standards on these matters, they would simply have to then produce - acknowledge the difference by whatever process has been set up in their central coordination.

MR WEICKHARDT: Okay. Let's move from soap powder because that's perhaps an example where there are lots of choices. Australia makes no television sets any more. The Australian government developing a standard saying, "Television sets imported into Australia should be made in the following way," is likely to have about as much effect as me pushing against this building and trying to push it over.

MR GLOVER: Yes.

MR WEICKHARDT: In those circumstances we probably have to rely upon pressures being applied to those manufacturers externally that will drive them in the direction you're talking about.

MR GLOVER: It will. I can speak with enormous authority on the issue of tyres because we've just done that and we're about to talk about it in a bit more detail - which is almost overwhelmingly an imported product. It is fortunately slightly simpler. It does come in a lot of different ranges and a lot of different materials and that is an area where the issue of the imported product versus the local manufactured has been resolved and is very close to overcoming those particular issues. But in the case of televisions, they do have a problem. They are currently grappling with them. I would love to be given the brief to try and work it all out for them but it's not really something I can do for you this morning.

MR WEICKHARDT: Okay.

MR GLOVER: I can have a crack at it when we get to tyres.

MR WEICKHARDT: That's a good moment to change gear then, so which of your next hats do you wish to wear?

MR GLOVER: Tyres, because he's just walked into the room. That would be marvellous.

MR WEICKHARDT: All right. We will adjourn for a moment and wait for the next, I think, group on tyres.

MR WEICKHARDT: Okay, if you could please just give your names and positions. You had better give your capacity in which you're - - -

MR GLOVER: It's Mark Glover of Renewed Rubber as convenor of the Joint Working Group, Tyres.

MR MACKEY: And Greg Mackey. I'm executive director of the Australian Tyre Manufacturers Association, or ATMA.

MR WEICKHARDT: And we have an apology from Silvio Di Dinero, who is the secretary of the Australian Tyre Importers Group, and if he had been here that would have been 80 per cent - 90 per cent - of the tyres in this country would have come through those two organisations. Again, you should assume that we have read your submission.

MR GLOVER: I will assume you have read, so I will simply pick up on the key points. The key points that are here are that - and certainly my interest in convening the Joint Working Group, Tyres, which was basically a loose assembly of the tyre manufacturers and ourselves - to convene a group which could represent the tyre industry which, as you will see from the submission, 2001, I think, we all took a broad representative of CEOs from industry to Canberra. Canberra responded by providing us with representatives of Treasury, Customs, Industry, Environment and a number of other departments that have an interest in a product stewardship scheme.

After an engaging three- or four-hour conversation, agreement was reached that government and industry would work together to form what was going to be called an industry voluntary product stewardship scheme for tyres and from then on the parties have been working productively with the recycling sector and other stakeholders on the development of a product stewardship scheme for tyres. The status of that is that the broad thrust of the scheme through a roundtable process over the last three years has now been finetuned and it is going for provisional approval to the EPHC for their June meeting, is where we're up to.

The process then is that EPHC, if they give provisional approval, that provisional approval will then say whether the conditions come from their assessment of the documents they're presented but it will trigger off two things. It will then trigger off the confidence that the jurisdictions will have to put the regulation in place, the free ride regulation, over the next six to nine months or however long it takes them. From industry's point of view it will give them the confidence to spend the considerable amounts of money on developing the business plan for the 10-year scheme itself - producing the fine detail, hiring the staff, getting the premises and generally getting the whole thing set up with a view then - the current timetable I think is that at the first meeting of EPHC in 2007 it should then be

that the legislation is in place, the business plan is all in place and they should be able to give final approval to it. So it would become fully operational, at this stage, at the first time EPHC meets in 2007.

That's the background to where we're up to on product stewardship. Do you want to ask questions or I will talk a bit more about the detail?

MR WEICKHARDT: No, I would quite like to ask questions on that. You mention on page 3 of your submission that the marketers currently squander between 30 to 1500 dollars of recoverable resources per tonne of used tyres. That's a very wide range. How did you actually arrive at that range?

MR GLOVER: I'm on page 3.

MR WEICKHARDT: Under question 2?

MR GLOVER: So we have a situation at the moment where, without intervention in the market - without a voluntary scheme or a collaborative scheme - a positive intervention - if I can turn this around? The parties acknowledge that at their first meeting back in 2001 the broad concept was that there is a market failure with used tyres. They cost the manufacturers in resource alone something like \$2000 a tonne to make a tyre; to assemble rubber and steel and labour and make a tyre. The laws of thermodynamics are popping up again. Because of cross-linking and vulcanisation, it's effectively a one-way chemical reaction so that you can't, as you can with oil, recover the full \$2000 a tonne and keep recycling them.

But as a direct replacement for its properties in the polymer sector generally, it fits straight in benchmarked against other polyethylenes and other plastics at around about \$1000 to \$1200 a tonne as a material which the manufacturing and polymer industry understands as an ingredient. So we have a product that we first started off with. The tyres at the moment - or at the time in 2001; it's moved slightly - are presenting in the marketplace as either energy at best, or landfill at worst, which is either in Sydney minus \$160 a tonne to bury or calorific value, benchmarked against coal, for those applications in kilns and various areas where you can do it, something like 30 bucks a tonne tops of value is being recovered from a product that has a market potential of at least \$1000 to \$1500 a tonne, originally costing about \$1200 a tonne. That's the problem.

Why wasn't everyone running up to the plate to recover that value? It was again a systematic problem of moving the deckchairs. It was an issue that said the market hasn't got the infrastructure to recover the value to produce products that can fetch those sorts of prices and they're not building the infrastructure because the market isn't there, and the market isn't big enough because no-one is making it. It

was a chicken-and-egg starting point. The scheme has been designed around a process for a maximum 10-year intervention into the marketplace to stimulate what has now been demonstrated as the market for those materials to be developed, such that at the end of that process the market for the crumb itself drives or sucks tyres out of the marketplace, even getting to the point of paying for them rather than being paid for as a disposal issue.

Now, all that is - as I know you've had a chance to read on your bus on the way here this morning - in the detailed financial and economical analysis which was done for government and the industry, which is appended to the report and is up on the web for anyone to download and have a look at, which has gone through the analysis to demonstrate those points and has also looked at what has been suggested as a scheme to stimulate the market benefit from tyre-derived products over that period of deliberate intervention by way of a product stewardship scheme to fix a clearly defined, up-front market value.

MR WEICKHARDT: I don't want to dwell on this too long but I'd be surprised if there was an indefinite market for crumbed tyre product at \$1200 a tonne in the world. From my limited knowledge of the polymer area, which is an area I spent a fair bit of my youth in, I'd be very surprised if there was a huge market that could absorb all the world's tyres that were crumbed up in that application.

MR GLOVER: You're quite right. The projections in this report, which as I say I'm sure was bedtime reading, demonstrate that whilst that market will probably cap out at something like 10 or 15 per cent of the material, there's a vast market for these materials at about \$500 a tonne which could absorb every conceivable touch of rubber into basic products and building materials. That alone plus the potential for higher values at the end, and one or two very low-value uses and some still energy down the bottom for tyre reprocessing by-products - but there will be a fraction for simple energy. In that broad basket of opportunities that you can make from a tyre there is one absolute. There is no need for any tyres to be wasted or needing disposal and that they can all go to uses - I mean, that was the whole purpose of the detailed financial work - to take those assumptions, explore them and confirm them to the benefit of the stakeholders.

MR WEICKHARDT: Now, in terms of the disposal options, are you happy to see the market signals actually determine which route these products eventually go in terms of their disposal without intervention by the up-front levy picking a winner?

MR GLOVER: Differentiation, which you know is obviously working very well in oil - - -

MR WEICKHARDT: It might be with your other hat on. There are some people

who would consider it unfairly picks a winner and that some person who has picked a winner and has incentivised the particular application you're talking about - - -

MR GLOVER: I'll stick to tyres. It was naughty of me to cross - but it's the same basic theory. The argument for differentiation is particularly powerful. One of the reasons that it was selected during the last three-year process of the roundtable with tyres, which included the government agencies, is that the market failure - which is that there is no infrastructure in place to recover the resource value from the tyres, therefore the market is nascent and unable to draw the material through and we have the chicken and egg.

If you're going to intervene in the market, then the process that we wanted to adopt - we have adopted - is that if you're going to intervene in the market then you should do it so that it's for a limited period and it fixes the problem, so that the current market for tyres is a 10-year maximum although the projections in this URS report say that you'll probably achieve your goals in year 6 or 7, but nevertheless it's been designed around a 10-year window. Because that was a scheme design criterion then you need to set the scheme up so that sufficient value would be recovered; that in the long term, when the scheme had gone, it was self-supporting. It won't be if you don't have a differentiated scheme.

If you had a flat levy, or if it was a very low flat levy, all that would happen, as it does with current landfills, is that tyres would go to the lowest common denominator. They would be disposed of regardless of the inherent resource value to the person who could access them more efficiently at the lowest levy structure, and the infrastructure would never be in place to recover the original value. What we've demonstrated through the URS report is that unless you get about 60 per cent of tyres going to a value of about \$500 and up, there is never enough resource value recovered from the tyres - and remember I was talking that band between \$30 and \$1200 a tonne - for the scheme ever to be turned off.

In other words, if you leave the levy too low you're doomed to have a levy forever because basically it's an aid to ongoing disposal of the resource. You don't recover the value. What you do is lock yourself into a scheme that can never be stopped. So if you want a scheme, by definition to have a defined end point, you have to do it properly. To do it properly you've got to thoroughly address the market failure, which is that the full resource value isn't being realised, in which case the scheme has to fully realise the resource value of the tyres; not a resource, not a use, being landscaping applications or simple energy back at 30 bucks a tonne again.

At 30 bucks a tonne you might get a lot of them back out of landfill but what have you achieved? You haven't actually recovered the full inherent resource value of the materials. If you do that, you have a defined period where after five or six

years you can turn the scheme off because there's enough installed infrastructure now and enough interesting markets that the tyres now move to a situation where they go to whoever wants to pay for them for their own particular application. So if somebody wants them for energy and doesn't want to pay for them, they won't get them if someone a bit further up can use them for something at a higher value.

That's the sort of infrastructure - that's the sort of self-interest pursued market that we're trying to achieve with all these resources. It's just that you need in some of these cases, when you're moving from waste to resource recovery, to interfere, to fix a market failure and then step out. We're particularly keen to do that, both politically and commercially, and not be on the drip forever, relying on blunt landfill levies - or basically a subsidy to burn them is what it would be if you left the levy too low. All that's doing is now subsidising the people who are recovering energy from them. It's not actually moving up to the full resource recovery.

MR WEICKHARDT: I admire your confidence. I have to say that history suggests that most of these systems, once put in, are never removable. The infant industry argument has been applied with tariffs, support and subsidies for a long, long while and there have been more failures than successes in that area.

MR GLOVER: I can only speak from personal experience. For example, in the oil issue at the moment, it's only a matter of scale. The next generation of plants won't need anything at all; they will work off the cost of oil. Certainly this tyre one - it's not a personal opinion - is a weighty tome which has been put together by the entire industry. It is a precondition of this scheme, it has a sunset clause, and the logic of it being so beautifully spelt out in the report, is what I seek to rely on in this case rather than some dodgy history from what is ultimately - the dodgy history tends to come from schemes which started off being a bit of waste management with a bit of interference and never quite followed through.

I think what we can say from the Joint Working Group Tyres submission is that it has been thoroughly thought through. We have had some very challenging conversations with industry departments in Canberra who have come with a very dry economic view and have been turned on the issue, and it has been minuted as such. It's not something where it will come down to a matter of opinion. We have actually got it right. If someone doesn't understand that, we are happy to keep answering questions until they do, but we have actually got it right for tyres. It will be an example that in the future people won't be able to say, "History is not in fact in your favour." History will be in our favour, because we've put the effort in. We've learnt from history.

If there's a specific argument about the economics and the financial framework that we've put in place, the detailed effort that's gone on, the amount that we have

learnt from watching the oil stewardships scheme going to - and it's very interesting on product stewardships, since this is a good place to talk about it, as a voluntary industry scheme it stands a chance of success. Government schemes are doomed to failure because the concept of a precision intervention into the market requires proaction. It requires direction. It requires leadership.

In the case of oil, that disappeared because governments generally work off consensus, work off being fair to everybody, work off a bureaucratic structure and specifically won't pick winners, and market failure needs someone who is going to identify the problem and pick the winner and fix it, and that's where government schemes tend to fall over if they are administering them. The current oil is something like - I think 60 per cent goes on administration now, which is a funny way of getting money back into environment departments. It has got nothing to do - we've learnt from that. That ain't in the tyre scheme. It isn't doomed to failure and we would be particularly concerned if we found any reference to that in your final report.

MR WEICKHARDT: Any reference to what?

MR GLOVER: The fact that it's doomed to failure because history says so. On its merits you can't sustain that argument.

MR WEICKHARDT: The scheme I applaud.

MR GLOVER: Great.

MR WEICKHARDT: I'm just saying the idea of picking a winner on the basis that in five years' time you'll be able to withdraw the support for that, is actually not something that history suggests is all that successful. You have suggested in lube oil you can survive on your next plant without any support and you're on the public record, so I trust that I will see this actually in history - - -

MR GLOVER: Certainly in our lifetime.

MR WEICKHARDT: Good.

MR GLOVER: However, on oil it should have been part of public policy to stimulate the next generation of plants; that we're big enough and ugly enough to survive without a scheme. That's missing from a policy driver from the current product stewardship council. They don't understand that concept, therefore they're not pushing for it, therefore they could orchestrate failure in oil. It won't happen in tyres.

MR MACKEY: If I could just add something.

MR GLOVER: Sure, as the manufacturer.

MR WEICKHARDT: Can you just tell me how big the up-front charge will be and who will administer how that's disposed of - - -

MR MACKEY: The levy?

MR WEICKHARDT: Yes.

MR MACKEY: The advance fee. It's not a levy, it's a fee. Any importer or manufacturer - there are only two of them - who enter tyres into the market can - it's not compulsory - agree to pay a voluntary fee which will be set as part of the business plan, although the amount of the fee may be reviewed from time to time. It won't change very much within certain parameters because the ACCC probably will have to have a look at what those parameters are and we won't be able to depart from them, I would have thought, without a further authorisation application. Assuming that that set fee per unit, per container, is paid in advance of the shipment's arrival, then the producer responsibility organisation, which are the manufacturers, would then indicate to the regulators that that shipment by that member of the PRO is subject to a voluntary levy and ought not be the subject of any sanctions under legislation. This is the free rider legislation which will be in place for those who choose not to subscribe, so to speak, to the conditions of the association - - -

MR WEICKHARDT: Sure.

MR MACKEY: So, in short, by industry.

MR GLOVER: 85 cents.

MR WEICKHARDT: 85 cents.

MR MACKEY: Something around 80 - the answer is 80, 85 cents.

MR WEICKHARDT: Who will administer those funds?

MR MACKEY: The producer responsibility organisation, but only pursuant to a business plan which is approved by the wider stakeholders' organisation, so there will be a stakeholders' group - which by stakeholder we now talk about two industries; the whole tyre industry right through the chain of supply and the recycling industry, and of course the government stakeholders representing the community.

MR WEICKHARDT: Right.

MR MACKEY: That business plan will be in place - in other words, funds will be allocated pretty much for expenditure under certain heads in advance of spend.

MR WEICKHARDT: Okay.

MR MACKEY: Can I just refer you to the URS report and on the subject that you were asking Mark questions on - clause 8.4 at page 127, just so you've got a reference, and over the page there's a table that looks at and contrasts a fixed benefit and various combinations of fixed and variable through to a full variable. It's an issue which is contentious and which we considered, one could say, exhaustively - - -

MR GLOVER: One can - one has.

MR MACKEY: - - - before we signed off on the report.

MR GLOVER: It has been the biggest single item of debate for the last three years. It is beautifully argued in the model, so you can find that.

MR WEICKHARDT: Okay, thank you very much indeed. That's a good story. Which hat next?

MR GLOVER: SPIG, which could be quite quick, and then we can conclude on a high note with energy from waste.

MR WEICKHARDT: Okay.

MR WEICKHARDT: Our next participant in the hearing is from the Strategic Planning and Implementation Working Group of the Waste Management Association of Australia. Again, if you could just introduce yourselves and give your role for your third hat.

MR GLOVER: I will. Mark Glover of the Strategic Planning and Implementation Working Group of the New South Wales branch of the Waste Management Association of Australia. My co-chair - - -

DR WAINBERG: Ron Wainberg, also of the Strategic Planning and Implementation Working Group of the New South Wales branch of the Waste Management Association of Australia.

MR WEICKHARDT: Thank you.

MR GLOVER: We will be very quick. This is a small submission on the basis that this group has only just formed, but it does go to a couple of issues that I know you've been addressing before I arrived this morning. Just by way of introduction, this is basically a group - all we can really do is introduce the fact that it exists and it's just starting, and to have a bit of a talk about its aims and objectives. The process I think comes down to a remark that was made by a previous speaker this morning about state government implementation plans versus state government strategy. Having a strategic plan interpreting community desires and sustainable outcomes into a strategy is one thing, but delivering it on the ground and inducing capital out of people's pockets to build things and do things is the bit that has been missing.

This group, by way of introduction, grew from a waste management conference last year - in June-July, last year. It grew from a plenary session at the end of that conference at a point where the assembled delegates who had spent two days in a conference bemoaning the lack of strategic direction for certain things that they felt valuable, basically said to the panel in the plenary session that rather than wait for leadership from state government for a strategic plan, how much better since all the parties - the implementers, the customers, the environmental NGOs, all the stakeholders were in the room. They had the expertise, they had the direct involvement and the concept was really, "Why do they need state government? They can do a strategic implementation plan for themselves."

Through the Waste Management Association that group has formed and all he can do today is announce that it's there. It's starting its real work as of now. We're just getting into it at the moment but, broadly put, the group under the auspices of the Waste Management Association includes the Local Government and Shires Association, the Boomerang Alliance representing the environmental NGOs and ACOR, the Australian Council of Recyclers; so that you have got the doers, the

customers, the environmental NGOs, and all under the umbrella of the Waste Management Association, saying that it seems patently obvious that the expertise lies in those four groups. How to implement the strategy is something that industry really should do for itself and should go through a process.

The objectives at this point that have been agreed by the working group are to oversee and coordinate the development of a detailed implementation plan to facilitate the delivery of systems and infrastructure and the engagement of private capital in the process and then recommend the commercial, regulatory and legislative regime which may be necessary to facilitate that outcome. All we have had so far is a phone call from the minister's office, from an adviser, saying, "It's a fantastic project. Love to hear all about it. Keep us informed and we're off to the races. We're about to start the process of thinking it through."

I think at the time - I'm not quite sure how it happened but we became co-chairs of the process. Ron was the convenor of the conference at the time so he was a natural standup. I think our process to this is really to systematically design what we mentioned before from the ground up, what a resource recovery system should look like, with those groups in agreement. It will be a very powerful process if we can keep the process together. Where the existing waste management infrastructure and systems have bits that are useful in a resource recovery system then that's magnificent but it shouldn't be the starting point and we should at the end of it finish up with - since we have got the expertise harnessed through (a) the working group and (b) we're proposing to use a much broader reference group - sort of peer review discussion papers and reports and progress as we go through.

We should, as I hope we did with the energy from waste process, have brought - it's a broad term - industry with us on the journey so that when we have got something at the end it's something which all parties and stakeholders agree with. But we have got the core expertise from those representative parties to design something, which I think was evident from some remarks made earlier this morning, that in all of this there's a need for federal intervention in some of these areas. Certainly local government has a requirement to supply authorities to amalgamate to provide material into the system but ultimately it's not something which is very easy for state governments anywhere to have come up with an implementation plan.

Strategy, yes; policy, yes; interpreting the common good, by all means; and certainly being the regulator in each state to oversee least harm and minimum standards achieved to suit local circumstances. But actually doing it is something which industry is obviously much better at doing itself and there's the process. So really I think all we can do today is - when discussion earlier on was had you get coordination - well, here is an example. It's being watched by our brothers up in Queensland, which you have probably found out already is a policy-free zone on

these issues, and it may well be a model that can be used again.

MR WEICKHARDT: Okay, thank you . We will watch that with interest. Just as a question, you have talked about the fact that your group is going to engage the private sector in implementing the waste avoidance and resources recovery strategy. Does that mean that you all agree that the strategy is absolutely 100 per cent exactly what the state needs and you won't be questioning or challenging any part of the strategy?

MR GLOVER: The strategy itself may come under - we may find bits that we find are either unimplementable or difficult or lumpy as a policy document, but we should by then have got an overwhelming flavour for an alternative. It won't just be, "It doesn't work but here is something that does." If policy is trying to outline long-term objectives, it has got lots of lofty goals about sustainable resource use built into it. If in designing a system to achieve those outcomes we find bits of it are lumpy then I think we work on the fact that we have had a phone call that says, "The minister would like to hear about them as part of objective number 2, recommending the commercial regulatory legislative regime necessary to get the outcomes." We're bound to find some areas to improve.

There will be heated debate amongst all the parties there. We have just got to hold the structure together through the association. If we can meet those objectives then all parties then have a playing field they can work off in their own area of commercial activity.

MR WEICKHARDT: Okay. Well, we will watch with interest. We have the New South Wales government appearing tomorrow and I'm interested that they make a comment that establishing these targets gives transparency to the direction in which they're heading, which is true. What I'm not quite sure of is that there's a lot of transparency about how the targets themselves were set.

MR GLOVER: I couldn't agree more. We have adopted here the fact that there is a strategy that says 66 per cent. In answer to your previous question, if the answer is 98 per cent or 52, then it should come from a rational assessment of the issues rather than a dartboard or whatever the - I would be fascinated to know where 66 came from. I shall read your report to find that out. It will be informative.

MR WEICKHARDT: I am not sure whether you will find it from our report but we will try and find it. Okay, thank you very much indeed. Good luck.

MR GLOVER: Thank you. One final - have I got five minutes just to do - which hardly needs presenting but is interesting as a process.

MR WEICKHARDT: Now, sorry, just make sure we get this right. This is the final part of the stanza.

MR GLOVER: On energy from waste. I don't have any other members. Ron actually is a member anyway but for the purposes of this exercise, this - so introductions?

MR WEICKHARDT: Yes, please.

MR GLOVER: So it's Mark Glover, chairman of the Waste Management Division of the Waste Management Association, which is a national rather than a state based leg of the business. We're heartened by what we managed to achieve with this project when embarking on this big project because I think there's a lot of similarities and I think if we can get the same level of outcome and buy-in, we will have achieved a lot.

] This process grew, and I think it's interesting to know the sort of antecedence for this, from a chance encounter between about a dozen waste management sustainable resource use practitioners who were actually waiting to go into a meeting and were chatting. The broad concept was that they, as practitioners in the area, understood that there was a group of materials in urban solid waste which we could loosely define as no longer being practical for ongoing resource recycling, reuse, reprocessing but were far too valuable to be put in a landfill. There was that lump in the middle that seemed to us - at the very least there was an energy proportion that needed to be recovered. Very simple starting premise.

From that, that group met a couple of times and started to think through the issues. All the people involved are all named. Their names and addresses are all in the documents. No-one can hide. But out of that, very quickly, the Energy From Waste division formed and, before we knew it, we had a phone call from the AGO who said, "We hear you're trying to move into this vexed area of energy from waste. We would like to encourage you in this activity to the tune of a \$150,000 grant to get you on your way," which is all too good. So along with government as with industry funds - matching industry funds that took the whole project up to I think a cash and in-kind total budget of about 5 or 6 hundred thousand dollars, we embarked and developed through a very transparent working group and reference group structure into a process of travelling around the countryside and listening to people's concerns and issues related to the vexed topic of energy recovery from waste, and brought that back and then again, through this very democratic working group reference group process, developed drafts, developed ideas.

The people involved again were - the environmental groups were involved, the practitioners in industry were involved, the broad spectrum of most state jurisdictions

were actually on the working group and helped us develop the process, and the long and the short of it is we finished up with a sustainability guide for waste-to-energy projects which basically was designed around the concept that before you started putting in approvals, if you had gone through this document conscientiously and prepared yourself, you should be in a position where, if you were able to answer yes to all the questions, you probably had an energy-from-waste project you could get off the ground.

That came as a surprise to some members of the division because it actually mitigated against - and it distressed them enormously - what we'd call mass-burn incinerators. It came to some conclusions that appropriate energy recovery isn't all about big-fix installations of the European style. They are wasteful in terms of resources and they're the sorts of facilities that don't deserve to get up, and it's no wonder that there's a nil percentum that goes with it. But it then went on positively to pick out how you get all the swings and none of the roundabouts; how in fact appropriate energy recovery can be achieved.

It's a long process. It's there in detail. I'm happy to answer questions on project scoping principles or how we went about it. It's encapsulated in this thought diagram. The last time I had an inquiry from EPA Victoria, whatever they're called now - only yesterday - they had an initiative to do something in this area and abandoned it because, as they said, this document just fits the bill and they'll just adopt it. It's been supported. They were the only people not involved in its development. New South Wales, Queensland, South Australia and Western Australia were part of the working group, so they've obviously been in with the process.

So energy from waste pops up a lot of times in the discussion paper for the inquiry. It's a vexed area but I do think we now have some sort of national consensus about what that really means. It doesn't mean mass-burn incinerators, even with energy recovery, but it does mean that, for example - now, just before we came in I was presented with a document which I was asked - you've got a presentation from ACOR later this afternoon. They're going to give you this table at the top. Now, I happen to know that there's just some big numbers here which are quite interesting. So I'm at liberty just to present this now because the two right-hand columns are going to come up in a submission this afternoon from ACOR themselves.

But when you start looking at the sorts of figures for embedded energy inherent in materials and the net CV that's available, you do find that without building mass-burn incinerators but definitely optimising, for example, existing facilities - certainly existing kilns and power stations and metallurgical processes - you've got enough calorific value if you did recover it to do seven times the requirement for coal that's currently going into cement kilns on an annual basis. So there's an awful lot of

material here. If we can optimise current kilns, current power stations, current metallurgical processes which are embedded in the industry - there's no capital cost or very little because it already exists - and we can meet the requirements for the reliable supply to those organisations and meet the quality criteria which are set out in the proposal, we have an opportunity when you get to that point in the hierarchy, which we've abandoned this morning, where there is no higher resource value than to flick the switch to inherent CV recovery then there's already enough installed capacity around the countryside to do that if we follow these guidelines. I think that's the basic outcome.

MR WEICKHARDT: Well, thank you. I commend you on the document. Arguing against it would be like arguing against motherhood and apple pie. I suppose my real question is whether or not you think any energy-for-waste project in Australia will ever get up, having satisfied every one of the questions you've asked here. It's a huge set of hurdles you have applied.

MR GLOVER: Well, I'm only at liberty to say that I'm currently developing about \$100 million worth of projects that exactly meet those criteria at the moment in industrial settings, doing exactly what is in here.

MR WEICKHARDT: I'm delighted to hear that.

MR GLOVER: As I say, under different circumstances we'd be delighted to provide the names, ranks and serial numbers of all those projects. But they are full-scale commercial using this as a framework to exactly what is shown is possible in what you'll get as an A4 document later this afternoon.

MR WEICKHARDT: Well, we've certainly already heard some rather disappointing stories from the Cement Industry Association about some waste streams - for example, flock from end-of-life vehicles - that they believe they would be eminently capable of utilising without environmental consequences and had been frustrated to date in their attempts to do so.

MR GLOVER: I think the cement industry is probably the initial sleeper in this where the opportunities are enormous for all kilns that we've got - all installed capacity - to be optimised to abide by the principles and still have all the fuel they require. My understanding since - the cement industry is in the room at the moment and can answer for themselves, if asked, but at the end of the day the three companies involved that I'm aware of don't want to take any waste onto their site at all, but they're very happy to take alternative fuels and alternative products. That's a QA process that comes out of this approach. It means that out of that infrastructure developing something which is a product that can be an alternative fuel, or alternative resource, into a cement kiln needs to be done prior to it getting to the kiln,

so they're never accused of burning waste, being by its definition indeterminate and therefore you can't guarantee what's going up the chimney or the quality of the cement.

But a maturing industry which is developing alternative fuels that can value themselves because of the resource value they provide, if there's iron and so on involved, or because of the calorific value and its net benefits being beneficial to coal or cheaper than gas and environmentally sensitive when compared to coal, is the next big sleeper that I think we'll see in the next three or four years. There's no reason I can see why the fuel couldn't be made available from the metropolitan markets to optimise that opportunity for cement in the next three to four years.

MR WEICKHARDT: Well, they also indicated that after your five-year period when the winner will be withdrawn in the tyre products stewardship scheme they would be very happy to accept the consequence of the marketplace. If there are higher value applications for the resource in tyres they're happy to live with that.

MR GLOVER: I think it's fair to say that because they have the cost of cement benchmarked against their current cost of fuel and resources, wherever they can find fuel or resources that are cheaper and that still leave the same outputs they're particularly keen to take them.

MR WEICKHARDT: That sounds reasonable to me.

MR GLOVER: I think the tyre reprocessing industry in its current projections in that report - swapping between hats - has benchmarked that something like 25 or 30 per cent of the rubber in the country would go down that route as a natural cause of it being the by-product of a reprocessing industry. But that's an awful lot different to simply taking whole tyres that have still got lots of other things that you can use them for in the process. So as a bottom feeder - being able to take quality resources and energy at the bottom of the hierarchy where they're available, but if someone can use them they lose them - it's a good industrial dynamic that enables industrial ecology at its very best.

MR WEICKHARDT: Absolutely. Thank you very much indeed for your marathon presentation and the work you've put into it. We're going to adjourn now and resume at 1.45.

(Luncheon adjournment)

MR WEICKHARDT: I would like to resume the hearings and our first participant is Mr Michael Ritchie from the Waste Management Association of Australia, New South Wales (Alternative Waste Treatment Working Group). Michael, if you could just introduce yourself, your position and organisation, please.

MR RITCHIE: I'm here representing the Alternative Waste Treatment Working Group. I'm the vice-president of that association. It's a working group of the New South Wales Waste Management Association. My other day job is I'm general manager of marketing and communications with SITA Environmental Solutions.

MR WEICKHARDT: Thank you. You should assume that we've read your submission, but if you've got some comments you want to make to draw out particular points, please do so.

MR RITCHIE: Sure. Thank you very much for the opportunity. I guess I'd start by saying the Alternative Waste Treatment Working Group is a representative body of the alternative waste treatment technology providers, the local governments involved or considering developing alternative waste treatment technologies, the state government, various planners and other interested parties. The objectives of the Alternative Waste Treatment Working Group are to stabilise residual waste going to landfill, to reduce the quantity of residual waste going to landfill and to recover resources from residual waste, very much in line with some of the discussions that happened this morning.

The starting position for the AWT Working Group is the state government strategies around Australia where we've seen a raft of new diversion targets put in place; 66 per cent diversion of MSW in New South Wales by 2014, zero waste strategies elsewhere. The working group has reviewed those strategies and, in particular in New South Wales, has been discussing with government the practicalities of whether they could achieve those targets. The view was held strongly within the working group that the various governments would not be able to achieve their diversion targets without the introduction of AWT technologies, particularly in relation to municipal solid waste. Therefore, the working group was established to begin a dialogue with government as to how to introduce AWTs; what were the impediments to AWT and how could it be progressed into the marketplace.

The range of issues we discussed with our various governments. Take New South Wales, for example - and it's in the submission. We looked at the state strategy and determined that if the state didn't intervene in the waste sector - in the MSW sector and the C and I sector - that it would need to contribute about \$134 million of taxpayers' money into that stream in order to get the infrastructure built. That's in the submission. We therefore lobbied the government to intervene in another way; first of all, by limiting contracts for long-term landfilling. There was a

move by the local councils to enter into long-term landfill contracts. The government limited landfill contracts to five years. We also had a debate about the role of the waste levy in terms of balancing the market economics so that local councils could make decisions between AWT and landfill pricing, so that AWT was able to compete with the cheaper landfill disposal. That's in the document, as well.

In terms of broad policy, we've made recommendations to the government about - and this is to all governments, this paper that was recently produced and we've submitted to the commission. It looks at issues such as siting, the delivery of comprehensive targets across the state, measurable targets, trying to establish some alignment between different state targets for diversion of waste, clearer definitions on waste itself - and you had quite considerable debate with Mark this morning about the definitions of waste - minimum environmental standards for landfill.

One of our key concerns is that landfill is cheap in Australia because the full costs of landfill operation are not internalised. You asked various questions about what those externalities might be, and certainly the AWT working group has a view about the need to internalise those environmental costs. We needed to develop national markets for the products coming out of alternative technologies and we needed systematic tendering processes by local government to achieve some degree of coordination between the various local government tendering processes.

Finally, I would make a point about the role of the levy in New South Wales and in other states. We see that as part of establishing a more coherent marketplace so that councils can make rational economic decisions between landfill and alternative technologies. Landfill tends to be priced in New South Wales 30 to 40 dollars a tonne cheaper than the cheapest alternative technology plants, and the disparity between landfill pricing and AWT is significantly greater in every other state. The AWT Working Group has been a supporter of the introduction of landfill levies to try to get some balancing of the marketplace.

We also very strongly support other more targeted market based instruments. We see the landfill levy as a catch-all final instrument, whereas we see more targeted market based instruments such as advanced disposal fees, EPR schemes, the UK LAT Scheme - Landfill Avoidance Taxation Scheme - as being other more targeted instruments which would add value in the Australian context. That's probably as much as I want to say by way of introduction. I'm happy to take questions.

MR WEICKHARDT: Thank you very much indeed. Just a general comment: it would appear from the graphs you inserted, which are I thought very interesting in your submission, whilst you say the municipal waste and recycling quantities actually don't hit the target, they're actually moving in the right direction. The amplitude might not be too bad but they're moving in the right direction. The biggest

issue appears to be in the C and I area.

MR RITCHIE: Definitely. The point we put to the government - and this is only New South Wales. The trends in other states are vastly different from these, but in New South Wales the municipal solid waste stream was trending in the right direction. While total tonnages were increasing, recycling was accelerating at a faster rate and the trend in waste to landfill was downwards of putrescible solid waste. The shortfall was about 200,000 tonnes by the target date. The point put to the government was really you pick the low-hanging fruit in terms of kerbside recycling and household green waste collection services. If you want to capture that additional volume, then an AWT or a system of alternative technology is going to be required.

Turning to the C and I sector, absolutely; the total waste to landfill in the C and I sector is in the wrong direction entirely. The total volume is going up and the amount to landfill is going up at a slightly slower rate than total waste generation, but certainly upwards. The trend was entirely in the wrong direction, such that there would be about a million-tonne shortfall by 2014.

MR WEICKHARDT: Can we talk about why it is that in a C and I area you've seen that lack of response to government initiatives, policy, landfill levy going up. It would appear the municipal area has responded - perhaps not as much as the government would want, but it has responded and is moving in the right direction. C and I is not moving in that direction at all, except that we've been told in the construction and demolition area there was quite a rapid response. That suggests there's been an even bigger negative area if this includes construction and demolition - does it?

MR RITCHIE: No, it doesn't. No, there is another graph.

MR WEICKHARDT: Okay.

MR RITCHIE: There's another set of graphs which I can give you on total tonnage and also the C and D sector. The C and D trend is that one. They would hit their target. They're the only sector that would hit their target.

MR WEICKHARDT: Right.

MR RITCHIE: To answer your question simply or briefly, the price signal in the MSW sector - councils are economically rational. Residents don't see the price signal and that's one of the criticisms of landfill levies. It doesn't affect individual householder behaviour but it certainly affects council behaviour as their agent and councils make decisions based on price - that's one of the key drivers in any tender

assessment - so the price of landfill disposal is a key driver of where the local councils engage in diversion policies and programs such as kerbside recycling, green waste recycling, alternative waste treatment. So they are quite sensitive to price of landfill, contrary to some arguments you might hear in the marketplace that householders are not.

MR WEICKHARDT: Yes.

MR RITCHIE: In relation to the C and I sector, the price of landfill disposal is relatively cheap. Dry waste landfills are about half the price of putrescible landfills, so the price signal is not as much. The price signal is also diluted in the way that the price is given to a customer, to a C and I customer, so a C and I customer might be a local restaurateur; the price signal he's getting is a combined price of collection and disposal in a combined price, so there is no flagging of the disposal component as being a separate signal and the levy is part of that disposal cost, so the levy doesn't come through as a stronger price signal and also the absolute level of the price disincentive is not as high.

Having said that, commercial operators have moved quite rapidly into paper and cardboard recycling, and a vast bulk of commercial operations which generate paper and cardboard have a source-separated paper and cardboard service. Capturing the next rounds of waste is much more difficult, as Mark Glover mentioned this morning. Once they're a combined stream you have to put in place C and I sorting infrastructure in the form of dirty MRFs, and dirty MRFs are not viable in the current marketplace, even in New South Wales where the price of landfill is higher than every other state. You just can't get a return on capital for that equipment, give or take a few notable exceptions.

MR WEICKHARDT: Like?

MR RITCHIE: Well, REMONDIS put forward a plan for a C and I sort at Botany. The project didn't go forward, not because of a price issue but because of a planning issue. They would be the main ones and then you move to a smaller paper and cardboard recycling facility like SITA's - got its own paper and cardboard sorting and export systems on a much smaller scale from more defined waste streams which are more source separated and segregated.

The key drivers for the C and I sector are, first of all, source separation at point of generation and then, when that can't be economically done or can't be done because of space constraints or other constraints, putting that waste into some kind of dirty MRF infrastructure and sorting it there. The waste industry and the collection industry has been very successful in pushing upstream paper and cardboard recycling services, but other streams are more difficult. There are streams for commingled

containers, fluoro tubes, printer cartridges - a number of small streams - but in terms of big tonnages the next gains are in new dirty MRF infrastructure; that's where you would see a significant diversion.

MR WEICKHARDT: Yes.

MR RITCHIE: And part of the levy increase is to drive the process of that infrastructure implementation.

MR WEICKHARDT: And you say it is going to require at least what - another 30 or 40 dollars a tonne?

MR RITCHIE: What that paper showed is that in the absence of the recent price increase in the levy, the government would need to inject about \$134 million into the New South Wales waste management system in both municipal solid waste, put waste, the C and I sector, both in terms of source separation and infrastructure, and then a whole raft of money in kerbside recycling and various other smaller streams. The figures were in the order of a million tonnes for source-separated C and I, 1.3 million tonnes for C and I sorting infrastructure - this is infrastructure capacity - 1.5 million tonnes worth of processing capacity for MSW and 250,000 tonnes for kerbside.

Those numbers would then achieve the state target and the cost of delivering those programs as an additional expense per tonne range from 20 to 35 dollars per tonne, depending on the waste type, which was a net cost of \$134 million in injected capital costs to either facilitate the private sector coming in or the government actually funding those programs themselves, and that was the additional processing cost of those materials - about 134 million.

The government responded not just to this but various other things by increasing the levy to the \$58. It's my view - and it's early days - that most of that money will not need to be injected now because the market economics for some of this infrastructure is now - you can get a return on capital on some of this infrastructure now. I imagine that there's plenty of capital providers in the marketplace now looking at the waste stream for some of these streams to say, "Yeah, we can fund a C and I dirty MRF," or, "We can fund an additional green waste collection system," or whatever. Certainly councils will be doing the same thing in terms of their own price points.

MR WEICKHARDT: Thank you. You say you recommend that the state government, among other things, apply pricing mechanisms, such as the waste disposal levy, to the entire state. Do you subscribe to the view that the levy should be applied at differential rates, depending upon the standards to which the particular

landfill operators perform?

MR RITCHIE: I think you have got to take a step back from that. What is the purpose of the levy? If the purpose of the levy is to internalise externalities then it's about risk and the standard of operation, so the answer to that question would be yes; that if there are differential standards of operation then the levy would apply differently to internalise those costs. However, I don't believe that that's the sole purpose of the levy. I think the levy has a broader brief than that; that is, to drive the marketplace to create the market incentives for people to invest in capital, and that's not about internalising externalities; that's not about environmental risk. I think the levy performs both those functions.

MR WEICKHARDT: If the levy is not set at a value that internalises the costs, how do you know what the appropriate value of the levy is? I mean, how do we know that these activities that a higher levy might justify are actually environmentally, economically and socially responsible? We could put a levy of a million dollars a tonne on and have people hand-sort every grain of produce, but it might not actually be very productive.

MR RITCHIE: Absolutely, but I think that's at the far end of the extreme and we're nowhere up that bell curve yet in terms of the real price of externalities as one issue and then pricing relative to landfill as the other issue. Take, for example, some work done by Impact Environmental: it suggested that the externalities associated with the landfill was between 70 and 100 dollars a tonne. The price of landfill levy in WA, I believe, at the moment is \$3 and in South Australia it's \$10, so they're a long way from hitting some price point where it matches or equals the cost of the externalities, never mind the additional - - -

MR WEICKHARDT: That's a very high number. 70 to 100 is much higher than many other assessments I've seen.

MR RITCHIE: Yes.

MR WEICKHARDT: What is this organisation?

MR RITCHIE: It's a group called Impact Environmental.

MR WEICKHARDT: Have they published this work?

MR RITCHIE: I believe so. That's a question you could well put to them. I don't know if they have published it. It's a number that floats around the industry.

MR WEICKHARDT: The trouble with this industry is that there are a lot of

numbers that float around and very few of them reconcile with each other.

MR RITCHIE: My point would be that one of the useful tasks which the Productivity Commission could do would be to initiate that work. I saw in one of the other respondents here that the externality cost was between 4 and 12 dollars, I think. If you take New South Wales landfills as a case in point, it is well above those numbers - just the market provision that they are making right now for externalities. Take the Willawong landfill in Brisbane: the cost of remediation of that one landfill is \$64 million and counting. If you work that back on a per-tonne basis, it is substantially more than zero to \$12 a tonne.

MR WEICKHARDT: It depends, of course, whether you are assessing the externality costs on a properly managed modern facility or on a dirty "anything goes" type facility.

MR RITCHIE: Absolutely, and back to your point of should there be a - if you are using the levy as an instrument to embed externalities then, yes, you would say that a well-run landfill has fewer externalities, lower levy. That's a fair argument. I don't think we're at that level of maturity yet in many of these debates and I don't also believe that the levy solely is about internalising those costs.

MR WEICKHARDT: But if it's not about that, how do you know what value to set it at?

MR RITCHIE: I'm not the New South Wales government, or the South Australian government or the Western Australian government, or any of the other governments, but I would believe that their arguments are twofold. One is trying to put a measure on externalities, but secondly as a comparator to drive resource recovery. I believe that they have established diversion from landfill as a policy target and the levy is being used as an instrument of public policy, as opposed to simply a measure of external environmental risk.

MR WEICKHARDT: Is it economically, socially and environmentally sensible or is this actually diverting a whole lot of resources into nonproductive applications?

MR RITCHIE: Well, I'm not the economist that determined the absolute level of the levy, but I wouldn't have believed we're near a price point where we're getting into significant inefficiencies. If you want to divert MSW from a landfill and/or prestabilise it prior to landfill, then there are costs. If you look at the European experience of processing the prestabilising waste prior to landfill, you're talking upwards of \$200 a tonne. Now, Australia is nowhere near that, so there's a lot of room for the instrument to use in a public policy sense.

MR WEICKHARDT: Just on those costs of processing material through an AWT, in your submission you say:

It's estimated by the AWT Working Group that by 2014 a total of 2.76 million tonnes per year of waste will require some kind of AWT servicing in metropolitan Sydney at a cost of close to 100 million per annum.

Now, if my mathematics is correct, that's \$40 a tonne.

MR RITCHIE: It's 1.26 million tonnes of CNI sorting capacity, 30 minutes at \$35 price premium, and 1.5 million tonnes of MSW processing at a \$35 price premium. Those price premiums were established about - what is the current cost of providing the infrastructure against what is the competitor price, which is landfill at the moment. What's the differential between those two? What contribution would need to be made?

MR WEICKHARDT: Is a levy in these calculations?

MR RITCHIE: Yes, the old levy is in the calculations. The new levy is not.

MR WEICKHARDT: The old levy is in the calculations. So just let's think about taking all levies, all gate fees and everything out of there.

MR RITCHIE: Yes.

MR WEICKHARDT: What is the sort of dollars per tonne that an AWT, either for CNI or for municipal waste, requires to operate?

MR RITCHIE: That's a big question, but you're probably talking between \$90 and \$140 for an Australian AWT. Possibly more, depending on what strictures or conditions the local councils might apply in terms of land, who is purchasing land, how the capital is raised, et cetera. I mean, you can add \$30 to that price easily and, depending at the lower end who is competing, and whether they are a private sector company or a public sector instrumentality. Now, the increase in the waste levy over the next five years sends a signal to the marketplace in New South Wales that the cost of landfill will go up and, therefore, the competitive price of AWT is more viable.

MR WEICKHARDT: If the product out of an AWT is simply used as stabilised landfill, how much value has been created in that process?

MR RITCHIE: Again, I would take a step back. The European experience in large

part is to prestabilise prior to landfill. It's a risk based approach to say, "We will minimise the impact in terms of greenhouse gas emissions or leachate risk," prestabilise it and they're processing that material for upwards of \$200 a tonne in order to do that. The Australian context for AWT has been slightly different. It has come from a resource recovery and diversion from landfill set of paradigms, as set down in the federal strategy for 50 per cent diversion by the year 2000 - as set down by ANZEC - and that has been taken up by the various state governments and embedded in their own state strategies for saying diversion is a key policy objective. So AWTs have fit that space in the Australian context by saying diversion is a key component of the AWT activity; the black box that is an AWT. In Europe it's very much, "Prestabilise the material, compost it and put it into landfill," and in Australia it's, "Generate two or three streams - recycled materials, recycled commodities, glass, plastic, steel, aluminium, paper and cardboard - sell those back to market," and that represents upwards of 10 per cent of the waste stream.

MR WEICKHARDT: But, ironically, they're only in that stream because of noncompliance.

MR RITCHIE: Yes.

MR WEICKHARDT: So let's assume a perfect world and the AWT receives simply everything that is left, everyone has been very diligent in recycling all their glass, their aluminium cans, and so the AWT gets no revenue at all from any of those. In those circumstances, if the AWT simply makes material that goes for daily cover and goes to landfill, is the amount of resource that has been invested actually worthwhile?

MR RITCHIE: Again, that's a bigger question. Which AWT are we talking about? Are we talking about composting AWTs here, are we talking about thermal AWTs, are we talking about digestion AWTs?

MR WEICKHARDT: I'm just trying to get my mind around whether or not investing a whole lot of money in resource, into converting a waste stream into material that goes to landfill, is actually justified.

MR RITCHIE: Well, in the European context that's exactly their policy objective. In the Australian context, if you take composting AWTs - just as a case in point, like the GRL plant - it generates electricity, it generates a compost product, which it sells back to market, and it generates recovered recyclable materials. Now, in a perfect world that third stream is not there, but it's going to produce marketable compost and marketable energy.

MR WEICKHARDT: But I understand at the moment that a large quantity of the

material it produces actually isn't marketable.

MR RITCHIE: I'm not here to represent GRL. That's a question I'm sure John Lawson would be happy to answer, but certainly our own technologies in SITA, we produce marketable compost and marketable recyclable materials. The stated aim is to divert 70 per cent of material away from landfill. So if the policy objective is waste diversion then the AWT fulfills a fairly significant function. We also produce dry inert material, which can be used for road base, et cetera. The other point in AWTs is that about 30 per cent of the material in-feed is lost through vitalisation during the process. So you actually have a 30 per cent mass reduction just through the composting process as well. Again, you get significant amounts reduced in terms of consumption of landfill space.

MR WEICKHARDT: Going back to my question: in Europe do you think it is a rational policy to stabilise, by investing \$200 a tonne simply to put material in landfill?

MR RITCHIE: If we had lined landfills across Australia in all local council areas with gas extraction, leachate control, post-closure remediation and provisions in the balance sheets for long-term risk and management, then you could mount an argument that said no, that additional cost is not warranted, that landfills, well run, are relatively denying. That is a fair argument. SITA itself is a significant landfill operator. We would argue that point. If you come at this debate from a resource recovery point of view, however, you come to a different set of conclusions and I guess that's the departure point. You know, we need to understand from both the Productivity Commission and also all the state policies. If you start from a position that says, "Diversion from landfill is not a valid policy position," then you would ask the question of all of the state strategies and therefore all of the business strategies which underpin it. Companies like our own.

MR WEICKHARDT: Yes. I mean, you made the point that a number of people have made, and it seems to be a sort of fairly constant mantra in this inquiry, that you want to see that the level of subsidies provided in Australia for virgin material actually - well, you say that the level of subsidies greatly exceeds the support for recovered materials - a comment a number of other people have made. Where do you see these levels of subsidies that aren't available to, say, an AWT company?

MR RITCHIE: I would love to see a report, you know, a proper analysis of exactly that question. So if you take office-like paper, for example - 11 per cent recovered across the country, 89 per cent of it going to landfill. We need a good life cycle analysis which says, "Is it cheaper and more cost effective, more environmentally responsible, to obtain the next sheet of white paper from the waste stream or is it more environmentally efficient, economically efficient, to recover that piece of paper

from the virgin timber stream?" and take into account all of the life cycle costs and subsidies involved in that. Now, that has not been done in any level of sophistication in the country.

The only study that I know of - well, there are two studies that go part-way to do that. The first is the ACOR environmental eco services study, which I believe you have got, which I think quotes many billions of dollars worth of environmental services. The second is the study by Nolan-ITU into kerbside recycling, where they looked at the full life cycle analysis of kerbside containers and said there was a \$266 million net benefit to the economy of kerbside recycling. Now, I don't believe we have done that study in relation to all of the other waste diversion technologies and streams. It is certainly something I would like to see the Productivity Commission recommend and some serious money go towards it.

But from the outset I think the comparison we are making - governments are forced to make a comparison to landfill because that's the alternative at the moment. They don't have a set of facts and figures over here that says the comparator to virgin material is X, Y, Z, and no state government has the capacity - it's a national role - to go and find out what is the full cost of subsidies of, say, a sheet of virgin paper against a piece extracted from the waste stream.

MR WEICKHARDT: Okay.

MR RITCHIE: Does that answer that question?

MR WEICKHARDT: Thank you very much indeed.

MR RITCHIE: My pleasure.

MR WEICKHARDT: Okay. Now, we will adjourn briefly and we have next the Waste Contractors and Recyclers Association of New South Wales.

MR WEICKHARDT: We will restart the hearings and the next participants are the Waste Contractors and Recyclers Association of New South Wales and perhaps each of you could just introduce yourself, your name and your capacity here, please.

MR KHOURY: Thank you, Philip. I am Tony Khoury and I'm the executive director of the Waste Contractors and Recyclers Association and I'm joined today by three of our members: Mr Harry Wilson, who is our senior vice-president - - -

MR WEICKHARDT: Perhaps just for the transcript, if you speak then they will be able to distinguish who is speaking.

MR WILSON: Not a problem. Harry Wilson, senior vice-president of the association and in real life, managing director of SMS Municipal Services and Handybin Waste Services.

MR WEICKHARDT: Thank you.

MR ALCAINO: Claudio Alcaino, also a part of the association, representing also REMONDIS, business manager of our legal waste division.

MR WEICKHARDT: Thank you.

MR BLACKMORE: Jason Blackmore, just a member of the association, employed by Sims Metal.

MR WEICKHARDT: Okay. Thank you. Now, you should assume that we have read your submission but, if you want to, you can make a few remarks.

MR KHOURY: Yes. Well, what I would like to do is basically walk through and highlight our submission, which I think is in about 16 different parts. Some are more voluminous and probably more important than the other parts but we have consulted with all of our members and canvassed their views and the submission that you have got, dated 6 February, represents the collective views of our members. It's important to note that and today we will endeavour to highlight the key aspects of that submission and hopefully answer any of your questions and clarify any aspects of the submission that you would like to talk about, Philip.

We note that the core function of the commission is to conduct public inquiries on key policy or regulatory issues bearing on Australia's economic performance and community wellbeing; in particular, to look at some performance monitoring aspects of some of the decisions the government makes. We will probably refer to a number of examples throughout our submission that might assist you with the performance of your core function. We represent approximately 87 members across New South

Wales, who control and operate around about 80 per cent of the collection vehicles used in the collection of waste and recyclables across New South Wales.

In most cases, wherever a council contracts out its waste or recycling service, it does so to one of our members. It's important to note that because our transporters come in contact with every waste generator. In addition, many of our members have large national and international operations and they are able to offer this inquiry a tremendous depth and breadth of experience across all areas of waste management. So the first of the 16 areas that we were going to talk about in our submission is household domestic waste. In essence, we would like to propose to the inquiry that all domestic waste collections should be based on a three-bin collection system: one for mixed waste, one for dry recyclables and a third bin for green waste.

We would qualify the third bin by saying that in some metropolitan councils in inner city areas there wouldn't be sufficient volumes of green waste to warrant that third bin. Generally speaking, that is what our association believes should be promoted by all councils if we are going to promote the proper principles of the highest resource recovered element that we can out of each of the streams.

MR WEICKHARDT: You are representing collectors so you would love more bins, presumably?

MR KHOURY: Well, we not only love more bins but we also support the principles of, you know, good economic and environmental management and many of our members are operating landfills and transfer stations and processing facilities and recovery facilities as well. So we are not just a waste transport association.

MR WEICKHARDT: Okay.

MR KHOURY: Our members are quite diversified.

MR WEICKHARDT: Okay.

MR KHOURY: Transport is but one element of their operations but I say that transport is the nexus between the waste generator and the transfer point or the reusable point or the disposal point. So we do contact the waste generator. That's why I highlight the transport part.

MR WEICKHARDT: Okay. Thank you.

MR KHOURY: We also say that generally councils should be responsible for doing their own studies to determine bin sizes and collection frequencies. There should be no generic model that says a council has to have its waste picked up in a

240-litre bin once a week. That needs to be determined, almost invariably, on a council-by-council basis. We highlight the use of the green waste bin because we believe that that would significantly divert a great volume of green waste away from landfills and that green waste, if directed into the proper processing facilities, would be a source of great organics for farming, agricultural, rehabilitation and forestry purposes.

We go on and we say that as a minimum all collection contracts should be undertaken in accordance with the New South Wales domestic waste code of practice, which is put out by WorkCover. We highlight to this inquiry that OH and S issues should not be underestimated or in any way compromised as we set about achieving some of the other objectives that we are going to set for waste generators and for this inquiry.

MR WEICKHARDT: On that point there are some interesting trade-offs in this area, as there are in most. I guess from a point of view of the recycler getting a source separated in materials, whether they be newspapers or plastic bottles or cans, or green bottles versus white, the more you can get them separated the happier the recycler is. Yet, we have gone to commingled bins, I guess on the basis of both cost and OH and S drivers. You then go to the MRF situation where you have people who are - a bit to my horror - hand-separating out materials. So we have transferred the occupational health and safety risk from out on the road and bad backs and people being hit by cars, which we obviously don't underestimate as a real risk - but we have transferred that to a risk somewhere else where people are wading through lots of rubbish and separating it out by hand, which doesn't look like a particularly pleasant job, either.

MR KHOURY: Well, it's a high-risk factor that we continually take into account across the industry. We do suffer as an industry from some very high workers compensation premiums. We do have lots of OH and S issues and hence the code of practice for domestic waste that was negotiated between all stakeholders in New South Wales and brought together by WorkCover.

MR WEICKHARDT: I see some people are saying - I don't know whether you refer to it here, but the collection of hard rubbish is actually something that is of concern to those people who collect it, due to occupational health and safety - - -

MR KHOURY: Yes. I'm not sure what you mean by the term "hard rubbish".

MR WEICKHARDT: You know, old fridges and kerbside - - -

MR KHOURY: Okay. We're going to talk about that. That is of concern to us, kerbside collections, yes. That is a major OH and S matter and you have raised the

question. I mean, many of our members would not tender for one of those contracts if it was on a stand-alone basis because of the OH and S issues. Generally, our members will only tender for a kerbside collection contract if it's part of a series of contracts for domestic kerbside collection, because of the OH and S exposures.

MR WEICKHARDT: That doesn't stop the OH and S exposure. You're just saying it dilutes it.

MR KHOURY: It does, but that's something that we're continually aware of and we're trying to work through. It has seen the nature of the industry change over many years. I mean, when we were young kids and growing up, we all had 55-litre tins in the backyard that were picked up on Mondays and Fridays and, you know, that's no longer the case.

MR WEICKHARDT: But there's a real dilemma for society, isn't there? If you don't give householders a way of disposing of some of those products in a convenient, user-friendly way, then I guess the risk is that they're either dumped or they're just hoarded and they're not reused or recovered.

MR KHOURY: That is a fact. You will probably cause yourself illegal tipping problems if you don't and we will refer to that in our submission, you know, in a moment on the issue of illegal tipping and littering. What I'm going to do is just try and walk through it so I don't sort of leave any parts of it out, and these gentlemen can help me fill in the pieces. We have noted, across New South Wales in recent times, that there have been a number of councils who haven't allowed adequate lead times for tenders to be prepared and submitted for council collection contracts and, by not doing so, that's just maximising the possibility that there could be a poor waste management result in those council areas.

Similarly, when seeking to contract out waste and recyclable collections, council should ensure that the ultimate tender reflects the advertised terms as stated in the original expression of interest or as stated in the advertised tender opportunity. Again, there have been some poor practices there of councils in recent times which have served to undermine commercial investor confidence in the waste industry in New South Wales.

We have also noted recently that councils have ignored the fact that industry has to invest many millions of dollars in capital to be able to service these contracts and that councils should allow investors to recoup those outlays over a minimum of five years. We had a recent example of a western Sydney council that advertised and awarded a one-year contract and, you know, in the view of our members and our industry that was a very poor option. It resulted in there being very, very few tenderers who submitted a response to that.

We have even noted in recent times that that council is yet to advertise that work again, despite the fact that that contract is due to expire in 17 weeks' time. It's the accepted practice of our industry that it would take you a minimum of 26 weeks from the time the tender was advertised to be able to submit your tender, be awarded the contract and then gear up to prepare the work. So these are real issues that we have experienced in recent times that serve to undermine investor confidence in the industry.

MR WEICKHARDT: No doubt you made your point to that counsel.

MR KHOURY: We have, but we're still waiting for answers.

MR WEICKHARDT: What's their response?

MR KHOURY: We're still waiting for answers. The next area is the area of uniform data and we believe that there should be common agreement across all states as to how data is measured and collected. In particular, at the micro level, issues like transfer stations and landfills not having weighbridges where they operate below a threshold 20 or 30 thousand tonnes, in our view - I mean, that's just poor practice because you never really know when the threshold has been achieved and it's just a question that, in our view, all landfills and transfer stations should have weighbridges so that we can accurately measure what is coming in and what is going out.

Similarly, with the differing levies across the state of New South Wales, you have got a different levy in the Sydney metropolitan area; a lesser levy in the extended regulated area and no levy in other areas. We think that that would cause some discrepancy in data as well.

MR WEICKHARDT: In data?

MR KHOURY: In that it would probably lead to different outcomes. More material may be landfill because there's no levy and less recyclables. We know of examples in some rural councils where the levy doesn't apply where they only have one bin because there's no levy, there's no incentive.

MR WEICKHARDT: I guess that's possibly true, but it's possibly true that even if you collect recyclables and you're a thousand kilometres away from any market for them, that by the time you have transported them there you have used up more resources than are in those recyclables, so I guess a one-size-fits-all solution doesn't necessarily seem to be all that sensible.

MR KHOURY: True, but I think there has got to be just a little bit more flexibility

in how those levies are set, because some of those towns and cities have very big regional centres in their own right and there are significant volumes of material in the places like Tamworth and Wagga and those surrounding areas. They're very big centres. Dubbo is another one.

MR WEICKHARDT: Thank you.

MR KHOURY: When measuring recyclables I have been asked by our members to highlight the fact that we should also measure the percentage of waste and contamination that makes up what is reported as recyclables and that it's critical that we do that if we're to strive for reductions in contamination or to measure the effectiveness of our expanded recycling initiatives.

The third area, albeit a minor one, is that of web based exchanges, and we notice that was in your issues paper. We don't see it as an issue. I mean, it's more of a feel good than a significant answer to any of the issues that we feel face the industry, and the market can sort out whether there's a need for a web based exchange or not.

The fourth area, education and training. If we're to increase our efforts in recycling and reuse, there will no doubt be increases in contamination, so we think that if the government is collecting more in the way of levies then they should redirect more back into education and training to alleviate the amounts of contamination, and that the levies themselves should be - a portion thereof should be directly channelled back into the waste and recycling industry to assist with commercial recycling initiatives.

MR WEICKHARDT: Are there any examples of successful education and training or compliance enforcement in this area? Because it appears to be a genuine problem that you get poor compliance and contamination which obviously frustrates recycling. Do you have any solutions that you have seen work?

MR WILSON: I have several councils that I work for in this area collecting recyclables. Unfortunately every council has a different approach to education. There is no standard. Also unfortunately, some of them see it as a political issue and want to stay away from the stick. They like the carrot but when you have actually got to discipline ratepayers for contamination you get very little support from some councils because they see it as politically no. So there can be a lot more work done in that area.

MR WEICKHARDT: So who have you seen and how have you seen the stick, as you call it, or compliance enforcement actually handled well?

MR WILSON: I won't quote councils because some of the stick is illegal that they're using but I do work for one council that uses a stick very severely in removing a service if it's contaminated, after several warnings, and that seems to work very well. Do they have a right to remove the service? I don't think so.

MR WEICKHARDT: How do they identify where the contamination is arising?

MR WILSON: Inspection and contamination records.

MR WEICKHARDT: So is that at the sort of point of tipping it into the truck?

MR WILSON: Correct, yes. Inspection of the containers at the side of the kerb.

MR KHOURY: The next area that we'd like to talk about is the issue of market power in New South Wales. Throughout the early 80s and through to 2004 the New South Wales state government legislation planning laws and policy ensured that there was only really one provider of putrescible waste, transfer station and landfilling services in the greater Sydney area, and that's Waste Service New South Wales, also now known as WSN Environmental Solutions. It makes Sydney very unique in terms of the rest of Australia in that you've got a government-owned business unit that exerts such a significant control over the market. You've also got that situation where the government controls the legislation that controls the industry. Now, both the WSN and the New South Wales DEC report to the same minister.

Until 2004 all of our putrescible waste had to be disposed of via WSN Environmental Solutions throughout the greater Sydney area. In 2004 that changed when Collex managed to have the Clyde transfer station approved so that they could feed material into their Woodlawn facility near Goulburn. But that doesn't change a whole lot in that Collex really only has one transfer station at Clyde. WSN has a network of 11 transfer stations and landfills across all parts of Sydney. If you talk about productivity, well, the greatest productivity issue that we have in this industry is making sure that the trucks do sufficient collections. Because of that network of transfer stations WSN is in a far superior position to Collex is with its one transfer station.

The profit margins in landfill have traditionally been much, much greater than in the transport sector where the competition for work is much broader. In recent times WSN has expanded its operations into kerbside collection of waste and recyclables and that's facilitated by the very significant market control that that government-owned business unit has over the putrescible waste disposal market. For any other competitors to enter the putrescible waste market there's a lead time of a minimum of five years by the time you identify a site, go through the planning process and have it approved. We've seen recent contracts that have been tendered.

MACROC is a classic example where it was pointed out to the government by our association at the very outset that there was only one way that this contract could possibly go because of WSN and its control over the Jacks Gully facility and that's the way it went.

We have also heard in recent times that the government intends to sell off parts of the WSN business. That could solve part of the problem but I guess our association would just like to highlight too that this market power issue is of material significance to the waste and recycling industry here in New South Wales, and that if we are to make any recommendations that you be fully aware of the full implications of this market power issue.

MR WEICKHARDT: Well, of course we're not the appropriate authority to rule on that. You mention that the ACCC has been informed about your concerns.

MR KHOURY: They have, yes.

MR WEICKHARDT: What was their response?

MR KHOURY: There's an ongoing inquiry.

MR WEICKHARDT: There are certainly people charged with the responsibility of ruling on those matters.

MR KHOURY: Sure. But there could be productivity implications and you need to be aware of the background, given the different nature of the market here because of that government-owned business unit.

MR WEICKHARDT: Yes. The other comment you make, which I found a little confusing, was that you say it's not been possible for WSN to obtain more landfill approvals apart from on their existing sites since the 1980s, and yet private contractors have little problem in doing this. If that's the case and the profit margins are higher, why aren't private operators getting more landfills approved?

MR KHOURY: Well, we have seen them in recent times. I mean, we've seen Collex at Horsley Park. We've seen Collex at Woodlawn. We've seen Penrith Waste at Blacktown and we're about to see Dial A Dump out at the rear of Wallgrove Road.

MR WEICKHARDT: Is that solving the market power issue there?

MR KHOURY: I think you've heard several times today that there is no shortage of hold space in Sydney. Sometimes we are of the view that maybe the shortage of landfill space is in the minds of government rather than - private enterprise doesn't

necessarily have that same view.

MR WEICKHARDT: Okay.

MR KHOURY: That leads us very nicely on to the next point then and the issue of landfills, quarry space and being a resource-rich country. If we're to price landfills out of the marketplace, where are we going to locate the next incinerator or the first incinerator? We often get compared to Europe. In Europe, as many of my colleagues who have travelled there who I've spoken to have told me, if there are no landfills then there are waste-to-energy facilities. We haven't got the latter, yet we're trying to put all these restrictions on the former. But in between, being a resource-rich country, we're generating lots of quarry space.

Mike made the point earlier of needing lined landfills. I mean, I'm of the view that in areas like western Sydney, where you've got this great clay resource that has such a beautiful bathtub effect anyway, that perhaps you don't even need a liner in some cases if you can prove the geotechnical benefits of having an unlined landfill, because the clay liner will act as a natural liner anyway. In some cases you could well argue too that the proper and controlled landfilling of an abandoned mine site is a far better environmental proposition than leaving the abandoned mine or quarry in an unrehabilitated state.

That's what many of our members have done. They've found old quarries or old abandoned mines and they have rehabilitated them through the income stream that they've received through their waste activities. Some of our members have raised the question that for every cubic metre of waste that we generate in Australia per day we're generating one and a half cubic metres of quarry void space somewhere. We don't have the resources to investigate that but that's worth investigating. I mean, if we're going to continually develop these mines and quarries, does that make us more unique than other parts of the world and that we shouldn't just throw the whole landfill question out the door?

MR WEICKHARDT: Some of them may not be very conveniently located, next door to urban centres, of course.

MR KHOURY: True. Well, the urban sprawl is a big problem but I think Collex have proven with their Clyde-to-Woodlawn solution that it is possible, through their intermodal facility, in an economic and proper environmental fashion, to take waste long distances by transferring it through rail. There have been a number of other of our members who have looked at projects in the Hunter Valley and in the southern part of New South Wales. They haven't managed to take them through to operational purposes. I think one of our members ended up in front of the Department of Planning at the time through a commission of inquiry and failed at the sort of last

moment. So there are other examples where it has come close to working. If we do keep pushing the envelope on the landfills, and we're not considering these waste-to-energy facilities, then we're going to have a problem somewhere along the line.

The next point is on alternative waste technologies. One of the most critical issues that are faced by the industry is how to assess and gauge the effectiveness of AWT facilities. One of the big selling points that they use is their representations about diversion away from landfill, and who is actually charged with the responsibility of measuring the reporting on the honesty and effectiveness of those representations. We've forced the price up here in New South Wales, or we're going to force the price up by a significant amount of money to make it economically viable for these facilities to be able to compete with landfill. If at the end of the day they don't achieve their diversion rates, who is there policing it?

Waste generators in this state by my experience - you know, it has not sort of long been their practice that they fail to follow up or take any interest as to what happens with their waste once it leaves their premises. You know, it's very much going to have to be the responsibility of government. The government have put their hand up and said the levy is going to rise by 30 or 35 bucks a tonne over the next five years, and the flipside of that is they need to put some measures in place to measure the effectiveness of AWT. All inputs, all outputs, by product type.

MR WEICKHARDT: In raising that - and you're not the first person to raise your concern here - you've got some suspicion that these are not performing according to promise?

MR KHOURY: It would be unfair of me to answer that. I don't have any information to that effect. I just think it's a legitimate concern, though, that we would have. I've been in the industry for 16 years and I've been involved in many recycling things and initiatives. The more different inputs you have, the harder it is to manage your process and to manage your outputs. I mean, I've managed, say, small concrete recycling facilities that end up with contamination issues because you've had a poor control over your front end. I can only just well imagine the difficulties with managing a large facility. Harry, you're sort of going through something at Coffs Harbour where you might, you know - - -

MR WILSON: It's a three-bin system that we're starting at Coffs Harbour for alternative waste technology on two of the streams, but I can't comment other than to say that, yes, the exact information coming in about the AWT needs to be confirmed on a regular basis other than sales pitches. I can tell you a lot of things about what we've told the council we're going to do, but come back and ask me in two years' time.

MR WEICKHARDT: Okay.

MR KHOURY: Siting issues are something that concerns our industry significantly. We're got a number of examples of facilities that have been forced to close down or have had to relocate because of the urban sprawl. That adds to the cost of recycling. I mean, one of our members who operated a metal recycling facility in western Sydney for many, many years has had to relocate to Newcastle. That doesn't come without cost. You know, sometimes you've got to question whether government has taken into consideration all that they need to consider before allowing, you know, residential areas to open up and the community generally I think needs to be better educated about overcoming this "not in my backyard attitude" to the siting of waste facilities because the greater we push them out, the more difficult it will become to recycle, the greater the transport costs will be and I think we really probably should be directing some of the levy back into education programs there.

MR WEICKHARDT: Yes.

MR KHOURY: And that brings me nicely to the levy. The levy generally is supported by industry, but it should be almost totally hypothecated back into the waste management industry. That's not the case in New South Wales. It's used for many other purposes. At the same time there has to be a degree of commonsense in where the levy applies; for example, a metal recycler or a paper or cardboard recycler will generate an amount of waste at the rear end of their process - a pit waste or a flock waste. It's unavoidable.

You have heard Mark Glover today use the cardboard example with the steel nozzle and the plastic handle. Unfortunately if that container, that cardboard container, went to one of our members and was recycled, that steel nozzle and that plastic handle would end up in their pit waste. They've done all they can to recycle that container. That pit waste then has to go off to landfill. In recent times we have seen the government announce increases in the levy. It will disadvantage many of our members significantly.

Take, for example, the recycling of a motor car. We want to recycle a motor car at the end of its life because there is a significant amount of metal there and we want that metal kept out of landfill. Our members are responsible for keeping something in the order of 750,000 tonnes of metal out of landfill in New South Wales, but with the increases in levy they are going to be penalised now because of the flock waste that they're still generating. The flock waste will stay a constant in the whole process. It has to go to landfill as there is no other use for it - none that we can work out at the moment anyway - so they are going to be penalised. There is a

difficulty in raising their recycling prices because we're dictated to by world metal price markets.

MR WEICKHARDT: But presumably it's an impost that they will take out by paying less for a wrecked car when they take it at the end of life.

MR BLACKMORE: If I could answer that. New South Wales is a unique market for scrap metal in Australia. We basically operate on a commodity world parity pricing; therefore if costs increase in New South Wales we do not see the benefit of increased sales margin. We compete with overseas commodity markets.

MR WEICKHARDT: I understand that fully, but you have got the metal you reclaim; you're selling that a world commodity price. You've got the cost of disposal. If the cost of disposal goes up, something has got to give; either your profit margin gives or you pay less money to the person from whom you bought the wrecked car in the first place.

MR BLACKMORE: If we take regional scrap metal - we say to our friends out in Bourke and Wilcannia, "Sorry, we can't come and pick up your cars, fridges and washing machines. They'll have to go into landfill," because to recycle a refrigerator the cost of recovery as opposed to the cost of disposing of the 90 per cent of the fridge that cannot be recycled just makes it prohibitive.

MR WEICKHARDT: Right.

MR BLACKMORE: We'll be okay in metropolitan New South Wales. Should we take that attitude to particularly regional people?

MR WEICKHARDT: Okay.

MR KHOURY: The application of the levy on asbestos - and I know it's not the brief of this commission to look at hazardous waste and asbestos but it's a nonsense - the fact that the levy applies to the landfilling of asbestos. There is no other possible use for asbestos other than take it out in a safe manner and dispose of it to landfill, and for the government to apply the levy on the landfilling of an asbestos product just smacks of revenue raising.

We note recently that the government has announced that it intends to abolish the levy for interim and daily cover at landfills. That could cause a problem for the industry, too, in that many of our smaller members who operate in recycling facilities generate products from their recycling initiatives that were used for interim and daily cover, and with the government scrapping those exemptions it will cause those operators difficulty and that's just a case of the government not having properly

consulted with the industry on that one, and it is one we still intend to take up with them here in New South Wales.

MR WEICKHARDT: So if I understand that correctly, the government or EPA say, "If you want to run your landfill correctly you've got to put daily cover on every night," and yet the New South Wales government is saying, "When you do that and comply with the EPA's requirement we're going to ask for a levy."

MR KHOURY: There used to be an exemption for daily cover where you didn't have to pay levy on - I think it was something like 10 per cent of the material coming in because that was the amount that was used for daily and interim cover and you cover for operational reasons, you cover for environmental reasons to ensure that you don't get odour; you don't get litter that blows across the landfill; that the vermin don't go in, so you have to cover your landfill as your working day finishes.

MR WEICKHARDT: Yes.

MR KHOURY: Some of our smaller members who are very efficient recyclers had products that they generated off from their screening operations that were used for interim and daily cover.

MR WEICKHARDT: Yes, and is this exemption definitely going or rumoured to be going?

MR KHOURY: 1 July it's gone.

MR WEICKHARDT: Thank you.

MR KHOURY: Waste transporters. Our members are of the view that all waste transport vehicles should be licensed and that there should be some strong licence conditions associated with all waste transporting activities and if done so then it will promote better waste management across the state. When I wrote this report licensing wasn't currently required but in the last two weeks the DEC have put a note out saying that they will be introducing some licensing, so we have seen a change there. We're in the process of responding to that.

MR WEICKHARDT: Okay.

MR KHOURY: We will say one thing about the policies of other government departments though; that is, that they can negatively impact on waste and recycling transport initiatives on occasions, and we are in the middle of a dialogue with the Roads and Traffic Authority at the moment, that can significantly impact metal recycling transport operations across the state where they are enforcing some

legislation that was recently passed which could result in 140 trailers being grounded. I said earlier that 750,000 tonnes of material is pulled out of rural landfills. So, you know, those sorts of things - those sorts of decision - where proper consultation doesn't take place, where those trailers have been registered by that authority for the last 20 years - can cause industry major, major problems. They are major issues.

MR WEICKHARDT: I am conscious of the time. Can we try and wind up in about five, please?

MR KHOURY: Okay. Illegal tipping and littering: we spoke earlier about asbestos and the application on the levy of asbestos to landfill. If there was no levy on asbestos it should drop the price of asbestos into landfill and it could solve some of the illegal tipping problem that happens. The obvious distinction between illegal tipping and littering is that illegal tipping is generally commercially motivated and littering is one of carelessness. I think we made the very strong recommendation that you need to talk to the likes of Clean Up Australia, who have got programs in place for the improvement of littering.

Domestic kerbside collection clean-ups - it's our strong view that they are a major OH and S issue for waste industry workers and that many of our members will avoid bidding for that type of work because of the high workers compensation exposures. Maybe a series of well-located, suitably designed drop-off centres might be a better solution.

MR WEICKHARDT: Well, I can see it's a better solution for you guys but for the little old granny who has a surplus fridge, you know, getting that to a drop-off centre is a bit difficult.

MR KHOURY: I understand. Just note the concerns of our workers as well.

MR WEICKHARDT: Yes.

MR KHOURY: Skip waste policy - I mean, this inquiry, as I said at the outset, is about productivity. We trust that you are going to take this next point on board. In Sydney we have 40 local councils. Invariably, each of those has a different waste skip policy. You know, some of our members, smaller members who have got three or four trucks, have in the vicinity of 30 to 40 thousand dollars tied up in government bonds with different councils. There are different requirements they have to adhere to. Recently the Roads and Traffic Authority and WorkCover have come up with their own pronouncements. If you are talking about abolishing red tape and assisting the industry with productivity issues, then I can think of no better example than this one.

That needs to be tidied up. We have spoken to the various government departments, the DEC, the local government, and it's fallen on deaf ears. We have not managed to make any inroads into this issue. Our industry supports proper practices but we also have got some economic and administrative considerations that we need to follow, so we would like that all brought together somewhere along the line. Key performance indicators - well, there's very little point in having waste management recycling targets that cannot be met. We are continually confronted with notions like zero waste. I don't want to be cynical but they do tend to border on the ridiculous.

Container deposit legislation - it is our very strong recommendation that you do a comprehensive cost benefit analysis at the federal level - not at the South Australian level but at the federal level - to determine the issue of container deposit legislation and take note of some of the complications that can be caused if that container deposit amount is too high or too low. Finally, we thank you for the opportunity to have lodged this submission and welcome any opportunity that we might be given to elaborate on these issues either now or later. Thank you.

MR WEICKHARDT: Well, thank you very much indeed, Tony, and your colleagues. It is an interesting and useful input into the inquiry. You raise a number of issues that we are getting input about and it's important that we understand your point of view. So thank you for that.

MR KHOURY: Thanks, Philip.

MR WEICKHARDT: Okay. We are going to adjourn now until 3.15. Thank you.

MR WEICKHARDT: We will resume the hearing now and the next participant we have is Mr John Lawson, representing the Australian Council of Recyclers. If you could just for the record say your name and position before we start.

MR LAWSON: My name is John Lawson. I am the president of the Australian Council of Recyclers.

MR WEICKHARDT: Thank you. Now, you want to make some introductory comments?

MR LAWSON: Yes. I would just like to give you an overview. I understand you have asked for that to be about 10 minutes' worth and then the rest of the time for questions, if that would suit.

MR WEICKHARDT: Yes.

MR LAWSON: I would like to start the presentation with a back to the future sort of question. If you found yourself having to justify to your great-great-great-grandchildren how our generation had stewarded their resources, could you justify our current actions in resource depletion and wastage? ACOR believes that it's vital that governments provide the leadership required to replace the current take-make-waste pattern with a more sustainable of consumption, reuse and recycling. We would like to see an end to waste strategy and its replacement with a resource efficiency approach.

We would recommend the approach taken in a recent article in the Economist which advocated three things needed for a new market based green revolution: get the price right for the services of nature; secondly, develop the information that is required to set those prices correctly; thirdly, embrace the concept of cost benefit analysis for applying that information in setting the prices, recognising of course that some things in nature just are irreplaceable. We would also add a fourth point, to develop the planning and infrastructure required to deliver sustainable outcomes, as well as a number of associated recommendations that we have and I will just touch on briefly shortly.

ACOR wants to see a national strategy of maximum resource recovery and continuous improvement in resource efficiency, which would seek to value resource recovery, eco services in resource recovery, to create mechanisms to overcome existing market failures, to financially reward eco service provision, improve data collection, improve the planning and provision for resource recovery infrastructure, to further develop national standards for recycling products and to establish a fund for resource recovery industry development. ACOR estimates that implementing this strategy has the potential to delivery \$912 million of commodity inputs per annum

additional to current recovery, to delivery between five and nine thousand jobs and in excess of three and a half billion dollars annually of associated ecosystem services.

The alternative to this sort of strategy outcome is not just more of the same in terms of wasted resources but much more of the same as wealth grows in the short term and waste with it. Our great, great, great grandchildren's judgment of us will not be how much short-term wealth we created and consumed for ourselves but what sort of a legacy we left for them. The second-page diagram shows that currently we are recovering at the best about 40 per cent of the energy and material value that goes through the Australian economy. There is a disposal amount of probably 60 per cent or maybe more and we are advocating a change from that circled disposal emphasis or outcome of 60 per cent to change that to overcome that disposal-focused - overcome resource inefficiency through, in terms of our first point, developing a national strategy for maximum resource recovery and continuous improvement in resource efficiency.

Then taking the range of actions that are summarised by our key recommendations: improving the mechanisms for valuing eco services, introducing a range of mechanisms to overcome market failures in the delivery of those services, rewarding financially the eco services delivered, to improve data collection, to improve the planning and provision of resource recovery infrastructure, to further develop the national standards for recycled products and our last recommendation is to develop a fund to support resource recovery industry development. As I say, the benefits of taking those actions we see could be a billion dollars worth of commodity value recovered additionally per annum, 68,000 gigawatt hours of embodied energy recovered with those materials, 3 and a half billion dollars of eco service delivered, up to 9000 jobs and greenhouse gas emission reductions in the order of 20 million tonnes of CO₂ equivalent. Thank you. That's it in a nutshell from the Australian Council of Recyclers.

MR WEICKHARDT: Thank you very much indeed, John. A lot of what you say nobody would or could argue with in terms of the sort of fundamental principles here. I suppose what we're all debating is how do you translate those principles and judge what is the appropriate policy that is in the long-term interests of our current community and those that follow us. The issue I would like to explore is you note that you want to see a national strategy and maximum resource recovery.

MR LAWSON: Mm'hm.

MR WEICKHARDT: A lot of people have used those sorts of words and implied that, you know, a single molecule that goes back to landfill is a molecule that has been wasted. It would seem to me that the old adage of some's good, more's better, doesn't necessarily apply. Mostly in nature there are optimum levels where there are

diminishing returns from continuing to do something to the last possible technical limitation.

MR LAWSON: Yes.

MR WEICKHARDT: The question is really how do you judge where that optimum is? You have quoted a number of actions that are possible and a number of benefits. The benefits look wonderful. The question is, I guess, what are the costs that are associated with gaining those benefits and how do they compare with some of the alternate options so we can judge whether this is the best way that society can proceed, and that we do achieve the objective you've talked about?

MR LAWSON: Yes. Firstly, I suppose you're exaggerating to make a point with people that are pursuing the last molecule to landfill.

MR WEICKHARDT: Yes.

MR LAWSON: You note that our approach is a national policy of maximum resource recovery and continuous improvement in resource efficiency. We would recognise that there's a need to make that resource recovery that's done, affordable. It's up to a lot more than the Australian Council of Recyclers to decide what's affordable, but we're saying that the policy should relate to recovering resources rather than a policy based on an approach to waste. Current approaches have been well meaning, certainly, with waste to landfill diversion targets, but they don't seem to have worked.

As the Economist article states, we need to start with getting the price right for the services of nature, because there are indisputable externalisations of costs going on that are affecting our climate and going to affect the future. There are also no ways of valuing resource depletion. If you look at papers on sustainable mining you'll find that, for instance, in lead we've probably got lead mines operating on resources that are about half the concentration of lead that they were 50 years ago. If you project that forward, the amount of recoverable lead is going to be very tiny in the future; but at the moment we can harvest those economically and you don't pay anything for depleting recoverable lead resources.

Meanwhile, we spread lead through landfills at rates of about 0.2 per cent by mass of the landfill and that will never be recoverable because - well, not in anybody here's lifetime, I'd say, or view of the future, because current recoverable lead levels are probably 5 per cent. Imagining that you can recover stuff that goes into landfill at the rates that it is, is not realistic at the moment.

MR WEICKHARDT: One comment there. You're suggesting that the markets we

have at the moment are completely incapable of recognising those sort of scarcity factors.

MR LAWSON: Yes, there isn't - it's not recognising a scarcity factor, it's recognising a depletion factor.

MR WEICKHARDT: If the mine is operating at half the sort of level of lead that's recoverable, its costs alone must be greater.

MR LAWSON: Yes.

MR WEICKHARDT: I'm not quite sure in this world, if the market isn't giving a signal through price for depletion of that resource, which great authority in the sky is going to say what the right price is?

MR LAWSON: It's clear that there is no market signal for resource depletion, because there's no way to trade in avoidance of resource depletion.

MR WEICKHARDT: I would have thought typically - and I'm not an economist so I don't want to get into a long debate about this - as products become scarcer, markets do react to those. Now, maybe the sort of discount factors that are implicit in those are only those of one or two generations, but markets do react to those sorts of things. You might say not fast enough, but I guess predictions of depletion of resources have been going on for a long while. When I was just a young lad, the Club of Rome were predicting that we were going to run out of lots of things in a very short period of time and prices went up, and more reserves were discovered. Actually trying to predict this and trying to set the right price is - I mean, nobody argued with the Economist's point of view that getting the price right is important.

MR LAWSON: Yes.

MR WEICKHARDT: I'm not quite sure, however, how you're suggesting we do get the price right.

MR LAWSON: What ACOR is saying is there needs to be a value put on resource recovery.

MR WEICKHARDT: By whom?

MR LAWSON: By governments ultimately, because there's a market failure for resource depletion. Now, ACOR won't set the price for that resource recovery service, but if you rely on the potential for the supply of, say, metals in particular in the future to be - that potential supply - that future supply of metals, if you rely on

that when - let me start again, sorry. By saying it hasn't been a problem in the history of our extraction of metals to deal with resource depletion in the past, therefore we can assume that it's not going to be a problem in the future to deal with resource depletion, you're actually assuming technological solutions that we don't have at the moment.

An alternative to that is to say let's take some precautions about the supply of metals in the future. Let's agree on what's a reasonable recycling rate for metals now, what's affordable, and let's pursue that. Not let's pursue the last molecule of recovery of lead, aluminium, et cetera, but let's decide what our recycling systems are designed to do. We don't need to second-guess the future completely, but we do need to value our recycling activities.

MR WEICKHARDT: But the very recycling facilities also use resources.

MR LAWSON: Mm'hm.

MR WEICKHARDT: Let's suggest that all resources are finite. They've all got some price. The question is, are the resources that are being deployed in the recycling area actually inefficiently being deployed there because somebody has put the wrong value, hypothetically, on resource depletion of something that's being recycled? I mean, we normally rely upon trying to either let the market put values on things or where markets fail, to try to actually assess those things transparently, accurately and debate them so that we've got a fairly clear consensus on what those values might be. The problem in this debate is that people pluck very disparate figures out of the air, in some cases without a lot of transparency, and quote them as being a justification for some particular policy, depending on which side of the fence they sit.

MR LAWSON: Yes.

MR WEICKHARDT: I guess what we are trying to do is to get to the bottom of whether or not these numbers have some justification for the policy that is being recommended.

MR LAWSON: That's why one of our points is that we introduce a range of mechanisms to overcome market failures based on improved mechanisms for valuing those eco services. At the moment the focus is on waste policy that says let's divert X amount from landfill. Why? Why is that being done? We believe that when you properly value the eco services being delivered by avoiding resource depletion, by avoiding greenhouse gas emissions, over time you will - well, even immediately, once the policy settles, you will arrive at a rational basis for the amount of recycling that is done, whereas at the moment landfill levies that are focused on just the mass

of material going into landfill are going to assume the same eco impact of disposing of a tonne of inert waste as disposing of a tonne of plutonium.

MR WEICKHARDT: We are on heated agreement on that topic.

MR LAWSON: Right, okay. The issue then is how big you draw the life cycle system boundary. Do you just draw it post-disposal, which is what landfill advocates tend to and their great-great-grandchildren will curse their memory, because they will have ignored all the impacts of the resources that they wasted distributing at miserably low percentages into landfill when lots of those resources could have been recovered extremely cheaply. Things like steel; you just put a magnet over a conveyor belt and you'll recover steel. Aluminium; you just put an anti-current device on the end of a conveyor belt. Why should those things be directed into landfills? There's no excuse for polluting - these massive dispersed masses of resources around the globe to rot and lose the future.

MR WEICKHARDT: Of course the problem is that in trying to fix one problem, policies often create another. Our last participant pointed out that, I guess, well-meaning policy setters in moving up the landfill levy in New South Wales actually caused a situation perhaps to arise where cars in rural New South Wales will be put to landfill rather than actually recycled. The problem is that every one reaction that's taken has some other alternate action.

When I was a long time ago in the plastics industry, there was a great push to have all the plastics that went into whitegoods and brown goods made flame retardant for well-meaning policy reasons. Today I'm being told that that was a terrible decision because it has inhibited the recycling of those plastics and it has inserted toxic materials into landfill.

MR LAWSON: Yes.

MR WEICKHARDT: I guess what we're trying to get to the bottom of is to avoid making some of these mistakes where we pull one lever because it looks good at the time, but creates some perverse outcome further down the track.

MR LAWSON: Yes. ACOR recognises the value of what the New South Wales government has done in putting a significant landfill levy on. It has been of significant value to many of our members. Some members such as recyclers of cars, for example, have had some collateral impact on them that justifies attention. With the shredder flock from those cars, as well, there needs to be an encouragement in a differentiated levy so that if you produce inert shredder flock rather than high metals content shredder flock, you get a benefit for that service delivered. That's not to criticise the New South Wales government for having the desire to drive a high

resource recovery approach. It's just to say, "We've got to develop better ways of measuring those things."

MR WEICKHARDT: On page 7 of your submission you say:

The waste hierarchy approach to policy is ineffective and should be replaced by a net benefits approach.

MR LAWSON: Yes.

MR WEICKHARDT: Where have you seen the waste hierarchy approach actually produce an unsatisfactory result?

MR LAWSON: Well, you've just touched on one that has - in trying to avoid landfill disposal impacts by levies you might make some things which are recyclable above it in the hierarchy, less cost-effective. As a matter of principle, I suppose the waste hierarchy is probably not as effective as it could be in valuing the waste avoidance impacts that come through integrated waste management. If you design products, for example, that are much more recyclable and based on recyclable components, the levy tends to focus only on the recycling and doesn't reward the better eco design, if you like.

MR WEICKHARDT: You say on page 6:

When environmental externalities are taken into account, any form of disposal is a sign of inefficiency.

MR LAWSON: Yes.

MR WEICKHARDT: I'm not sure whether I understand that that's consistent with your net benefits approach. Surely in some instance the costs associated with avoiding landfill just aren't worth - they're not greater than the benefits. You've got one can of aluminium in Woomera. Is sending a truck to pick that one can up and recycle it actually justified?

MR LAWSON: We're not talking in absolute terms there. We're talking in relative terms, I suppose. We acknowledge, as I said before, that there's a need for continuing improvement in resource recovery efficiency. There may be an economic reason for that can not being recovered out the back of Woomera. The principle we're stating there is the very fact that you waste stuff shows that the system is not efficient. Maybe the can didn't need to exist in the first place. Why have the resources tied up in that? I don't know. As a matter of principle, the very fact that you have wastage is inefficient by definition virtually.

MR WEICKHARDT: We probably could all agree that humans consume resources and therefore are wasteful, but I think your solution probably doesn't include mass genocide.

MR LAWSON: No, but if you also have a look at the graph we've indicated in terms of increasing cost with increasing recovery, we've suggested there are points you reach where you don't go looking for the last can on there.

MR WEICKHARDT: Okay.

MR LAWSON: But the point we're making is that we're nowhere near that point.

MR WEICKHARDT: No. If you accept the fact there is a point, I don't want to pursue that.

MR LAWSON: Yes.

MR WEICKHARDT: It's just that using words like "any form of disposal is a sign of inefficiency", I think suggests that you take these things to ridiculous levels. I think that's a risky sort of mantra.

MR LAWSON: We didn't intend to make that point.

MR WEICKHARDT: Okay.

MR LAWSON: As I say, embedded in our national strategy recommendation is the opposite of that point.

MR WEICKHARDT: Right, okay. You also argue that recycling should be subsidised in recognition of the eco service benefits that recycling provides, and that those eco services also reduce pollution and improve resource conservation. I guess the question is why are the recycling subsidies a better option than using pollution policy and resources policy to directly address those sort of issues?

MR LAWSON: I'm not sure if we've actually used the word "subsidy" in there. We're talking about payments for eco-system services and so we're saying that you pick the level of recycling that's affordable, your waste strategy becomes replaced with a resource recovery strategy and you work out how much resource recovery you can afford.

MR WEICKHARDT: Right.

MR LAWSON: So you're not subsidising resource recovery. You're creating a market for the recovery of resources. If you like you're creating a market for avoided resource depletion that currently doesn't exist.

MR WEICKHARDT: But who is the payment for these eco-system services coming from and to?

MR LAWSON: We haven't recommended who should pay. At the moment all the payment for the proxy for those eco-system services is in the waste disposer, in waste levies. We referenced a number of different approaches that could be adopted; for example, in the UK packaging recovery notes system there's an agreement about how much of the burden of the product stewardship or the material stewardship should rest with the packager, the brand owner, the final end user. Then there's a payment along the way in proportion to that. So we're not trying to solve the problem with this. We're saying there's a need for a development of markets for these eco-system services starting with the economist's point of getting the price right for the services of nature.

MR WEICKHARDT: But I think the point I'm trying to make is that getting the price right - if you're trying to address resource depletion surely it would be better to get the price of the resource right than to try to apply some policy at the end of the waste recovery process or the recycling process?

MR LAWSON: Well, maybe or maybe not. Who pays for that service delivery in resource depletion points? I don't know.

MR WEICKHARDT: Well, if the virgin resource is priced correctly then the recovery process actually should be economic in its own right, surely?

MR LAWSON: Then you're saying that it's all right to mine all the virgin resources that are in nature at the moment and direct them, and spread them out, at rates that they're not recoverable leaving future generations without access to material that you know to be recoverable.

MR WEICKHARDT: I didn't use those words. I said if you price the resource at a level that you're recommending - I'm following your recommendation from the Economist - I'm not sure who is going to price it.

MR LAWSON: No, neither am I.

MR WEICKHARDT: But if it is priced correctly, surely that would send a signal to the user of the resource that, goodness gracious, this is scarce and you'd better use less of it; and to the recycler, goodness gracious, this is a very valuable material and

you should recover more of it.

MR LAWSON: Yes, well, that's what you're saying to the recycler: you can get an additional service fee for recovering this material that is scarce and getting scarcer, yes. So yes, if you're saying that the extractor of the virgin resource should also be paying a fee for the depletion of that resource that he's causing when he extracts it, we would agree with that.

MR WEICKHARDT: If that's occurring then that would seem to be the more logical place to tackle it.

MR LAWSON: Yes, but if you're not careful you put all the burden for the post-production of that resource on the extractor of it when they don't have any control of how recyclable - the chip packet maker makes his chips that use the aluminium that was extracted from the hole in the ground. So you've got to be able to find a way ultimately - not tomorrow but over time as the systems for pricing these services of nature - you've got to find a way of everybody being accountable for the use of these resources along the value chain.

MR WEICKHARDT: I think if you consume something that's valuable in its own right - if you have a gold ring it's highly likely that if you went to a jeweller and said, "I've finished with this gold ring," that something would happen to it other than being thrown in the trash can.

MR LAWSON: Yes. That's right.

MR WEICKHARDT: So the price there actually sends a signal to somebody to use it carefully and to recover it.

MR LAWSON: Yes. At the stage where all our metal resources are worth the price of gold then we're in trouble for forging steel to drive cars, I think.

MR WEICKHARDT: Perhaps. You say elsewhere that planning permission is a serious regulatory barrier preventing greater resource recovery. I mean, some of the planning restrictions presumably respond to valid community concerns regarding noise and smell and litter and things of that sort?

MR LAWSON: Yes.

MR WEICKHARDT: How do you suggest tackling these issues? A lot of people have raised this. We had one of the groups, a local council, here making the point that they thought local councils ought to be still responsible for waste but when it came to planning, well, that the state government's problem. I think I'm being a bit

unfair to them.

MR LAWSON: I know the point, yes.

MR WEICKHARDT: They say, well, nobody wants these products in our backyard. The government ought to be involved in planning the infrastructure here better. How do you suggest this issue is tackled?

MR LAWSON: We've referenced a paper from the Institute of Civil Engineers in the UK that advocates a very similar position to ours; that we need to shift - it's the case for resource management strategy. They're saying that what is required in the UK is a national-scale approach that's as big as the national grid for electricity development was in the 50s, that's as big as the motorway development was in the next few decades, that focuses on the ability of the nation to properly handle its material resources.

Now, we think that at least at the state level there needs to be a resource recovery strategy that's able to identify the affordable level of resource recovery that's desired and that needs to then be translated for cities the size of Sydney especially into acceptable-scale facilities for recovering resources. They might be different in each case. They'll depend on local communities being willing to accept those. They'll require that you have adequate buffers for noise and perhaps even odours, although those can be controlled but that is city-wide rational for those - resource recovery. It will be as big as motorway programs, as big as national grids, but it will stop the current disjointed effects that are just as crazy as you see in the 50s with 50-megahertz electricity supplies in one place and 100-megahertz supplies in another.

Can I say in Melbourne the local government seems to have recognised that in advocating a metro Melbourne waste management group that would get the scale required to deliver the sort of infrastructure that's required for the state target achievement. You also asked before about the cost benefits; the cost of delivering the significant resource recovery outcomes that ACOR is advocating. I think you'll find in the Nolan-ITU report we had done for rewarding recycling in New South Wales that it showed you need to only recover about 20 per cent of the eco-service benefit delivered in order to fund the recycling. I think it was something like \$120 million per annum in New South Wales to meet the state 2014 targets of 66 per cent MSW to a municipal solid waste diversion of 63 per cent commercial industrial waste diversion. The impacts at the household level are just a few dollars per week. They're not significant financially.

MR WEICKHARDT: Yes, well, I must admit we're having some difficulty really trying to understand some of the assumptions that underlie some of those

calculations and if you can help us do that, that would be most helpful, because some of the numbers cited in that work, to us look very strange compared to other assessments that have been made and we don't really understand all the assumptions that are made behind that, so if you can help us unravel some of that, it would be very helpful.

MR LAWSON: The company I work for, GRL - the parent company GRD has made a separate submission and we got from you just yesterday a detailed list of questions that we'll refer to Hyder Consulting - which now Nolan-ITU is - for assessment. But the difference between the Nolan-ITU Ecodollar Impact Assessment and conventional assessments of landfill externalities is about where you'd draw the line for the system boundary. Do you draw the line at the point of disposal, or do you draw it over the whole system? Of course, ACOR is saying we shouldn't be just having a waste management focus, we need to be taking a total system, a resource management focus. So we will see that Nolan-ITU does some explanation of those figures.

MR WEICKHARDT: That would be most helpful to us, because it's very important in terms of some of these policy implications.

MR LAWSON: But, again, we're not saying that is the only way to view the benefits of resource recovery; we're saying that was the one we could find as a way of identifying life cycle assessment impact. The very minimum that should, I think, come out of the sort of work you're doing in here - when state governments and federal governments pick up your assessment of the industry - is that some rational numbers need to be developed for this. It's pretty clear to everybody, I think.

MR WEICKHARDT: We would hope that is an outcome.

MR LAWSON: We hope so, too.

MR WEICKHARDT: But we need as much help as we can to try to get to that point.

MR LAWSON: Yes.

MR WEICKHARDT: You say on page 13 that ACOR has done some work on the development of standards for some recyclable materials. I'm interested in whether you've found, in practice, those standards have worked effectively, and what needs to be done to extend standards across other material types, and who should do this work. We've heard quite a few stories of people who have made well-meaning attempts to recycle products, only to find that some of the government authorities that encourage recycling have rejected the recycled material as not meeting some

specification that cites the need for virgin materials, or something else.

MR LAWSON: Maybe I should give some of my experience as a Global Renewables employee, rather than ACOR. But from an ACOR perspective, standards perspective, our company was formed, and designed the plant at Eastern Creek before it was a member of ACOR, but we needed standards to be able to write contracts for products before the plant was completed. It's really important to be able to finance plants properly, to be able to demonstrate markets for the products. We found the ACOR standards could be the basis for the contracts that we had written for various products like paper and plastics and metals. They are still used, even though they have not been updated for a couple of years now.

ACOR is actually seeking funds to continue the development of those, but there are a number of areas where the industry - wider than ACOR - would benefit; for example, for renewable fuels made from waste inputs. There are guidelines in New South Wales - there are very thorough New South Wales guidelines but I'm not aware that any supplier has actually delivered a fuel based on those guidelines. They tend to be guidelines rather than specifications, so that an objective specification for quality and performance is really important for those. As the regulators get more comfortable with individual products of unique specification, it makes it easier to get the next product approved, so I think that's a valuable thing that could be done.

MR WEICKHARDT: Yes. Certainly examples have been cited to us in simple areas, or apparently simple areas like construction and demolition recycling, where aggregate that has been made from recycled concrete has been rejected by some authorities on the basis that it is not virgin material, and yet all tests suggest that it meets the performance standard. Now, that seems a pretty bizarre thing to have encouraged that recycling and then reject the material for a road base or some use in aggregate.

MR LAWSON: Yes. Some of our members produce recycled aggregates from source-separated and mixed materials, and have significant markets based on specifications they have helped developed. Other materials like recycled organics from our own facility are made to standards like the Australian standard for composts, mulches and soil conditioners. Generally people don't write specifications for particular products based on those standards, even in recycled organics. So there is an understanding in the industry that both in source-separated and mixed waste organics processes, that it's worthwhile continuing to develop those material standards to facilitate description of the product that's actually going to be delivered to the end user.

MR WEICKHARDT: In that area we've had a number of people put to us that either the regulations in regard to metals or pathogens - both of which seem

reasonable things to have in specifications - are causing a problem; or, alternatively, that contamination by plastics or glass is causing a problem. But whatever - whether it's the market has been saturated - we've been told that there are pretty large stockpiles of composts in most capital cities, looking for a home.

MR LAWSON: There are large stockpiles. On a site like our own at Eastern Creek, we can't stockpile more than a few days' worth of production, so it has to move. We don't have problems moving the material. Yesterday we sent four B-double loads of product out. Australia is a big place and there are lots of markets for recycled organic products.

We've just done a trial on agricultural use of our product which showed a significant value above what you can sell those products for. At the moment we expect our markets to continue to increase for those, but it's a lot easier to afford regional market penetration for a mixed waste project like ours, than it is for a source-separated compost facility, because they are getting lower gate rates. The councils in effect are paying for the sort of equipment that is required for intensive resource recovery, buying the eco service themselves by buying services like ours. The source-separated compost is, I think, when they - have they actually presented to you yet, or are they doing that tomorrow?

MR WEICKHARDT: A number have.

MR LAWSON: Right. They will certainly indicate that they are not getting paid for any eco service delivered in making their product - except, I think there is one composter who is getting carbon credits, for example, for his product - but carbon credits in Australia is a very tight market compared to Europe. If there was a similar market for carbon credits it would probably overcome most of the problems that are in current stockpiles. Stockpile or not, there has been a significant growth in recycled organics from source-separated collections over probably the last 10 years, and they continue to find markets, but it's a hard job. If they were rewarded for the eco service delivered, they would be distributing those products over a bigger area, doing good for agricultural soils, which are massively depleted of organics.

MR WEICKHARDT: All right. Thank you very much indeed, John. I appreciate your submission and your presentation. We will adjourn briefly and then we finally have the Zero Waste Action Group Sustainability Club.

MR WEICKHARDT: Our next participant is Prof Don White. I think you're here representing the Zero Waste Action Group and Sustainability Club but perhaps you'd clarify that for us?

PROF WHITE: I'll explain that.

MR WEICKHARDT: Thank you.

PROF WHITE: If you'd go onto the next one, please, it clarifies just who I am. One tends to wear a number of hats in this business. I happen to be the chair of the Nature Conservation Council of New South Wales as well, which is a group that's had a big involvement in waste in this state for many years. I'm also involved with the Environmental Trust of New South Wales on its waste committee, along with others here. But the Zero Waste Action Group is a loosely affiliated group. The Nature Conservation Council used to have a zero waste network but it changed over the years and so it's now independent. Apart from that I now these days, after sort of semi-retirement, have become involved with the University of Sydney where I'm a professor of engineering and I'm involved there with their waste avoidance committee. So that's my sort of credentials to be able to talk about this topic.

MR WEICKHARDT: Thank you.

PROF WHITE: I really wanted to cover the reason why we're into this subject. I appreciate that you've written a number of questions but why we're concerned is because our ecological footprint on many measures is well over sustainable levels. I won't bore you with statistics - and you can check them yourselves - but largely it's fairly unquestionable that Australia requires 1.8 hectares per capita of ecological footprint. Its citizens are consuming some two to four times their fair share of resources. So we're among the top five consuming nations in the world for waste. I think you appreciate that.

The ecological problems that come from this are related to lifestyle choices, so it's necessary to build into a sustainable society their ecological awareness into their social and their economic decisions. On top of that we've got climate change. What's that got to do with this particular inquiry, you may say? But there are quite a few links. Again, I won't labour the point, but how we deal with climate change is a good question. It's worthwhile noting that in the case of things like CFCs industry was very happy to produce these particular items and it was a case where ignorance was not bliss. It was found that the ozone layer was being rapidly destroyed by CFCs - chlorofluorohydrocarbons - and once that responsibility was recognised the Montreal Protocol came into place and industry found other ways of performing the same actions. So we can give strong signals to industry about which direction it should go if we identify what the issues are.

Another related issue is that Australia basically takes its raw materials and sells them. We do need an income stream from our natural resources. So for things like, for example, copper we have a tendency to take that copper, turn it into electric wire and when a building is ripped down put that copper back in landfill rather than recovering it. There are a lot of opportunities for adding value to our natural resources by a huge increase in recycling components.

There's also the intergenerational equity question - that we should not be leaving a mess for our own children, as I've paraphrased it there. But we really need to properly cost the present value of resources. We have a terrible tendency to dig stuff out of the ground and value things on an MPV basis, but that takes no account of the scarcity value that therefore has been built into these commodities as we deplete the resources in the ground. The same ultimately applies to things like uranium where we could well dig what is a finite quantity of that material out of the ground and find that we run out in a relatively short few score years. So this whole question of intergenerational equity and not leaving a mess for our children goes across this whole waste issue.

So there's our material consumption. Those figures are taken from the State of the Environment Report 2001 so they're not particularly current but I have no reason to believe that we've moved significantly off that. We consume 180 tonnes per capita of material and we generate in the domestic waste stream 620 per capita per year. Now, these figures are somewhat rubbery because the way that we collect figures - they're not particularly disaggregate. That's a question that you go to in the brief. I don't propose to get into the detail on that, but they give directional indication of the sort of numbers that we're talking about. We have a huge landfill component in all of that in which construction and demolition waste accounts for quite a large percentage; about 40 per cent across the whole nation.

We contend that we should be moving to zero waste through zero waste generation and therefore zero waste disposal. The NCC has a policy which you've got there, Phil, at the back, which is a fully laid-out document. I'll just take you through the main points now. It basically aims to reduce the total consumption of materials and energy resources so that we can move towards a waste-free society in an integrated way as part of ecological sustainability. To do that we need to maximise our self-sufficiency at the local level, promote greater community involvement in decision-making and community awareness and knowledge all round. So education is a key part of this.

These are platitudes, I suppose, that we should encourage more environmentally and socially beneficial resource use, so the question is how you do that. We should ensure that the responsibility for waste is ultimately borne by those

people who produce that waste. What tends to happen at the moment is the drink manufacturers for example have a tendency to produce drink canisters, sell them to the public and then the public really finish with the responsibility for disposing of them themselves. Some of that responsibility falls back to municipal councils but it's an unclear line of responsibility.

So there are plenty of opportunities for green chemistry and green engineering generally and this would produce a greater level of employment probably in line with increased product reuse. The example you use in your notes about newsprint and whether that's a good example actually partly touches on that. You're talking about resource use versus increased manufacturing. There are opportunities there for a trade-off. We should avoid the pollution, waste of resources and the impacts generally caused by the disposal of waste, largely in landfill. Our policy calls for - that we cease the generation and disposal of all types of hazardous waste. I won't dwell on that since really it's not in your terms of reference. Avoid the need to establish new or expanding - - -

MR WEICKHARDT: Just to clarify that point out of interest though, given the fact that medical waste is classified as hazardous waste, are you saying we should stop doing that, too?

PROF WHITE: No. But chemical waste and the type of hexachlorobenzene that we've both been responsible for producing in the past paradoxically and now there's an amazing problem getting rid of it, that sort of thing we shouldn't do again. Medical waste is a different category entirely. I didn't mean to lump those two together.

Share an integrated and comprehensive approach to waste elimination: that sort of goes without saying. Provide equity - that's the social equity thing I touched on earlier - and promote a cautionary approach to the adoption of new technology. That doesn't mean doing nothing because of using the precautionary approach. But it means carefully evaluating the consequences and using a precautionary approach, possibly with a capital P and capital A there, in a sensible and well thought out way.

We have a waste crisis. We used to call ourselves a waste crisis group years ago. The word "crisis" evokes different emotions in different people, but there is a waste problem of enormous magnitude, and it's partly driven by the sort of consumption mentality that we fall into when people are in this very throw-away society - they get a new phone and they throw the old one away without any real consequence of how it's going to be handled. So what we need is clean production and waste-free consumption. Easy to say - and I guess that's the challenge for groups like your own to work out how that is going to come about.

We need to identify the legislative framework. We haven't gone into that in too much detail, but the important point we would make is that avoidance is the top of the triangle. Avoidance is the top of the triangle. The next slide makes the point, and that's a very difficult thing to be measuring. You can't easily measure what you haven't got. A lot of the statistics are all about reuse of material and how materials are put back into the material stream. It's actually extremely difficult to measure if you avoid the need for it in the first place. Therefore you need to be measuring things like consumption of materials per capita and those sort of quantum that allow you to get a feel for avoidance because, by its nature, it's hard to measure what you haven't got.

Then you work down the conventional hierarchy of reuse, recycling and so on, and disposal is very much at the bottom of that triangle. We are advocating fiscal measures to minimise waste in general, setting most elimination targets back by legislation, which is I guess one of your roles, I hope - no?

MR WEICKHARDT: No, we are recommending policy to those who decide what to legislate.

PROF WHITE: Yes, because this is federal and it's largely - - -

MR WEICKHARDT: We are certainly not into legislation ourselves.

PROF WHITE: No, okay. Fair point. Incentives for source reduction, source separation and product longevity is really vital to change the way we think and change the ground rules for industry and also to make sure that all players in industry are operating from a level playing field, because you do find the leaders and the followers here and it's necessary to encourage the followers to keep up with the standards of the leaders.

There was one on the previous slide about establishing municipal scale composting facilities, which is probably slightly outdated with what certainly we have in this state, and in many places around the world - is energy to waste, which is a mixed blessing because it does tend to pull through feedstock and require feedstock to keep the unit operating, but the concept itself is a solid one - so extended producer responsibility, have systems that put financial fiscal liability back where it should be. You are all familiar with Interface carpets, I suppose, and the sort of good examples that exist there of them changing from a product-driven mentality to a service-driven mentality. Yes; no?

MR WEICKHARDT: Sorry - - -

PROF WHITE: Interface carpets. Instead of selling a floor covering - which gets

ripped up when it gets damaged and sent to landfill - they sell floor covering and they sell carpet tiles, and you rent the floor covering from them. They are responsible for the floor covering, and at the end of its life they take it back, they reprocess it. It's the same with copiers. Many of the copying machine companies - and Fuji Xerox is one of them - you can't buy a photocopier; you rent it. When something goes wrong with it, they take the spare part away and recondition it, and give you a new one. So you have a whole system that allows a proper recovery of value in products.

A particular issue is legislation to allow point-of-sale return of beverage and other products, even pharmaceutical - shampoos and things like that. A lot of packaging gets out into landfill and is unproductively used and it loses its intrinsic value. That means having a life cycle approach to the provision of products and services, looking at the whole concept - again, you make that point in your example about newsprint in the briefing notes - and to seek to ensure that the lowest impact product alternatives have the lowest in prices by correctly costing the internals, and seek to internalise the environmental impact costs. That means putting a proper value on things like the climate and carbon. Do we need a carbon tax? Do we have carbon trading? But we need to value carbon in some way so that we give the proper signals; encourage greater level of product reuse and material recycling, provide the public with education and get a greater level of responsibility from consumers through all sorts of initiatives; and promote a waste disposal policy that actively discourages waste disposal and hypothecates the revenue to help eliminate waste. By that I mean the sort of thing that is happening in this state just recently, where there is a waste levy. The funds raised from that waste levy go to educate the public and to provide schemes to allow leaders to introduce new practices.

One particular question you asked that I think deserved a response from this group is: how effective has the National Packaging Covenant been in both its forms? This group would argue it's pretty poor. Have you had the Boomerang Alliance through here yet?

MR WEICKHARDT: No.

PROF WHITE: I think you have that tomorrow - Dave West, so I won't steal too much of his thunder. He will talk to this. We have a review prepared for the Nature Conservation Council in 2004 that we commissioned from the Institute for Sustainable Futures, which is down the road in the University of Technology here. That covers our thoughts on the National Packaging Covenant in great detail. Essentially we would maintain that the bar was not set anything like high enough and it hasn't been set anything like high enough in the second round.

The other particular question you asked in your briefing notes was about

advantages and disadvantages of container deposit legislation. This is a fraught subject. We argue that there is considerable opportunity for this. It would give many of the incentives that the beverage industry currently resists and, again, we'd point you to the independent review on container deposit legislation in New South Wales that was done on that subject in March 2002, much of which is still current.

MR WEICKHARDT: What did that report conclude?

PROF WHITE: It concludes, in summary, that it would be a good thing and it would produce the right outcomes. It's a pretty voluminous report and since then, of course, there's been debate either way, but we maintain that that is definitely the way to go.

MR WEICKHARDT: There are clearly mixed views on that subject which have been expressed to this inquiry.

PROF WHITE: There clearly are. I acknowledge that and that's partly why I put that slide up, to make sure that the alternate view was heard.

MR WEICKHARDT: Can you suggest why it is that you think some of the reasons given for not doing this are invalid or why you think your reasons for doing it haven't been weighted strongly enough?

PROF WHITE: I think the beverage industry, along with the manufacturers, is used to doing things in a conventional way. It's pretty resistant to change. What essentially happens is that they sell their product and they pass the responsibility for the disposal of containers on to the consumers, and partly on to local councils. Only partly on to local councils because that doesn't cope with any of the beverage containers that finish up in public places.

By and large many members of the public have got educated to the point where they think that if they put their beverage containers out at night in the recycling bin, they've done their bit for the environment; but that's really a very old-fashioned or antiquated way of doing it. It's really not adding a lot of value and it's only capturing a small portion of the stream. One of the particular problems is contamination in those streams. If you mix any of the different bottle types, it's very easy to contaminate a whole batch by just a bottle or two being out. The quality of those streams is a major issue, so there are a lot of issues surrounding that that the beverage industry is quite resistant to.

If you look at the other side of the coin and say, "Who has got this operating and where does it work?" South Australia is always held up as a case in point where it works extremely well and it's quite well proven. Parts of China equally have this

working extremely well. In parts of China you pay about half the value of the beverage for a container and that produces an enormous incentive on the consumer to get that container back to its point of sale, then they just get looped back in the loop. Their figures for recovery of materials are extraordinarily high.

MR WEICKHARDT: I haven't heard anyone argue that the recovery of the materials on which the deposit is paid are not high or not elevated by that approach. The point that has been put to us by several people, however, is that by taking those products out of the recycling scheme you make the collection of other recyclables much less economically viable and you get lower yields on those recyclables.

PROF WHITE: That's taking the status quo and working in a perturbation from that, but that hasn't happened in South Australia.

MR WEICKHARDT: We have asked for data on that, because the South Australians say it hasn't happened and other people say it has.

PROF WHITE: Read our report. The data is all in that review that's there.

MR WEICKHARDT: In 2002? It's interesting, because the South Australians claim that really there's no good data in this area until 2005 when they started collecting it.

PROF WHITE: Well, it's a long time since I read that report, I would have to say, but I'm pretty certain there's some data in that. I'm willing to be corrected if I'm wrong. You know, I haven't read it for a number of years, but I'm pretty certain that there's some pretty reasonable data in there and what follows it. Yes, I understand the debate and - you might ask that question of Dave West tomorrow. Are you seeing Dave West tomorrow?

MR: No, he's not scheduled tomorrow.

PROF WHITE: They just made a written submission, the Boomerang - - -

MR: Yes.

PROF WHITE: Okay. I guess what I've been saying is we should really be trying to focus on a sustainable economy, closer loops, and this consumption model that we tend to go with which tends to drive our economy, is at the root of many of these consumption evils. While you can't throw it out completely, we certainly should be severely questioning this consumption-led economy concept. I think the next slide terminates it. There we are, "Achieve zero waste in 10 years." We reckon it's possible.

MR WEICKHARDT: What do you mean by zero waste?

PROF WHITE: Zero landfill really in that case. Total reuse of materials, total internal recycling. No landfill I suppose is the definition in those terms. As I've been saying, adding value; not allowing products to exit the waste stream or exit the material stream, but keeping their value in the stream.

MR WEICKHARDT: So, to use an example somebody cited this afternoon, if in 15 years' time somebody takes some asbestos-containing material out of a building, you want them not to landfill that, do you?

PROF WHITE: No, that's the hypothecation of existing waste. There has got to be some transition to that point where stuff that's in the system works out. I'm talking about no generation of new material that will cause waste of that nature. That's a fair point. For example, tyres, where they have a huge material value in the springiness. We spend a lot of time getting the properties for rubber into the tyres. Keeping that value, so you may not be able to use them as tyres, but you can use them in some other way and keep the value that has been given to those components in the springiness - keeping that value up high, rather than simply burning it as energy or disposing of it to landfill, which is what tends to happen at the moment. Well, it's changing rapidly with tyres.

MR WEICKHARDT: Yes, it appears some good work has been done in the area of tyres, which may well address the issues you've talked about.

PROF WHITE: Part of the reason for that is because it's a waste of concern in New South Wales and it's a waste of concern in many areas, so the legislative changes are focused on that and - - -

MR WEICKHARDT: It's less problematic, too, because not only is it a waste of concern, but it's also a waste that has some significant value. It perhaps is an easier area to tackle.

PROF WHITE: Yes, and its destination is largely known. Generally speaking, you change your tyres at a tyre repairer and so it's easy to track the product, and get it back, as opposed to drink containers which we were discussing earlier that are diffuse across the whole community.

MR WEICKHARDT: In your principles of trying to send sort of price signals to people to think carefully about how they use resources and how they dispose of them, I mean, ultimately it's the consumer that pays, regardless of who they are; whether they're a ratepayer or whether they pay a premium on a product or what they

do. The question is, where does that price signal best get applied to change behaviour in a beneficial way? There are some people who would suggest that applying a price signal at the waste disposal point is not the right place to apply a price signal.

PROF WHITE: No. That's really after the horse has bolted. You need to apply the price signal higher up the chain if you can. In the case of carbon, for example in carbon credits or some form of carbon trading, you value that commodity. I guess that's a subject which there's quite a bit of debate about, but the same occurs with other commodities that are going to become in short supply; properly valuing them at source, so that decisions are made about their use and you don't finish up having to put a landfill tax on. You would probably need to change the mindset, but ultimately you want to provide carrots rather than sticks.

MR WEICKHARDT: That was an issue that we talked to the last persons presenting here and the concept of properly costing the present value of resources you raised. How are you suggesting that these are properly priced?

PROF WHITE: I think I might leave that to you.

MR WEICKHARDT: Thank you.

PROF WHITE: That's a subject where there's a lot of debate, obviously, but we're just highlighting there is a need to do that.

MR WEICKHARDT: I think we all agree on the idea, but the person with the absolute omnipresence, wisdom to do that, we haven't yet found.

PROF WHITE: No. All right, well, I mean, we're prepared to take that on board; but you appreciate why I'm not giving a single answer possibly?

MR WEICKHARDT: Yes. Thank you very much indeed for your presentation and for your input to this inquiry.

PROF WHITE: You're welcome. Thanks, Phil.

MR WEICKHARDT: That finishes our scheduled proceedings. For the record, is there anyone else who wants to appear today before the commission? No? In that case, I adjourn these proceedings and we will resume tomorrow morning at 9 am. Thank you.

AT 4.49 PM THE INQUIRY WAS ADJOURNED UNTIL
WEDNESDAY, 1 MARCH 2006

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