INDEPENDENT PRICING AND REGULATORY TRIBUNAL

REVIEW OF PRICING ARRANGEMENTS FOR RECYCLED WATER AND SEWER MINING

Tribunal Members

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MR COX: Good morning, ladies and gentlemen. I would like to welcome you to this public hearing which is being conducted by the Independent Pricing & Regulatory Tribunal into pricing arrangements for recycled water and sewer mining for the metropolitan retail water agencies - Sydney Water, Hunter Water, Gosford Council and Wyong Council. The Tribunal is conducting this review under section 11 of the IPART Act.

Just to introduce ourselves, I am Jim Cox, Chief Executive Officer and full time Tribunal member of IPART. I am joined on this review by Cristina Cifuentes, who is on my right. Dr Michael Keating, the chair of the Tribunal, sends his apologies as unfortunately he is unable to attend today, but he is very interested in the topic and will participate in decision-making on this matter.

The Tribunal considers this to be a very important investigation. As is now well known, several of the agencies face a significant and potentially growing imbalance between the supply of, and the demand for, potable water. There are a number of factors placing pressures on our water supplies. Clearly the growth in the number of people moving into the metropolitan areas and drawing on the water supply is a factor. The current drought is another. In some cases, there are calls for more water to be released from environmental flows to improve river health.

In response to concerns about the long-term sustainability of water supplies in New South Wales, the State Government and water agencies are planning and implementing new ways to balance water demand and supply as populations grow. Our approach, one of the approaches, is to increase the use of recycled water to replace potable water for some purposes.

To date the Tribunal has only been involved in setting prices for recycled water services in the Rouse Hill Development Area in Sydney but, given the likely growth in recycling in coming years, the Tribunal believes it is important that consideration be given now to the pricing of recycled water provided by Sydney Water, Hunter Water, Gosford Council and Wyong Council, with a view to establishing robust, consistent pricing arrangements.

Increased private sector participation in the water

industry is likely to see an increase in sewer mining proposals. The Tribunal has previously set a zero charge for sewer mining in Sydney, but if there are avoided costs to water agencies as a result of sewer mining, this may result in inefficient investment. The Tribunal will consider determining pricing arrangements for sewer mining in the sewerage systems of the four water agencies if it finds that current arrangements are not efficient.

As part of this investigation the Tribunal released an issues paper in February of this year which outlined some of the matters the Tribunal considers important in this review, it's general approach to price setting, the matters it must take into account under the IPART Act and a draft timetable for the review. That issues paper also sets out key aspects of the review process.

In the issues paper the Tribunal called for submissions from the four water agencies, stakeholders and members of the public. The Tribunal is grateful for the efforts of those who have made submissions and some of these organisations will be presenting their views today. All the submissions received will be carefully considered by the Tribunal in developing its findings and recommendations and are available to the public on the Tribunal's website.

This hearing today is a very important part of the review process and it provides an opportunity for the Tribunal to hear in a public forum from the water businesses and other key stakeholders and to question the propositions put forward.

Before we commence proceedings today I would like to say a few words about the process for this hearing. You have available to you a timetable that indicates the order in which organisations will be presenting before the Tribunal. For each organisation appearing, a presentation time has been allocated and this will be followed by a short period for questions. I would ask presenters to stick to their allocated time. Following the presentations there will be a workshop session to further discuss some key matters, and that will take place this afternoon.

Assisting the Tribunal today are Tribunal secretariat members Colin Reid, the Director of Water and Richard Warner, who is the Program Manager for Metropolitan Water

Pricing, and Colin and Richard will be asking questions of presenters to facilitate the workshop. Also we have Kate Drinkwater, who will be assisting in the workshop this afternoon.

At the conclusion of the scheduled presentations I will make time available for members of the audience to express their views and opinions on the matters that are being put before us by the various presenters. There will also be time during this period for members of the audience to ask questions or provide comments.

We will commence today with the representatives of Sydney Water. I would ask presenters to state your names, organisations and positions for the record, and then make your presentation.

I should point out that David Evans has made many presentations to the Tribunal, all of which have been of great value, and we hope that this record will continue, if he would like to address on behalf of Sydney Water Corporation.

SYDNEY WATER CORPORATION

MR EVANS: Thank you, Chairman. We have been through a number of these issues and that is where I think we would like to start, to set what we are doing here in the context of the efforts that have been made by IPART and others to get pricing right over the last decade or so because I think we have to build off what has been done to launch into what is now a new era of greater water scarcity and other issues you mentioned.

I think an important place to start is that if you go back say 15 years, fresh water was virtually free to most users, and we all know that had a number of consequences and in particular an obvious consequence was that it made it very difficult to encourage recycling because why would people use recycled water if they could get fresh water for nothing. So there is obviously a recurring theme here that pricing really does matter.

What has happened in the last decade or more is that the price of fresh water has been quite radically realigned. It has gone from being virtually nought up to

around 80 cents, and then in the recent determination it has gone now to the point where it will rise from $1.20 to $1.40 over the next three years per kilolitre or per tonne. So clearly a situation has emerged where greater recycling is being encouraged relative to the past and that water price, we have always argued, has included in it that a key part of its justification has been to encourage things like recycling, the scarcity value of water, not to recover the cost of pipes and pumps but to drive an understanding amongst consumers that there is a scarcity value. I think we have to appreciate that that has happened and it now sets an important part of the context for how we price recycled water.

That leads to the next question, why does recycled water matter? It clearly does matter because it is becoming a significant part of the supply mix as we deal with the issues that Jim raised - population growth, potentially greater climate diversity, definitely drought and I think definitely uncertainty. Everyone around this table is dealing with enormous uncertainty. My friends from Gosford/Wyong have a very major storage which I think has struggled to get above 20 per cent for some years. The diversity factor of the Australian climate is really profound and so we have to manage that diversity.

At the same time we have to manage the opportunity that comes from technological change, improvements in membrane filtration techniques, a whole range of techniques have made recycling and other what I call factory-based production of water far more relatively cheap and more energy efficient than it was in the past and we could expect that trend to continue, so we have quite a dynamic environment - growth, technological change and uncertainty - and that has led to a clear consensus around Australia and internationally that water supply is not about periodically building a large dam and then ceasing transmission until you use up capacity, then coming back and thinking about it again in 30 years. It is about a continuous process of adapting to the technological change, the growth, the opportunities presented by that and the challenges of drought, et cetera, et cetera.

So there are well established principles now where people start off with what we used to call demand management, but that is a negative term, my marketing people tell me, so we have to call it water use efficiency

promotion, but it is the same thing, and it comes down to saying that you encourage people to be very careful in their use of water through a variety of means. Obviously pricing and education are important but positive incentives as well. I will not go into it all but Sydney Water has spent literally hundreds of millions of dollars in recent years and will over the next five years to do what we call water use efficiency initiatives. Some of that is than channeled through the Department of Energy and Utilities and has manifested itself in water saving funds where there is provision for subsidies for recycling schemes and the like, which is part of the scene we have to consider, but a lot of the rest of it comes directly from Sydney Water or other water utilities and it is applying subsidies, retrofitting houses to use more energy efficient showerheads, et cetera, where we have done 310,000 so far and we will be up to 500,000 in a few years. That has made significant differences. A range of other demand management measures will flow off the production line as we reality check them, work out their cost benefits, et cetera, but we recognise that is not the only answer.

You have to have intelligent recycling schemes and intelligent other supply augmentations, so there is a mixture of activities which sets the context for pricing recycled water and of course they all interrelate, the cost of the demand management or water efficiency schemes, the cost of your water augmentation schemes all influence the amount and extent of your recycling, potential subsidies you put in, et cetera.

Also clearly you need to price them all simultaneously so you get the right combination of cost recovery and incentives for consumers.

In the Sydney context, if you look at it over the next decade, as set out in the government's water strategy, we are looking to increase recycling from its present level to an increase of about five or six fold by 2015, and that is driven by a combination of bigger recycling schemes for existing industrial and other customers, and there are people around this table who have a particular interest in that, but it goes to areas like Blue Scope Steel in the Illawarra where there are large industrial customers who can take highly processed water at relevantly cheap cost.

There are other industrial users in Sydney where you

can do that, but the truth of Sydney's development as an economy is that we are becoming a Pacific rim service sector economy and the availability of smokestack industries that can readily take recycled water is not infinite, in fact it may over time decline, and so recycling must look beyond the traditional golf courses and heavy industry type solutions into utilising dual pipe networks, and I think it is often overlooked that the system of BASIX that the government has introduced in the last few years will make a profound change to that.

The BASIX system is in effect a planning instrument that says that if you are building a new house, it does not matter whether it is in a greenfields site or is a flat or a unit, it has to be 40 per cent more water and energy efficient than previously was the case and developers have to demonstrate that they are going to achieve that. Now, in some cases, in fact in many cases, particularly in greenfields developments, the most cost effective way to do that is dual pipe systems.

A second is to take recycled water as per Rouse Hill to the customer for use in toilet flushing, gardens, et cetera, et cetera. That is quite a tried and proven model and we are going to see a lot more of it. We will in fact see hundreds of thousands of properties over the next 20 years serviced that way, so that is quite a powerful institutional change which has to be taken into account of when considering the funding and pricing of recycling schemes.

I think the other thing I would like to say before I pass to Chris Guest to go to some of the more technical issues is that there is also industry structure change going on which means that the pricing for recycled water has to take account not only the incumbent utilities but the aspirations of entrants. The entrants might come in a variety of forms. They may be people who as per the expressions of interest we have seen for recycling in the Camellia area want to come in and offer recycling services. They may alternatively be people who take advantage of the access regime we are developing this year to set up a competing service for customers or they may be people who do what the English call inset appointments, that is, they become the supplier for a regional monopoly, a new development, whatever it may be, so there are three ways in which private sector interests would be relying on new

revenue streams from recycled water and I think therefore it is really important that we simultaneously consider recycled water pricing along with those structural changes.

Of course, we have the advantage that a number of those issues fall under the one roof of IPART. That is an advantage, perhaps unless you are IPART, because it does mean that you simultaneously solve many equations, but I think it is actually an excellent development because there is a real risk of disjunction if these different matters do not get solved simultaneously.

Specific issues that we need to just consider: there are some questions raised which I am sure we will talk about more this afternoon, but I think we need to remember two things with recycling schemes. They don't necessarily require subsidies. We shouldn't see them as poor relatives. With the right pricing of fresh water and the right horses for courses approach, recycling can and will on many occasions be something that can just work as a natural economic activity and I think it is really important to get that mainstreaming idea into our thinking.

There will be occasions where governments may choose to apply subsidies and in those situations we need to think through, like we always do, where does the money come from,
because if we take the money from somewhere else it raises the perennial question, from whom and why, and what does that mean to the provision of other services.

The other thing, of course, is not just revenue raising but getting the incentives structure right. You need a price that encourages people to use the recycled water efficiently and that needs to take account, we believe, of a number of what I call horses for courses issues.

We believe that recycled water can be approached differently from the historical approach where we set one price for all water and sewer services across the Sydney area, the so-called postage stamp pricing. There are a couple of reasons for that. First of all, we have a clean slate to work with. Secondly, we have a situation where the quality of recycled water can and will vary dramatically. We don't always have to assume it is a poor relation. There are occasions where certain industries want water to a higher quality than is provided through the

pipe network for reasons of removing of minerals and things like that for particular industrial processes and they may have an incentive to pay more for highly treated recycled water but the general expectation is people will pay less. How much less depends on the quality and the costs in the particular circumstances.

The quality of water you might need to apply for coal dust suppression, for example, or for certain industrial processes, may be significantly less than you want for a dual pipe system where you have to manage all that goes with that, so I think we need to accept the idea we have a diverse product with diverse costs and diverse locations with a diverse preparedness to pay, and that leads into the question of how do you structure pricing? Our view is we have to come up with a methodology to take all those things into account and which the Tribunal would in a sense sign off on. We would then have to apply that consistently, a little bit like the developer charge methodology, which the Tribunal specifies and we have to apply. It could be ordered, there could be provisions for disputes in the event that somebody felt it was not applied, but it would allow all this diversity to be dealt with.

I guess that is where I would like to end up, basically to be suggesting horses for courses pricing, taking account of cost recovery needs and the need to incentivise people to be efficient in their use and a methodology which is capable of replication of monitoring and something that will work for public and private sector service providers and will be robust over time as we have access regimes, et cetera.

I think that raises a number of issues which we will presumably talk about this afternoon but I thought it would be useful to set that scene; and Chris will take us through some of the technical matters that underlay some of those judgments that have to be made.

MR GUEST: As David said, my role in this is to take the somewhat more technical perspective, although David as a long-term expert in the industry has probably touched on those things already, so I will put an inexperienced perspective on the same things.

I am proposing to cover three topics and I think they are the key topics that IPART presented in its issues paper

and in the slides that were circulated. The first topic is just the very simple one, should recycled water prices be regulated at all. The second question is obviously, if they are to be regulated, in what way should they be regulated. And then the third is, having agreed on an approach to regulation, what are the issues that that approach is going to throw up and how do we deal with those problem issues.

I guess it is fair to say that in working through the topics in that sequence I am moving from the easiest to the hardest and I think by the time we get to the last one of looking at some of the problem issues in our preferred approach, I'm probably getting to identifying the problems rather than suggesting the solutions, but I'm optimistic and indeed confident that today's workshop might help us progress better the way in which we have to resolve some of those problem issues.

The first question is a simple one, should recycled water prices be regulated at all, and I think the answer is a very straightforward yes. Water and wastewater charges are now regulated. It would be very odd and difficult to find a rationale to not regulate recycled water prices. Having said that, in the short time I've been in this industry, somewhat less than 12 months, I have discovered that for every generalisation you make there is an entirely plausible exception, and there may well be some cases where there is a basis for allowing a bilateral kind of negotiation, if the project is a large one, or a small number of consumers, there may be a case for excluding that from the ambit of regulation. But I think for the area of greater interest in recycling, which I think is the extension of recycling to residential areas, there is no doubt there is a very strong case for those prices to be regulated.

So, if the price is to be regulated, what is the approach that ought to be taken? The IPART issues paper essentially identifies three options. The first is that IPART sets prices on a project-by-project basis. The second is that IPART sets a uniform price. The third is that IPART adopts a methodology which is then applied by the water agency on a project-by-project basis.

As David said, our view is that the most appropriate approach is to adopt the third one, a methodology that is

applied by the water agency on a project-by-project basis. Why do we say that? There are both negative and positive reasons for that preference. To look at the negative ones first, because as an economist by background it is easier to find the reasons why you shouldn't do something rather than why you should do something - I try not to have that intrude on my life but I suspect it does - I suppose the main negative reasons why you wouldn't have project-by-project price setting by IPART, the simplest option is that that would be an intensely resource consuming path for everyone concerned, for IPART, for the water agencies, for investors and for the community stakeholders, enormously complicated without it being clear that there is any particular benefit to it.

The other option that we think ought not to be progressed at this stage is uniform pricing. Why not? A couple of reasons for that, which as much as anything relate to the stage where we are at in the history of recycling. Recycling, as David said, is becoming a more and more prominent source of water but nonetheless for the foreseeable future is likely to remain as a smaller rather than a larger share of the water supply in urban areas. More than that, recycling projects are likely to be small, local, discrete and they do offer different grades of water which potentially match the preferences of consumers, and from our early experience the costs are going to vary significantly from project to project.

So in those circumstances, if for no other reason than the pragmatic one that we simply don't know enough about what a reasonable average cost is, it will be very difficult on that pragmatic ground to set a good uniform price. We just are at this stage in development of recycling I think not in a position to know what a sensible uniform price ought to be.

So that leaves us with the third option of the methodology approach which we think has the greatest attraction at this stage. It provides regulatory guidance, whilst at the same time allowing sufficient flexibility to reflect the circumstances of individual projects. It represents we think the option with the lowest compliance costs for all the relevant stakeholders, water agencies, investors and the community, and most importantly is sensitive to the needs of IPART. We think it presents IPART with the most straightforward proposition yet at the

same time it is auditable, there is capacity to ensure that the methodology is being applied correctly by a round of audit process of some kind. The preference is that we go for the methodology, but what will it be? This is where we start to turn to some of the more difficult issues.

The core proposition we believe as presented in our submission is that the methodology ought to be one that provides for the recovery of the costs of the project. The rationale for that is obviously the economic one that for the project to proceed it ought to be able to recover the costs of resources that the community incurs in providing that project. So what are those costs and are there any benefits that need to be taken account of in determining the net costs of the project to society?

We think that there are three key elements to the costs of a recycle project. The first and simplest element is the incremental direct costs that are incurred by the water agency in providing the project. It need not be a water agency; it can be a private investor. Those direct costs are operating and capital costs over the life of the project. Inevitably, there are going to be measurement problems in those sorts of things, but conceptually I think there is a straightforward proposition to say that you can identify a set of operating capital costs that are associated with the project.

The second element that we think ought to be taken account of in setting a recycling price is any costs that are avoided as a consequence of a recycled water project proceeding. It is plausible that in having a recycled water project you will be in a position to avoid certain augmentations of capacity or replacements of capacity in either your water or wastewater systems because of the fact that the growth of demand or the level of demand requiring the services of those facilities will be less than it otherwise would be. Recycling takes some of the heat out of the demand for your water and wastewater infrastructure and means that you may be able to delay certain expenditures that you would otherwise have to undertake.

The third element is that there may be, for some projects, external benefits attached to that project. Typically, you would expect that they would be environmental benefits. It may be, for instance, that the recycled water project means that you have a lower level of

discharges in your river system than you would otherwise have, and there are some benefits for that river system by way of environmental health, aesthetic value, recreational value - it would depend on the circumstances.

In our view there are three elements that go to the costs of a project. The first is the incremental costs of expenditures to build the thing; the second is a deduction - avoided costs; and the third is a further potential deduction and that is the one that accounts for any external benefits.

The harder ones are how you estimate avoided costs and external benefits. I will talk about external benefits first, because I think that is the easier of the two.

Value in external benefits is always contentious to a significant degree, because those benefits are typically not priced, so you have to impute a value to the benefits and in imputing a value you have to rely on proxies or estimation techniques that inevitably will involve some measure of estimating at a remove from what people really think.

Although those valuations are often contentious because there is a degree of subjectivity or indirectness about the way they are valued, nonetheless there is quite a substantial amount of literature around on how you can do it. It is well known that the valuation techniques come up with numbers that sometimes people don't accept, but the path that you go down in having those debates is a relatively well trodden one. Although there are problems in that area, I think that's not the hardest of the issues that need to be resolved in the methodology.

The hardest issue, I think, relates to the estimation of avoided costs. This is the one where we don't have all the answers, but we do, we think, have a good understanding of what the problems are, and certainly what the problems would be from a water agency's perspective. But also, in the spirit of the workshop, we've tried to think about what the problems would be for IPART as well.

Conceptually, the avoided costs are easy enough to understand. It is the notion that if you spend something on the recycled water project, you will avoid the need to spend money on something else. It will mean immediately a gain

to the water agency but more generally the community, because it will mean that the prices of the products for which the expenditure is being deferred will be lower than otherwise it would be.

The core practical problem though in providing for an avoided cost that can be deducted from the cost of a recycling project is that there is only funding available to deduct from a recycling project cost if the expenditure that is being deferred has already been provided for or funded in some way. That expenditure can only be provided for or funded in some way if there is relevant funding in a development servicing plan, or if there is an allowance for the funding of that program in the potable water price.

It may well be that a number of the projects that you can defer as a consequence of undertaking the recycled water project are things that are not yet funded through either a development servicing plan or the potable water prices. If that is the case, then allowing for a deduction from the recycled water charge for those avoided costs will have to be funded for in a way that is not provided for anywhere. So if the water agency were to make available the benefit of those avoided costs, it would do so in a way that incurred a loss, and clearly that is not a sustainable or particularly desirable economic position.

If avoided costs are to be provided for, and I think there is a very good case to say they should be, then the core practical issue is to find a way by which those relevant avoided costs can be funded and, presumably, that is through some mix of the way in which allowances are made for the development servicing plan and future potable water prices.

That allowance would presumably mean that water consumers and developers would in some way contribute to the costs of those recycling charges through an indirect mechanism, but how that would occur, I must say, we are not sure, but hopefully the collective intelligence of today might push us a bit further towards the right answer for that. We have the benefit, as David said, of all the relevant instruments that you would want to use to come to an answer being in the hands of the one regulator, so that you do at least have the position where the mix can be selected and implemented efficiently and simply.

The other topic I briefly wanted to turn to - I've probably gone a little over time --

MR COX: You have.

MR GUEST: Very quickly, on the structure of prices, we believe that essentially the structure of pricing ought to be that capital expenditures relating to recycled projects be recovered through developer charges and operating expenditures be recovered through volumetric charges. Having said that, we acknowledge that there may in some cases be an argument in favour of having a fixed charge; there may be cases where recycling consumption is limited or small - there might be small consumers only and in that case it might be the simplest thing to have a fixed charge and not a volumetric charge. There may be situations where you have a fixed charge. In general, we would think the split is between the developer charge and the volumetric charge.

Finally, on sewer mining, our view is that the broad approach to pricing access to sewer mining ought to be the same as what we are proposing for recycling, and that is that the cost to the sewer miner ought to be the net of the incremental costs of supply, which presumably are relatively modest, any the avoided costs are that the utility benefits from, and then, if there are any external benefits, then there is a case for those to be taken account of by way of some public subsidy.

MR COX: There is now the opportunity for questions.

MR WARNER: I think you are suggesting that at the current water prices, or what the water prices are going to be over the near term, you could see recycled water schemes fitting under that water price ceiling, a confirmation of that.

MR EVANS: I think this is going to be the big policy question in the next 20 years right throughout Australia. There will be some cases where they will fit very comfortably under that - and by that you are implying people would want to use the product and would want to do it just on normal commercial principles and that clearly can and will be the case, but like any form of production, because there is an infinite array of ways that you can provide recycled water, you will climb a cost curve where at some point you will cross over and that will not be the

case. That depends obviously on the costs of providing the product. It depends on the use, the preparedness to pay by the company or the individual, and it also depends on how far you have to transport the wastewater or the effluent to use it.

Very often in these debates we forget the fact that the water industry is substantially about transporting high volume/low value products. It is a transport industry. Therefore, cost of treatment is important, but cost of transport to deliver it is also very important, particularly if you have to lay supplementary water mains. Without going into all the detail, there are around Sydney about 20,000 kilometres of those mains already, and there is a comparable length of them in individual households. Anything that suggested replication of that stock of mains - no-one seriously suggests that - is costly.

If you have like a BlueScope Steel, a sewage treatment plant and literally over the fence a steel maker that needs large volumes of water, it is far more economic to build the recycling scheme, transfer the water over the fence. You don't need a new distribution system. The challenge of course is how many places have you got that and as you climb the cost curve you start to run into the problem of potentially it not being economic.

MR WARNER: Chris identified avoided costs as being a vexed issue, and I agree with him on that. If you had a private sector provider of recycled water which enabled you to avoid costs, is there a mechanism there for passing those avoided costs on to a third party, a third provider?

MR EVANS: We work through existing mechanisms and then think of potential ones. The existing mechanism that has to be done is through the water savings fund that has been established. You could have people coming along making their case that, if they apply their scheme, society is better off in a variety of ways and that can be a criteria potentially for payment of government subsidy. That is a way.

Another way would be to have any benefits thus identified built into access arrangements. The obvious one is sewer mining. If people wished to extract effluent from the sewerage system, either at a sewage treatment plant or at a point in the distribution system, to treat and then

on-sell, clearly you can establish a negative price for that based on those avoided costs. They would be two ways that would readily spring to mind.

Perhaps we might think of some others. I think they are two ways that would deal with most circumstances that might arise.

MR REID: A number of the submissions have indicated a preference for direct negotiation, that is, no price regulation where recycled water is supplied to large customers. In the event that there is some cross-subsidy there, how transparent will the outcomes of those negotiations be, if there is to be a cross-subsidy, and a possible shifting of costs on to the broader customer base?

MR EVANS: I suppose, in once sense, you have led us towards some of the difficulties with this. If you take the optimistic view that there are some cases where there is a very clear and simple transaction that is going to occur, then you can argue the need, as Chris said, not to have regulation - there is a very small customers and a well-established machinery for the setting of the price.

The difficulty is that those conditions are not always met and you end up in the vagaries, as you suggest, I think, of how to allocate costs and how to pay a subsidy. The concern we have always had with that sort of thing is that when you are essentially disbursing some form of public money here, for a utility to be making judgments in favour of party A over and above party B without some clear explanation of why and how, is, I suppose, the reason why we have places like IPART in the first place.

I think we have to have an open mind about the circumstances where you could just do it on a direct commercial arrangement. That would essentially be where it was a direct and simple commercial transaction. Once you get into the potential issue of subsidy or issues about how you allocate costs, and the two things mix up quite readily, that is why we believe a methodology is beneficial to both parties, because it allows people to understand the rules they are working in.

The methodology could set the context for allowing such discussions to occur, and thus reduce the transaction costs for both sides so that people can get on and actually

do the business and people can see the rules of the game.

MR GUEST: And consistency.

MR REID: In the event of sewer mining, the sewer mining plant and some of the associated pipes would be located on Sydney Water land. Who will own, maintain and pay for that plant and associated piping and what residual responsibility will remain with Sydney Water?

MR EVANS: I think that is a case again of why you have to have a reasonably general methodology, because the circumstances will vary enormously. There will be occasions where people might access a sewer main that could be running through a public easement, say, and they might own the land, own the plant, operate it and maintain it, and our interest would be simply reduced to ensuring the integrity of our system was protected by way of back return of effluent, or whatever it may be. That would be a very clean and simple situation.

There will be other occasions where people might be seeking access to, say, land that is adjacent to a sewage treatment plant or something, which is within a buffer zone. One of the issues that often has to be confronted here is that Sydney is a highly built-up city, especially when you are building recycling schemes or stormwater retention, or whatever it might be, in the established parts of the cities rather than the greenfields areas, and access to available land within buffer zones and all that goes with it is scarce.

So there may be circumstances, as you suggest, where people want access to some of our land to build a plant and then there is the question of what degree of integration is there to the existing facility. You may end up with quite complex negotiations. I think we have to accept that will be a fact of life and have, if you like, the guidelines or the methodology flexible enough to accommodate it.

I think there is another big issue which we might want to talk about this afternoon and that is, in August, who takes, for want of a better term, the retail risk. I think that in the production end that you were talking about, Colin, that it's all reasonably clearly solvable. But another issue is, if you do a recycling scheme, who is the entity who is passing the recycled product back to the

ultimate consumer and who wears the risk of that consumer, perhaps for industrial structure reasons, or whatever leaving town?

We do live in a world where there is quite aggressive structural change. In my experience in the Hunter, on a couple of occasions you have recycling schemes that you think can get off the ground and it transpires that a particular steel maker decides to cease making steel. There is an issue of how to manage risk in building up customer bases.

MS CIFUENTES: With regard to comments that Chris Guest made earlier in relation to estimating avoided costs, I think, Chris, you were saying that one of the problems is that you actually need to have funded the project in the sense that it is going to be avoided. I am not sure I fully understand the practical implications of that for recycled water projects. To the extent that by the time it gets to a project being funded, it has pretty much been through the IPART process, it has been approved by capital works, the board, at the water authority; we are almost the final step in the funding. So what does that then mean for recycled water? I am happy for that to be discussed more generally this afternoon.

MR GUEST: I might just comment now. I am sure we will want to explore it further later. It is a difficult concept and one that is even harder, I think, to try to convert to a practical consequence.

The point I am trying to make is to say that for every recycling project that is built and operates, that will mean that in some way there is a reduced need for later augmentation of, let's say, headworks for water storages. At the moment, for instance, let's say you had a world with no recycling. In a world of no recycling, to accommodate growth you would need to have a series of long-term capital expenditure plans which, over time, will augment water supply. We are just focusing on the expenditures. You would have a program of long-term capital works necessary to supply the additional water that the population would demand.

The consequence of having a recycling project is that that will mean that you are substituting recycled water for potable water, and to that extent, as it were, add to the supply of available potable water, because you reduce the

demand on that potable water.

There is a short-term consequence. You have reduced demand for potable water, so there is more around. That has a longer term consequence, because it means you can defer your expenditures on augmenting potable water supply. The practical problem is, and I think conceptually --

MS CIFUENTES: That part is the easy part.

MR GUEST: That is right; the practical problem is the hard one. Our concern is that, to some extent, those future capital programs that you can now defer will not currently be reflected in the potable water price. The potable water price is a four-year determination that allows recovery of expenditures in that four years. The longer term expenditures are not reflected in the current price.

There is a benefit in the long term of having the recycle project, because it means that expenditures are lower than they otherwise would be, so future determinations presumably will produce a potable water price lower than it otherwise would be. But the practical problem is, because the saving will never be translated to a cash source for the water utility, there is no money that the water utility has to then fund an avoided cost payment that is made now.

MR EVANS: Unless, I think - we can come back to this - at the time of the determination for that particular project we can anticipate all of the above and factor it into the aggregate funding for the price path for that period so that there is sufficient cash flow to fund the benefit later. I think that is really what the trick is going to be.

MR GUEST: The critical issue is knowing to what extent those expenditures that are deferred in some way or another currently take account of the pricing. If they are not, there is a problem. If they are, they are okay.

MR COX: Thank you very much to Sydney Water. I would like to move to Hunter Water Corporation.

HUNTER WATER CORPORATION

MR YOUNG: Kevin Young, managing director, Hunter Water Corporation. I am here with two of my colleagues, John O'Hearn and Andrew Amos from Hunter Water.

There are a lot of common themes in this. Hunter Water put in a detailed paper at the request of IPART.

I think some of the principles, we all agree on how it can be handled. The application is where it has some interesting debate, to the point where I think that if you have two economists in a room discussing the application, you might have them come up with three opinions. It is quite a complex area.

This was echoed by Sydney Water. With regard to recycled water, there is an expanding interest in Australia due to the maturity of available water sources, which we know is becoming more difficult to create more supply. Sustainability pressures and responses, and BASIX is a large input into that equation, recycling of stormwater, which in some respects becomes competition for recycling of effluent. That is a new player in the market. Integrated water resource planning is on the increase. Technology is coming ahead in leaps and bounds.

Our viewpoint is that this is a timely inquiry and we welcome the opportunity to talk today and for IPART to look at this question, should it be regulated, which we agree with; Sydney Water's response is definitely yes.

A quick snapshot of the Hunter: there are 500,000 people, there are 17 wastewater treatment plants. Geographically, we cover the same area as Sydney. We have two wastewater treatment plants that recycle all their effluent, and 17 wastewater treatment plants. Overall we recycle 8.5 per cent of our flow from the treatment plants. That has been captured over a number of years where projects just make sense. We had our own methodology in place at the time.

Part of the reason for that is that we had a great industrial base in the Hunter region, and the picture there is of the Eraring power station where a case is made, with significant growth on the western side of the lake, if we built a treatment plant, did we need to take that effluent

across the whole of the western side of the lake and out to the ocean outfall on the coast. The answer was, if we agreed with Eraring power station to take all our effluent, we avoided the extra cost of the pipeline all the way to the coast. That was a significant saving at the time.

We have also had major recycling for coal mines, washeries, power station and other industries. I'll pick up on a point that was covered in David's comment. The volatility of industrial demand in the Hunter has been quite significant and we had a case where we had signed up BHP, a lot of effort went into an agreement for a major recycling scheme, to the point where six months later they announced they were leaving town, so that fell through.

We had other schemes where we got to the point where we were going ahead, but again, volatility in industrial supplies has meant that some of our major players are looking at three, four, and five years ahead, and it is hard to get those up on a risk basis for the longer term investment in capital.

We have gone for industry as being the best bang for our dollars - large volumes, low infrastructure. They use our effluent even when it is raining, which other players do not, so we have found that to be very beneficial, and it has potable substitution, which I think is a key point. When we are talking about this avoided cost, all recycling projects are not the same. Do they avoid potable water, or are they agricultural use where they would not be taking drinking water? That comes into the equation later on.

We have also had smaller opportunities in the outlying treatment plants, mainly irrigation. They are opportunistic of being able to take effluents from the plants, but it does have benefits in some cases in reducing our discharges through DEC licensing, which may place limits on the organisation where recycling can be a benefit, and that is an added avoided cost.

This diagram simply shows the industrial base driving recycling in the Hunter and the agricultural. At the moment we have not been strongly involved in the recycling with third pipes, like Rouse Hill in the Hunter, but that is coming.

We talk about water being a uniform product. It gets

to uniform standard, wastewater, but the recycling product I think has an amazing variety of potential uses demands, delivery modes and quality options. Each case is individually different.

In a lot of cases it has complex links to the other systems, so it is to the potable supply, the wastewater and the stormwater. That is a unique feature of recycling. It is turning the industry not from just a water supply, wastewater, stormwater, but the whole of water cycle - recycling brings it all together. The community is coming along, but there is a range of community perceptions from unbridled enthusiasm to yuck, so that is the complete spectrum.

It is not always best to pursue recycling for recycling's sake. We have had a number of commentators in the Hunter saying that the only focus for the future should be recycling. I think that is the same as going back to the 1980s when utilities were criticised by saying the only way for the future was to build dams. The reality is everything has to be balanced up in a complete water cycle sense.

Some of this has been covered. Reasons for recycling: clearly economic – it can be a least cost water source, but should not close off other options. There are various impacts of effluent disposal. They can be both positive and negative. Positive aspects can be discharge of effluent to a creek system that can dilute current salt levels in the creek, which can be a positive benefit. If there are nutrients in it, that can be negative. It can have both positive and negative effects.

One of our cases was Black Creek, our Cessnock treatment plant, where under an early plan we were proposing a recycling scheme to take effluent to farmers in the area and farmers lobbied for us not to put in a recycling scheme because their best way of getting water was to put it in the existing creek and then they could capture it further downstream. It had benefits for the creek and for the farmers and we achieved the same objective by not putting a formal recycling scheme in.
It can reduce the demand for potable water.

Sydney Water has commented on both source and distribution. The pricing formula is pretty simple. Not

being an economist, as I understand it, it is incremental capital cost, building block OM&A and adjustment for avoided costs in water and wastewater and externalities. The equation is quite simple. This afternoon the workshop will be on the methodology of how we agree that and it has some interesting components that we need to go through.

Avoided costs, just to cover that, is costs in water and wastewater systems that would otherwise occur without recycling. I gave you the example of the Eraring power station where we say the cost of the pipeline, building a pipeline all the way from the western side of the lake for many, many kilometres, was a significant saving that occurred to the organisation.

It has complex interrelationships with both the water and wastewater systems. At best it can have potable substitution savings and that can lead to savings, as Chris Guest was explaining, deferral savings on the potable water side, which is a real benefit to the community. How we capture that I think is up for discussion. That could be done a number of ways, either by putting some recycling costs in the DSP for potable water as a real benefit occurs or it could be by IPART agreeing that is a cost overall for the total community. There are a number of ways that can be captured and a number of economic thoughts on what is the best way.

Of interest is the complex relationship we are seeing in the third pipe solution, where the effluent is providing toilet flushing, and I am sure more and more things in a household, but there has to be reliable supply. If the effluent supply does not occur then toilets don't flush so water systems have to ensure reliability and this is a growing area as well for IPART to look at. The way it has been done is to make sure potable water is available as a backup, so a number of papers talk about getting the costs right to make sure we are not putting too much back of potable water linked to the recycling schemes.

Interestingly, more and more there is a reduction in wastewater costs. At our Karuah plant, 100 per cent of the effluent is recycled. That came about because that was the cheapest option. Rather than pumping the effluent to Raymond Terrace, about 30 kilometres away, recycling was the cheapest option. Therefore we have put it in the DSP for wastewater customers to pay. It was the cheaper option

for growth. It was just a scheme that got up and made sense.

A key theme I wanted to put some context on is that all this has to be considered on a case-by-case basis. I was lucky enough late last year as part of a conference to visit southern California, which is well known for its recycling, to look at a mature area. As most people would know, southern California has major aqueducts and rivers that travel thousands of kilometres. As I think Mark Twain said about southern California, "whiskey is for fighting over and water is for killing over". Water has been a big deal for hundreds of years.

Visiting those areas and a couple of utilities was a real eye opener on a mature system moving forward. What I found was that they all have their individual cases of integrated water resource management, they look at sensible supply augmentation, look at the cost they can get from recycling and what benefit they get from potable substitution, leakage reduction, not demand management - water efficiency as the marketing says - and look at desalination. That is part of the plan. They have a balanced approach of desalination, recycling, augmentation, where possible.

Interestingly, some of these plants have a designer range of recycled water. They say to their customers, we have five products in our pricing regime, which goes from 30 per cent of the potable water price to 40 per cent higher than it. Their highest grade of water is twice through the plant. They supply water to places like oil refineries and power stations, which people are happy to pay 40 per cent more than the potable water price because of the saving in infrastructure that is achieved.

An interesting sideline is who is responsible for the reliability. As you get into more detail it becomes more complex. If the recycled water does not keep flowing and the cost of shutting down the refinery comes to millions of dollars, who wears that?

There are significant avoided costs in using recycled water. We say it is case by case in the Hunter as well. We have an integrated water resource plan. We have been lucky with the drought, no restrictions for a decade, then for a week only. But we are doing a new integrated water

resource plan because we have major growth coming up, so we are looking at how we can best introduce retrofit schemes, solve leakage, we have sensible supply augmentation available in the Hunter, and we are doing a major $500,000 recycling project to look at where we can get best results, including recharging of aquifers, and this is a diagram of a new scheme that is taking off, 5,000 homes with a third pipe system, that will be coming in, and there are opportunities elsewhere.

My key point is, it is not recycling just for recycling's sake, it is what has to fit into a balance of options that is available to meet supply and demand.

Project-based pricing is an emerging market. It does favour project-based pricing, but the context is that there is a wide variability in the product, uses, scale and costs. Even though residential reticulated customers are similar in use our belief is that there are too few projects to establish an average price so we do favour the methodology to be approved by IPART and for IPART to regulate it.

There has to be a lot of flexibility in that because of the variability in the product, uses, scales and costs, the mix of new entrants and existing customers and the investment risk. So there is a lot to be considered in that. The recycled water prices should be cost reflective, is our view, cover incremental investment and operating costs and take account of avoided costs, apply on individual recycling project basis - this seems like IPART's role, the Chairman must do all these - be flexible, simple and easily understood. If you can achieve all that, we would be very appreciative. It should be applicable to different customer types and I think it is important that it is capable of IPART audit. There has to be some transparency at the end of the day where IPART can audit what has been done because at the end of the day there can be cross links between the water, sewer and stormwater prices, and that transparent link has to be through IPART, believing that we are acting appropriately, efficiently and for the best outcome for the community.

The next steps - we look forward to working with IPART and other stakeholders to develop a recycled water pricing methodology and our aim is to promote best use of resources, is cost reflective, applicable to individual

projects, be flexible to cope with new customers and existing customers and be auditable.

We can discuss the process in the workshop, the different ways that methodology can be applied, but we think there is great promise for it. Thank you.

MR COX: Thank you, there is now an opportunity to put questions, and we will start off with Richard.

MR WARNER: Does your current potable water price have sufficient air space to allow further recycling schemes? Is it at the right sort of level?

MS YOUNG: Well, the Hunter approach has always been that we minimised our fixed charges. We have concentrated on having a high volumetric charge. I think we are up to about $1.10 at the moment. Something for our next price path will be to look at a inclining block approach, which wasn't introduced previously, but we would look at that in the future. I think the pricing of water reflects the cost of water supply in the Hunter and I think it is IPART's role to do that. People have argued it should be a lot higher in the Hunter but I think that would be more than our efficient costs of supplying the product. Questions would be asked if it is higher and IPART set that - what would we do with the additional money? I guess the heart of your question is, I think it is appropriate in the Hunter, and it has allowed recycling schemes to go ahead. When good ideas come around, they have been grabbed and adopted in a range of areas.

MR WARNER: One of the other issues that you raised was water that currently goes into rivers and streams, there are two-parts to this question, I guess: If we start dewatering rivers and streams, that is, start directing effluent to other uses, what does that do to the rights of existing users? And the second part of the question, if there are environmental benefits in using recycled water as part of an environmental flow regime, how do you count that in the cost of recycling water?

MR YOUNG: It is a really complex area. I think you have picked up a good point. We strongly believe that in a number of cases that there are real environmental benefits to letting effluent continue to go into some of the inland creeks. There is a case we had at Cessnock, at that point

we thought there was some economics to get up on putting a recycled scheme in, but when we looked at the impact on that creek from taking the effluent out, it would have been detrimental to the environment of that creek and we decided to not go ahead with the scheme.

These things come out from a case-by-case basis of investigation. What you first think of as, let's go ahead with recycling, it will be great, a formal recycling scheme, is not always the case. The only thing I can say is that you have to weigh all of the environmental impacts up rather than just some link to potable water, so the environment of the creek nearby.

MR WARNER: We always talk about recycled water being a second grade product, if you like. In new estates where they are going to have a third pipe network where water is fit for particular purposes such as toilet flushing, et cetera, is there a case for pricing parity between potable and recycling?

MR YOUNG: If you talk to the Americans, it is interesting, because they use recycled water for discharge into aquifers which later they use as potable. I think our concept of recycling of effluent, we think of the effluent, we think of the source, and a mindset change for the whole community is to think of the quality of the product and the suitability of the product. Forget about the source. As the Americans explained to me, a glass of water is there, it has probably gone through a million dinosaurs before it got to us. I think we need to have a focus in the community of the quality of the product and suitability of the product and think less about, this is effluent. That is a major mindset. Interestingly, the recycling plant that had five grades of water, they didn't call it effluent grade one or two, they have the marketing skills and now call it twice-through. They are moving away from a concept of second grade product.

MR REID: One of the issues that is raised in your submission is the combination of developer charges and periodic charges and the relationship between them and recovering the costs for recycled water. Obviously you know of the situation, for example, in Victoria where there is less reliance upon developer charges and much more reliance upon periodic charges. I am just wondering about the impact of our reliance upon developer charges as promoted,

for example, by yourself and the impact that may have on the reliability of recycled water schemes and any comparison that is done in that situation?

MS YOUNG: It is a good question. In some sense I can take a coward's way out. I know that the Victorians are regulated. It is often said that the regulator says that a water utility, if we have a commercial focus, should be indifferent about whether a regulator provides a return through the developer charge or through the tariff, that that is a regulator's role to decide. From a commercial viewpoint, we should really be indifferent to it. It should be IPART's role. However, as you know, it does not mean we don't have opinions, and I think that would be one of the interesting things to tease out, what signals you provide by covering avoided costs in the developer charge and the overall tariff.

The same principles should apply really. The same principles of avoided costs can be calculated. It is simply where the money is coming from, as Chris said, and there are a number of options, but I would be interested in IPART's view on how you think that equation should be solved.

MR COX: You will not get it today. Thank you very much for your presentation.

GOSFORD CITY COUNCIL

MR COX: The next presentation comes from Gosford City Council.

MR DIFFEY: Good morning, I am the Manager Regulatory Services, Water and Sewer, and I would like to introduce Dan Waters, our new water project officer, who is working on a water initiative study for us, and Byron O'Loughlin, our finance officer, who can handle any curly financial questions.

What I will do is run through a background of the issues of recycled water at Gosford, what we currently do with recycled water, some new schemes we have coming on line, some potential future projects that might come into play and then we will have a quick look at our suggested pricing methodology and give a quick summary of the recommendations we have put in our submission to IPART.

As has been widely reported to IPART, we are in deep do-do, if you like, with respect to water storages up our way. We have said below average rainfall for ten of the last 13 years. That has left us in a pretty dire situation. The Gosford Wyong central coast area has less than 20 per cent storage availability to supply to customers, so we are in dire straits.

We have a strategic plan called water plan 2050. A key feature of that plan is reduction in reliance on service water sources. Obviously recycled water can play a key part in that water plan 2050 and it is built into the plan. We clearly see that recycled water can help us reduce the demand on potable water and therefore we are putting a bit of work into investigating those options. Our submission is obviously a result of the IPART review into the pricing of recycled water.

This is a photograph again that has been trotted out many times. In simple terms, the purple area summarises the historical storage performance of our major storage dam, Mangrove Creek and, as you can see, in February 2006 we are below 20 per cent. Just for comparison, the red line is Sydney Catchment Authority's Warragamba dam storage. It has also been pretty bad, but has taken a kick up through pumping, and our friends in the Hunter have historically been a little bit better off than the other

two water authorities. They are currently well above 70 per cent at the moment I think.

Current reuse is pretty limited. We have two sewerage treatment plants, Kincumber and Woy Woy, that reuse about 350 ML of treated effluent internally. We have never financially put a dollar value on that reclaimed effluent and we do not provide any reclaimed or recycled water in any form externally to any customer in the Gosford area at this stage.

We have a couple of projects about to come on line. One is a recycled water tanker filling station at Kincumber sewerage treatment plant. It will have tertiary filtration and disinfection which we will use internally within Gosford's area of works for roadworks, construction, dust suppression in construction, roadside garden watering and landscape work and it should be ready about September this year. We imagine that it will produce about 73 megalitres per annum.

There is also a sewer mining demonstration plant that is currently on the plans. We are negotiating with Gosford racecourse to build a sewer mining demonstration plant which will extract raw sewerage from a local carrier. It will be treated by subsurface flow constructed wetland. We imagine it will be ready about early 2007 and it will be used to irrigate the racecourse and produce about 75 megalitres per annum. We intend to negotiate with the racecourse board on a fair and equitable price and this review will obviously have an impact on that price.

As I mentioned, Dan is working on a water recycling initiative study. We have engaged Kellogg Brown and Root to look at a wide range of water recycling operations, including wastewater for irrigation and industrial use, harvesting of stormwater for irrigation and industrial use, and aquifer storage and recovery is an important area that is often overlooked. We are looking at that, by using highly treated effluent and stormwater.

Another area that is pretty controversial is the use of recycled water and stormwater for indirect potable reuse to go back into our dams. It is fair to say that New South Wales Health is not overly tickled with that idea but we are looking at all our options. We are looking at environmental flow substitution using treated effluent and

stormwater. Again, we don't have any of our effluent at the moment that goes back into inland receiving waters, all of our treated effluent goes to ocean outfall basically. So there are about 27 projects being looked at by KBR and essentially they came up with a short list of four key areas that we are going to investigate further.

These include the reticulation of highly treated effluent from Kincumber sewerage treatment plant in stages from the east, where the Kincumber is located, west through Gosford and up to beyond the plateau. That is obviously for irrigation and industrial use. We think that there is validity in looking at sewer mining at Terrigal, Somersby and Lisarow, West Gosford, Kincumber and St Huberts Island.

There are a number of areas where we could look at stormwater and these include in Railways and Department of Agriculture dams up on the plateau west of Gosford and also at Tarragal Glen and Lisarow. There are a number of areas we could utilise. We are also looking at recharging and storing in the Woy Woy aquifer, which is an area that is ideal for injection of purified stormwater or recycled water. It is fair to say that not all of these things may attract a recycled water charge, a lot of these may be for internal use and therefore are probably not subject to this review.

The pricing methodology. Like my two learned colleagues have said earlier, we prefer a model that allows full cost recovery. It is fair to say that we acknowledge the fact that with the current potable water price it is difficult at this stage to imagine that every recycled water project we come up with is actually going to be economically self funding. That does not mean that we don't think we should still have a model that allows for full cost recovery.

It is pretty important to note that at Gosford funds are pretty tight. We have told IPART that a number of times over recent years, that it is not as if we have a lot of cash to throw around to subsidise projects like water recycling projects, so we think they should pay for themselves and as technology allows we think that is becoming increasingly more viable over time.

We obviously believe that IPART should set the methodology that allows a maximum price to be set which

does not stop us negotiating a lower price with any potential customer. We have looked at a model that the Queensland EPA has come up with, which is a manual coming up with recycled water agreements, and we think that is quite a useful tool that maybe other authorities could look at.

In simple terms, we think the price should not be set as a set price, it should be based on, well, fee for service essentially. We think it should be made up of a fixed service charge, much like Sydney Water has at Rouse Hill, plus a recycled water usage charge. My director, who is not here today, is quite keen on a model that Brisbane Water uses which includes a nominal price for the raw product. Brisbane Water has a couple of schemes that supply treated effluent that is then further treated for use by industry. There is a nominal charge applied to the raw product, the raw treated effluent.

We believe that the water usage charge that is being proposed should vary between schemes depending upon, as Kevin and David pointed out, there is no need to have a uniform product supplied to all recycled water schemes. The price should reflect that there is going to be varying product quality, there will be varying distribution costs and varying end use. We certainly don't support a blanket or common usage charge, nor a charge that is set too low, otherwise we just aren't going to be able to afford to do these things.

As I have alluded to, we think that the price charged in Sydney for the fixed component should be - we are quite happy to go with a similar charge of $25.32 for a 20 MM meter. As we do with our potable water, we believe that fixed charge should ramp up based on meter size. A simple calculation is meter squared by 400 times on 20 MM charge, based on no financial rationale other than my boss likes it. We believe that the raw product charge should have a small charge applied to it. Treated effluent, we believe, should be pegged at 10 cents a kilolitre with no nominal charge being set for raw sewerage or stormwater.

We believe the recycled water usage charge should be made up of that nominal product charge, it is per kilolitre, plus a variable charge that reflects the capital cost spread over the life of the asset plus the operating cost per annum. We believe that that price should have a

CPI increase applied each year to allow us to keep up with the cost of living.

So in summary, what we said to IPART in our submission was that we believed that the pricing methodology that IPART sets should allow for full cost recovery, we should be able to negotiate prices for individual schemes, therefore prices may vary between schemes, and we don't believe a blanket charge should be set. We believe there should be a two-part recycled water charge, a fixed charge based on the meter size plus a variable price that reflects the cost of delivery. It should include, or perhaps could include, a nominal cost for the raw product.

We believe that the recycled water price should run in parallel with the water, sewerage and drainage fees and charges price path that IPART is about to determine. We would like to roll these all into the one that we have to do every few years rather than have separate issues papers put in every few years. And one thing I didn't touch upon, sewer mining in the issues paper was typically considered to be the authority giving an outside body access to sewerage for their own purposes. Gosford is more likely to want to do it internally, take the stuff out ourselves, treat it and sell the final product, so we believe the definition of sewer mining should be extended to include owned and operated plants of authorities. That is about the size of it. I will sit down and wait for questions.

MR COX: Thank you. We will start off with Richard and Colin.

MR WARNER: My question was really going to concentrate on the 10 cents and the economic justification for that.

MR DIFFEY: There is none. It was essentially a simple benchmark exercise. Rod used to work at Brisbane Water. He brought it to my attention, I made some calls, and that was part of the negotiated agreement they had with a number of customers. This is a structure of the recycled water price that is, just as I said, a small nominal charge, but I guess that somehow reflects the cost of producing that product in the first place, although it is nowhere near cost recovery, and then having the variable charge, which actually reflects the actual cost of treating it to the level that the customer wants. So no rocket science; it was just benchmarking.

MR WARNER: Would you agree, though, that the fact that there are not people knocking at your door wanting to take effluent at zero price, that suggests --

MR DIFFEY: Absolutely. It is fair to say that this is an ambit claim on Gosford's part. We don't want to be put in a position where the umpire sets a blanket charge on a product and makes it impossible for us to sell it. So we support our colleagues in Hunter and Sydney whereby we want to apply or set a methodology, but not set an average cost. In Gosford we have a big problem in terms of raising developer funds, because we are largely developed out. There is very little option for us to raise those funds.

To be cost effective and to answer a question that you have asked the other two corporations, we have no fat in our potable water price. Our user charges are lower than both our colleagues; it is 92.5 cents. We've asked for that number to be increased almost up to parity with Hunter and Sydney. That does not account for any recycled water projects other than the two I have mentioned. As you know, we are spending a lot of money in Gosford and Wyong on drought contingency.

MR REID: If recent media reports are correct, Hunter Gosford and Wyong are to receive some federal government funding for the Hunter connection. Do you have applications in your funding for recycled water schemes?

MR WATERS: We did put in a grant application for WaterSmart funding for the recycling schemes, but it was unsuccessful.

MR REID: Given that Gosford is a largely developed area, do you see a possibility that if some large-scale recycle water scheme got up and going, it could make some of your existing pipes, networks, and STPs redundant, in part or in whole, and would that be an issue for you?

MR DIFFEY: Make the sewage treatment plants redundant in terms of people mining sewage before it gets to the plant? The volumes involved are unlikely ever to result in that - very unlikely. The cost of putting a recycled pipe up to Somersby is estimated to be in excess of $30 million, so if it goes ahead, we imagine it is going to be a staged process that will take many years before it finally reaches

Somersby, so it will take many years before we get a significant reduction in the amount of sewage that flows into Kincumber and Woy Woy.

The sewage is essentially going to go through the plants, be treated, and then sent back. We do not see sewer mining as reducing the amount of flow that's going to the plants to the extent where it has any sort of redundancy effect on the sewage treatment plants.

MR COX: Thank you very much. We will now break for morning tea. If you could be back in 15 minutes' time, which is 11.20.

SHORT ADJOURNMENT

MR COX: We will now resume. The next presentation is from Wyong Shire Council.

WYONG SHIRE COUNCIL

MR GRANTHAM: I'm Ken Grantham, manager, water & waste, Wyong Council. With me today is David Cathers, director shire services, and Ian Johnson, technical services engineer.

Being the last presentation of the four water agencies, I was pretty confident that most of the theory would have been covered by Sydney, Hunter and Gosford. I was not disappointed. So what I'm going to look at is some of the practical implications of all that theory using Wyong experience in effluent re-use as an example.

At Wyong there is a number of effluent re-use schemes currently operating from our Bateau Bay treatment plant, 1.8ML a day supplying water to a local golf course, croquet club, soccer fields, rugby league fields. At our Toukley treatment plant we have irrigation of two golf courses, Magenta Shores is a private golf course development, local ovals, and will be connected to schools and bowling clubs.

In addition, we have small tertiary plants providing water for pickup by tanker for road development, vegetation watering, and landscaping, et cetera. That has the potential to supply about 10 per cent of our average annual water usage.

In terms of treatment costs, though, as you heard the other agencies say, this is a highly variable product. To provide the tertiary-treated effluent for, say, watering golf courses is costing us 36 cents a kilolitre. These costs are costs that are unique to particular schemes. I would like them to be regarded as indicative but not necessarily typical, because depending upon the quality of your primary effluent or treating to a higher standard, and depending upon the standard you want to achieve, these costs vary considerably.

With regard to tertiary treatment, if we want to get pathogen reduction so that we can put that to households, it is 43 cents a kilolitre. We are looking at a scheme to provide water to a power station for boiler feedwater. You are talking about $1.80 a kilolitre.

In terms of delivering that product to the consumers, when the tankers pick it up at our treatment plant there is zero cost in delivering it. If we want to bulk deliver to the golf course about 2 kilometres away, it is 27 cents a kilolitre. We have looked at a scheme to deliver to homes within one or two kilometres of the treatment plant and we are up to 39 cents a kilolitre, and that is only within the local area of the treatment plant.

Even within the schemes, Bateau Bay is about 1.8ML per day and Toukley 4ML per day. The economies of scale of that scheme mean that Toukley costs significantly less than Bateau Bay. This range of costs is something that needs to be taken into account in any methodology or pricing that comes down. Again that reinforces what the other agencies previously said.

We have existing agreements with a number of consumers. When we commenced these agreements, I think times in terms of effluent re-use have changed considerably over the last few years. About seven or eight years ago we approached the local golf course about providing effluent. I attended a number of public meetings. At one public meeting I went to there were over 60 people there, three were for and the rest were against. Typically all those against were the people who lived around the golf course and saw effluent being used for watering was going to decrease their property values. Of course all their reasons were health or environmental related, but the real thing was property value decrease.

A number of years later, as a result of drought, we are providing effluent to that golf course. Those objections were not raised. So there are changing times. However, that does not mean to say that everybody is going to race out and want effluent as a product.

When we set up these initial agreements, they did provide an initial discount moving to full cost recovery. In one instance we have part of the scheme directly funded by the developer, so he has already paid upfront some costs, so in terms of full cost recovery the cost to that developer obviously has to take that into account.

As I said earlier, different schemes cost differently, so you have different amounts that you need to full cost

recover. Taking all that into account, I do not think we are too far from what the other agencies have been suggesting. In principle, we believe there needs to be possibly some short-term incentives for effluent re-use. Maybe that will lessen if this drought keeps biting. No doubt that, long term, we should target pay for use.

For large users, in particular, potentially you are going to have a wide range of qualities of effluent that they may want. We would see it as being very difficult to move away from individual agreements, and we have the existing agreements that need to be either honoured or cut across potentially by an IPART determination.

In terms of diverse users, and this is possibly where I will digress from one or two of the proposals that have been put forward, we believe that a common price based on a common level of service is more appropriate than scheme-based pricing. If we think about existing water supply and sewerage schemes, if you live next door to the water treatment plant and there is effectively zero delivery cost to you, do you get a discount use on your use of water? No; you pay the same amount for water as the person who lives furthest away. Similarly for sewage, I ask the question why for effluent? If someone is receiving a common level of service, why should they pay a different price just because it costs differently to use that, because we all produce water from either bore water or run off river flows; we do not discriminate who gets that. We say you are all getting water at this common level.

However, if you have different levels of service, be it different levels of treatment or different means of delivery, yes, there should be different price. This is not on the slide, but I'll throw in a different take on BASIX than what I heard this morning. If you look at BASIX and say what does that typically result in in the community, it results in a developer putting in a tank and water efficient devices throughout the homes. That tank serves a number of purposes. It reduces the potable water consumption; it also reduces impacts on the drainage system; it also has environmental benefits in terms of returning to natural levels - the run-off from developed areas and things.

If we go out and say we are now going to allow the

developer, if it is cost effective for him to replace putting in that tank with an effluent re-use scheme, are we in fact doing away with those other benefits; in other words, we are losing drainage benefits and the environmental benefits, we are just weighing one benefit off against the other.

I am putting that on the table, because I have heard discussed here today that BASIX may drive extension of re-used effluent into residential areas. I think I have presented the alternative argument that BASIX should discourage effluent from going into residential areas, because you are wiping out, potentially, the benefit from the tank and what BASIX was intended to achieve. Maybe we should keep effluent re-use up our sleeve as an additional means of reducing water consumption on our system. It is something to think about.

With regard to sewer mining, we are examining a couple of areas of that, but we do not have any firm proposals at this stage. I believe the same principles probably relate to sewer mining as they relate to effluent re-use, and that's it from me. Thank you.

MR COX: Thank you very much. We have an opportunity for questions.

MR WARNER: You suggested in your submission that initial subsidies might be required to promote recycled water, at least in its formative stages. Do you have a view on the potential size of those subsidies and who you would expect to pay for them? What is going to be needed to get this off the ground?

MR GRANTHAM: I can only use our previous experience. When we set up the arrangements with both our golf clubs - not the Magenta Shores, which is a private development, that is, straight up from the start a full pay for use - but for local sporting facilities and the like, to encourage them to go on to effluent re-use we set up agreements which provided them a significant discount in the early years, and essentially they would pay the same that we were recovering from the potable water charges, but we would not limit the amount of effluent they could take.

In fact, they could increase their use without paying a penalty. But then we would move over a number of years

to full cost recovery. I really think it is dependent upon individual situations, and I think the methodology needs to have flexibility to allow agencies to negotiate. If it does not, maybe we will lose some of the potential uses we could otherwise gain.

MR CATHERS: That approach has been influenced by the current drought, in that we were attempting to try and offload from the potable supply as much as we could, so we wanted to get some pretty quick action, and pretty quick interest in terms of being able to do that. So to that extent I think the question that is a valid question is: would you do that in normal times? I suspect not.

MR WARNER: You are the first agency we have heard from that is proposing a uniform price across your operating area. Also, part of the reason that Hunter and Sydney put up for saying that is not a good idea is the fact that they do not have enough schemes out there to determine an average price. Are you in a position to tell us what you think the price of recycled water should be pitched at if you were going to have a uniform price across the board?

MR GRANTHAM: The principle is full cost recovery, so there is no question as to what the price should be. I would rather touch on the reasoning. You saw from that variety of costs that different schemes are going to have significantly different costs. If you address effluent re-use on a scheme basis, you potentially have Richard Warner paying 30 cents a kilolitre, and Colin Reid paying 50 cents a kilolitre, and they live 10 kilometres apart, but attached to two different schemes.

In the local government arena we see the political implications of having that sort of charging disparity when you are both effectively receiving exactly the same level of service.

The other area that I think needs to be considered is that, if you just charge cost recovery on the basis of individual schemes, you will get your cheap schemes up and running, and you will flog all the water real quick, but that means your margin schemes and your higher cost schemes will not get a guernsey. There may be benefit in raising up the price of those lower cost schemes, but subsidise the higher cost schemes but still selling effluent at a price at which it is attractive to sell it.

MR WARNER: Isn't it more economically efficient to build the low cost schemes up until the potable water price and that is where you end up?

MR GRANTHAM: So what you are saying is, if a scheme costs 50 cents, you sell at 50 cents up to $1, say, but then if you had a scheme at $1.20, you would not sell any water from that scheme. But if you raise that 50 cents to 70 cents, in your economic theory you would still get rid of all that water, and you would bring down your $1.20 scheme to $1 and you would sell all that, too; in other words, you have expanded your market just by bringing it back down.

MR WARNER: That might not be an economically efficient thing to do.

MR CATHERS: We are certainly not suggesting that there be a common price across the shire in terms of different standards. Obviously, if there are different standards, different pricing. Secondly, in terms of some of the issues that were previously raised about the practicalities of trying to come up with a methodology of offsetting effluent scheme costs towards, say, for instance, water supply headworks, if you have a plethora of schemes, it would be particularly difficult to come up with some mathematically pure approaches, I believe, in terms of those offsets across those plethora of schemes. It would induce a series of complications.

MR REID: Can I just clarify one thing with you? When you quoted the 36 cents, the 43 cents and the $1.80, was that an ex-plant cost or a delivered?

MR GRANTHAM: That is just the treatment cost.

MR REID: So when we say $1.80 to the power station, presumably that would save the power station itself some money in the treatment costs.

MR GRANTHAM: Yes, that included reverse osmosis for demineralisation, which would offset some of the power station's costs. Again, I am saying those costs are indicative; they are based on specific scheme costs and they could vary considerably between schemes.

MR REID: Just getting back to the postage stamp pricing issue again, I suppose as long as Wyong was the supply agency, that obviously could work, but once you allow presumably private providers, you may have a different situation that could arise.

MR GRANTHAM: It was my understanding that if the private sector come into it and it was a competitive market, IPART would back out of it and, therefore, we would not be subject to price regulation.

MR REID: I am talking about if they had a franchise area themselves --

MR GRANTHAM: If the market changes, I agree. We are currently looking at the market as a monopoly market. If it changed to a competitive market, I think there are a whole different range of issues you would have to look at.

MR REID: Getting back to the issue raised with Kevin Young from Hunter, the relationship of developer charges and periodic charges, would you expand on your thoughts on that topic?

MR GRANTHAM: I raised that issue particularly in relation to BASIX, because if you were going into the residential market with your effluent re-use by a dual reticulation system, I think having a methodology similar to the current methodology we have for developer charges is appropriate. However, if you are operating on a scheme-by-scheme basis, in other words, you were selectively picking customers on a scheme basis, I think you might find a methodology of including all costs within sale price rather than having the developer contribution, or as we have done with Magenta, negotiating with the developer a buy-in price. In other words, they are paying for a proportion of capacity, so they paid upfront for that proportion of capacity as an individual agreement rather than through a developer services plan. That might be a more appropriate way to go. I think these are the things that need to be explored this afternoon.

MS CIFUENTES: When you speak about having something similar to a postage stamp pricing proposal, do you mean just for residential customers, or do you mean residential and industrial?

MR GRANTHAM: Our experience at present is that we have agreements with two large users. We have a number now of smaller users wanting to come on the system. We see difficulty in now charging all of those smaller users a range of different prices. So what I proposed there was that for large users you could have a negotiated price, but for what I would call the smaller users, be they residential or small commercial industrial, my opinion would be a postage stamp price would work more effectively than a scheme-based price.

MR COX: Thank you very much.

SYDNEY OLYMPIC PARK AUTHORITY

MR COX: We will now have a presentation from the Sydney Olympic Park Authority, if you would like to come forward and introduce yourself.

MR LISTOWSKI: Thank you, and good morning everyone, my name is Andrzej Listowski, and it is a great pleasure to be here. To us it is an incredibly important issue to debate recycled water pricing and sewer mining pricing structures for our scheme. I would like to acknowledge the work that has been done by IPART and the efforts of Sydney Water over the last seven or eight years in going through the process.

We are the first of the urban schemes to establish a water recycling scheme and we jointly pioneered developing a pricing structure, more or less equitable, although debatable in retrospect. What we learnt over that period of time is quite remarkable because it gave us a better understanding of the planning policies and operational complexities. We better understand the costs involved in treating sewage and stormwater, the complexity and difficulties in providing funding, but on the other side there is the encouragement we got from the community, the flexibility that we have in our system in terms of the operation of the Sydney Olympic park as well as the reliability of the scheme. As I said, our scheme was the first of its kind and we have great appreciation for the work we have done today.

Sydney Olympic Park is about 760 hectares, of which over 400 are covered by the parklands, so there is a large sporting complex as well as a residential area, the former Olympic village, currently with about 7,000 people living there, about 3,000 employees at the park and probably about 150,000 visitors to the park per week.

The park is expanding and we have major plans to go beyond the current capacity and also increase the development size and complexity. According to our vision, we would provide an additional 1.5 million metres of commercial space and a further 25,000 people in areas such as Homebush Bay West, Carter Street, Newington and Silverwater. It is in the plan of the area by 2050 to have a population of about 150,000 people in our area. The question is how can we solve the dramatic growth in this area within the urban context. How can we ensure supply of services and

how can we facilitate this without having a major impact on the infrastructure?

As well as the situation before the Olympics, we had to resort to other concepts, and this concept was made around the integrated water system and the fundamental element in that was recycling. We used a number of statements, in fact, we perceived recycling to be a common operation in turning water into potable water consistently and repeatedly over time. Drinking water resources are extremely limited in this area. The same thing with the sewerage system, which is heavily overloaded, so it gives us additional motivation to work out how to do things differently. Our aim is to reduce demand on drinking water resources and to reduce pollution. Both of those criteria fit perfectly into our development plans.

We have a number of water resources available and they are currently utilised. We use drinking water, we also fully use whatever other water sources we can, sewer mining from various locations, we treat stormwater and we use stormwater directly as well. We produce recycled water that is used by us and other customers. Our annual saving of potable water is approximately 1,250,000 megalitres. As an authority, we have done probably a lot more than the rest of the precinct because through all the schemes, including water efficiency programs, our drinking water demand has been reduced to about 6 per cent of the total water used, 48 per cent comes from recycled water and 46 per cent comes from stormwater reuse.

In the process of recycling water we use the two major water resources, which for us is sewage and stormwater. Stormwater management includes approximately 30 stormwater ponds allocated in five different catchments. We are fortunate to have a large stormwater storage and we had to build a water treatment facility that purifies the water to very high standards. We have made significant progress in obtaining approvals from the Department of Health to use recycled water for more complex uses. Initially we used it for toilet flushing and irrigation. We now use it for fountains, cooling towers, washing clothes and a recent approval was for use in the aquatic backwash filters. That gives us freedom and flexibility to operate in a lot more areas and perform a lot better. Now you will understand, having such an opportunity, how can we reduce drinking water to approximately 6 per cent of our total water use.

I will touch on the pricing structure. Our price is set, has been set or recommended by IPART, from 1997 and approved later by the minister to be at 15 cents below drinking water, so our price was set there. We do also charge customers a small service charge of quarter of that for drinking water. However, we do not have any provisions for accessing any credits for sewer mining or stormwater management or obtain any contributions for head works or capital works. That does not allow us to expand the scheme beyond our boundaries. The scheme is currently relying on a New South Wales Government subsidy and approximately it costs $2 per kilolitre to treat recycled water to the standard that is required by guidelines and for the applications that I have specified.

The context that I would like to encourage you to consider, the pricing structure, is away from the traditional system that is currently broadly used. I think it is only possible to consider it as an integrated concept where all additional water resources are used and costed. I strongly suggest that the reliance on using drinking water as a benchmark is not suitable because it refers to acceptability by the public of a certain product. We all understand that recycled water can perform so many different functions, as you have seen at the park, that drinking water has been used hardly, apart from drinking, cooking and personal hygiene, the recycled water performs almost the same number of functions.

We are treating water to an extremely high standard but that is the risk management approach that has been necessary to ensure that the water does not produce additional health problems. Demand management, as mentioned before by Sydney Water, is an important aspect of water management at the park. The impact of demand and supply management has significant effects on the functioning of drinking water supply and sewerage infrastructure. It has been said a number of times that recycled water is an alternative product to drinking water. Recycled water also results in reduction in pollution, simply because we collect all the sewerage, just about all the sewerage from the catchment, it does not end up in rivers and streams.

Consumers are sensitive to water prices. However, there is very little information available for customers in

that regard. It is often unresponsive to the pricing under the current structure. It would require a large increase in price to achieve a small reduction in demand. For customers, the information that is necessary to be provided has to be probably in a different form to encourage awareness. The non-price conservation programs appear to be most effective when conducted over a long period of time. Sydney Water restrictions and also the different encouragement programs being conducted for a number of years have progressively given results that result in a reduction in drinking water usage.

The way the recycled water prices should be structured must ensure it would attract customers to use it to be financially attractive and beneficial for the water authorities. Recycled water perceived to be lower quality product and subsequently is expected to be provided at a lower price. But we still believe it is a replacement product for potable water, that it has a value and should be adequately priced as well.

Other benefits such as the environment, flood mitigation, recreation values, are difficult to quantify. I think the challenge for us and the water authorities would be to put a monetary value to those to account for that. We work in a different environment. We are dealing with products that were disposed of in the natural environment at no cost to utilities or at a minimal cost. The environment simply does not send a bill for pollution. That has to be factored in some form or another.

All of those considerations illustrate that in order to establish a pricing structure it is imperative to consider water not in comparison to drinking water quality but for its significance as a supplementary water resource and its functions in an integrated water cycle.

A recent October 2005 drinking water pricing structure allowed for inclining block prices for the first time. I think a similar approach should apply to recycled water. It is a product that is supplementary to drinking water but it still cannot be used wastefully. I have another slide to just illustrate to you the components of integrated water recycling compared to the traditional system. It represents a number of water resources functions and management processes that are involved and are almost fundamental to managing recycled water, all water resources

in fact, so there is a lot more effort just to deal with the quantity of water required and disposal of waste. We are dealing with all the possible angles to reduce impact on infrastructure.

There has been a lot said about the benefits of recycled water today. I will not repeat but generally they are in two categories, tangible, that is very easy to quantify and assign a number to, and intangibles, that it would be extremely difficult, and I do not have the solution, how can we assign a value. They are very important and it has never been considered before.

Again, stressing the fact that potable water and recycled water have a lot in common but we have to look at the different angles when we look at recycled water, its price, the cost to produce, its value and quality. They are totally different. Recycled water requires a lot more treatment. The risks associated with the production of it are a lot higher. Those elements have to be taken into consideration in determining price. The institutional arrangements should be based on integration of those elements, issues such as headworks contributions and developer charges are not incorporated.

The methodologies currently only have developer charges for water supply and sewerage in areas where there is recycled water. It has to include recycled water contributions and the methodology has to be more equitable to both the utility company and to the development itself. That is a very important element in ensuring that future schemes, similar to Olympic Park, have enough funding to be established and to expand and pay the capital works program.

That is an overview, and thank you.

MR COX: Thank you very much. There is now the opportunity for a question or two.

MR REID: Thank you very much for that. I just wanted to clarify, at the moment you treat the recycled water all to the one grade, one standard?

MR LISTOWSKI: Yes. Currently we have one treatment process or one treatment train and we only have one quality of water, though we have also stormwater directly from the

sources. It is partially true because we use biological, natural processes, within the wetlands. However, the recycled water supplied to customers and sold to customers, it is one quality.

MR REID: Given the variety of uses for that, are the economies of scale such that it is best to treat it to that one standard rather than trying to differentiate between end uses?

MR LISTOWSKI: Sorry?

MR REID: You have a variety of uses that have recycled water. Each of them could get by with different grades of recycled water but you have chosen to treat it all to the one standard.

MR LISTOWSKI: That is right.

MR REID: The economics of treating it all to the one standard as opposed to having different grades of product, I just wonder if you could expand?

MR LISTOWSKI: We have considered a number of issues related to differentiating between different water uses and different water qualities, contrasting that argument with the ease of operation and lesser complexity of treatment, lesser risk of potential customer termination and just a universal approach. In our opinion it is a lot more practical approach to distributing water of one quality rather than supplying water to variable qualities. Also we believe that if there is a particular need, if we were supplying water to a specific customer and he required water of significantly higher quality, I think it is best to treat water generally and if a particular property or customer wants high water quality that could be done at the premises to the standard that they require.

Risk management associated with potential contamination of water resources, or cross-contamination, is probably so great that it would affect the public perception if something like this occurred. We are dealing with raw sewage treatment. That is always hanging above us, so we believe recycled water has to be treated to the highest possible standard. I am talking about in the urban context. If we were in a rural area, I would encourage various treatment processes to make it more economically efficient.

MR REID: You indicate that you don't receive any credits or benefits, if you like, for the reduction in costs from Sydney Water from your activities. Given the earlier discussion on avoided costs, has there been any discussions between yourselves and Sydney Water to identify those avoided costs and, if there has been, what have been some of the issues that have arisen?

MR LISTOWSKI: There have been discussions in part with Sydney Water related to sewer credits for sewer mining. Again, it is very difficult for Sydney Water to provide such a credit under the current arrangement and for us there are no mechanisms to obtain such a credit. I am not aware of any. We operate within the metropolitan Sydney Water catchment area and as such there are no provisions to my knowledge that would give access to sewer mining credits. Chris, you could know?

MR GUEST: This points to the fact that at the moment there is no established arrangement whereby those avoided costs can be captured. It comes back to why we are here.

MR COX: Thank you very much.

TOTAL ENVIRONMENT CENTRE

MR COX: I would now like to move on to a presentation by the Total Environment Centre.

MR MARTIN: Thanks for the opportunity of making a presentation. TEC sees recycling as a crucial issue in urban water sustainability for each of the metropolitan water agencies that are under review here. In the case of Sydney Water, we see it as crucial in ensuring that desalinisation does not come back onto the agenda. The shelving of the plant and use of aquifers in Western Sydney is only an interim solution unless major work is done to increase recycling within the area, so failing to do that will certainly result in desalinisation once again being placed on the agenda.

We obviously are very supportive of anything that improves recycling. Gosford and Wyong councils are clearly under extreme pressure in terms of supply and we know that there is consideration given to desalination as an option there. Again, recycling is a crucial part in avoiding going down the path of desalination, which we see as not only extremely expensive but unsustainable from a greenhouse gas point of view.

In the view of Hunter Water there is less pressure on their supply than the other agencies. However, it is an area that is experiencing rapid population growth and development so there is likely to be increased problems for them, so again recycling has a very important role to play in the long-term management of Hunter Water's system.

In general, we don't believe that recycled water pricing can be considered in isolation from total pricing and we think there will need to be an ongoing form of potable pricing. We have, as you would be aware, long advocated a reduction in fixed charges with a corresponding increase in volumetric prices, and we certainly see that that needs to continue in future pricing determinations to ensure that the price per kilolitre of potable water is more reflective of the actual cost and sends a stronger resource scarcity signal and also that will ensure that recycling is more viable.

One of the barriers that we see to promoting recycling is the need to maintain a discounted price from the current

fresh water prices. If you argue, as we do, that fresh water prices are undervalued then obviously the opportunity is there for recycling systems to be able to charge a price that ensures their long-term viability.

I think there is also the important issue of what is an appropriate price for recycled water, and certainly we acknowledge the points made by Hunter Water and Sydney Water about the need to maintain or cover the incremental costs, but we certainly agree that there needs to be a recognition of avoided costs and external benefits and I think that for too long those issues were not considered in terms of water pricing in general.

We certainly believe, however, that it is important that the pricing is set at a level that encourages efficient use. We noted from the Tribunal's discussion paper that there is clearly overuse occurring at Rouse Hill, with 10 per cent total higher water consumption as compared to the average for Sydney, even though potable water use is much lower, and that from time to time we need to top-up the recycled water system with potable supply. Obviously that reflects the fact that there is no usage of that resource and it clearly diminishes the value and the usefulness of recycling systems if they are essentially being topped up with potable water.

We support an increase in the usage charge for Rouse Hill to such a level as would require it to minimise potable water top-ups. There will be occasions when that has to occur, but it should be the goal of pricing to ensure that top-up from potable water systems occurs as a bare minimum.

As I said, we strongly believe that potable water prices are currently undervalued and we think there needs to be a shift towards increased volumetric charges with a resultant decrease in fixed prices. We believe that recycled water schemes need to be viewed as a component of an overall water management scheme. They should not be viewed in isolation to the rest of the system and in that respect we believe that it is appropriate for some of the costs of recycling systems to be averaged across current charges for potable water and sewerage services.

We acknowledge that not all customers will have access to recycled water but certainly some of the benefits of

recycled water schemes will be enjoyed by all customers. In the case of Sydney Water, I think an obvious example is the $1.2 billion cost of a desalination plant. If that is avoided, that is a benefit to all customers, that the greenhouse gas emissions are foregone is a benefit to all customers and to the community as a whole. And certainly in the case of things such as reducing discharges to receding waters and the opportunity to provide environmental flows for stressed river systems such as the Hawkesbury Nepean, that again is a benefit to all customers and to the community at large, so certainly we believe it may be appropriate for some of the costs of recycling schemes to be averaged across potable water charges and also across sewerage charges. Again, that should recognise that there are avoided costs and benefits associated with recycling schemes.

We acknowledge the Tribunal's point that schemes that are built to meet mandated targets that might not otherwise have occurred on a commercial basis will impose costs on those agencies. It is our view in our submission that we believe that should be treated as a normal environmental or regulatory compliance cost and that it should be considered in that manner and just a normal cost of business to the agencies and not necessarily treated in a special manner.

There is also the issue of sewer mining but, before I get to that I want to talk about the actual issue of how will prices be set. Of the three options that the Tribunal put forward, the first is maintain direct negotiations between customers and agencies. We don't see that as being appropriate in the future as recycling grows and more schemes become available. There certainly is the risk that smaller customers will lack the market power of larger customers such as Blue Scope Steel and would not be in a position to necessarily negotiate as favourable a position as otherwise they might.

We also acknowledge that postage stamp pricing is not necessarily appropriate for recycled water because it essentially needs to be fit for the purpose for which it is supplied and it is the nature of recycled water that many different schemes with many different grades of water are available, so we don't necessarily see one price as being appropriate for all applications. We also acknowledge that it would be impracticable for the Tribunal to directly set prices for every recycling scheme and every grade of water,

so we support and see logic in the Tribunal developing a methodology which agencies would then apply to recycled water prices.

However, I would add an important rider to that in that if you adopt such a system it is very important to ensure that the methodology is correctly applied and that agencies do not abuse their monopoly positions in terms of setting those prices, so we think it is very important that the agencies should be required to submit any work they have done in determining those prices to IPART to allow it to audit the process that has been followed and ensure that the methodology has been effectively applied and in that way ensure that appropriate charges are set.

The final point I want to discuss is sewer mining. It is our view that certainly it is appropriate for agencies to be able to recover any costs that are incurred by them as a result of making their infrastructure available to third parties that wish to undertake sewer mining. However, they certainly should not be able to charge for the actual wastewater that is in their system as that is essentially a waste product for which they currently obtain no return.

We strongly believe that there should be credits provided for avoided costs such as future augmentation of supply, reductions in pumping costs and future augmentation of sewage treatment works. We believe that in those cases it certainly may be appropriate that credits will be provided. We would need to see further details about how such a scheme would actually be developed. It is difficult to comment on the detail of what is simply being put forward as a concept at this stage, but certainly we see some potential benefits in providing credits.

That covers what I want to say. However, I think it is very important to bear in mind that ongoing reform of potable water pricing cannot be divorced from recycled prices and we continue to support further reform in terms of drinking water prices.

MR COX: Thank you very much.

MR WARNER: You argue that the recycled water price should be lower than the potable water price to provide an incentive for recycling. Do you have a view about the

relative price levels between potable water and recycled water to get that market going?

MR MARTIN: Not having access to the Tribunal's wealth of expertise in pricing matters, I cannot give you a definitive answer on that, but I hope that you will be able to give us a good answer on that in due course. I think it is a reflection of currently public attitudes. I don't think people would accept a price for recycled water that would be, for instance, equivalent to drinking water prices.

You could argue, for instance, in the case of dual reticulation schemes, where there is no alternative to use, why should the recycled water price be any different from the drinking water price, given that it is not a case that you can choose to use drinking water on your garden, or for other external purposes, when there is only one set of pipes available for outdoor use? I certainly see that in those dual reticulation schemes it may be the case that you could argue there not be a discount price. I think a realistic assessment of the politics of it would be that at this point in time it would be very difficult to charge people a rate for recyclable water that was not discounted from the drinking water prices.

MR WARNER: I think you have covered the other part. We touched on some issues dealing with environmental flows and things like that this morning, particularly where tertiary treated effluent might be put into rivers and taken out downstream by other users. Do you see problems with dewatering rivers if effluent is taken out, and how do we guarantee that existing users of those sorts of systems for irrigation purposes actually have their rights somehow preserved?

MR MARTIN: I think theoretically, yes, you could argue that there is a risk of reducing flows where STP flows form an important part of the creek or river flows. I think it is unlikely that you would be talking about the sort of quantities being recycled that are going to have a significant effect, and it needs to be borne in mind that a large part of Sydney's effluent is actually discharged into the oceans. This represents no benefit in terms of environmental flows or for other water users.

I think one of the advantages of increased recycling,

just in terms of taking pressure off potable water supplies, is opening up the possibility of environmental flows from Warragamba Dam and some of our other storages. Our current consumption pre-restrictions was about 630 gigalitres, which is already 30 gigalitres in excess of the sustainable yield of 600, but that sustainable yield does not take into account the environmental flows. The environmental flows expert panel indicated that they would consider approximately 100 gigalitres per year is an appropriate quantity. The actual environmentally sustainable yield from the present system is 500 gigalitres.

I don't think you are talking about quantities of water, when you take it from the inland STPs, would be such to critically dewater, as you put it, those inland systems but I think there is certainly the benefit of wide-scale recycling in that it opens up flows from Warragamba and Nepean storages

MR REID: You raised the important issue of auditing. How transparent do you think audit process should be and how do you see it operating?

MR MARTIN: I'm not quite sure of the question

MR REID: As far as the approach to the auditing is concerned, given that obviously some of these negotiations, say, between the water agency and a large customer that may be done as commercial in confidence, I'm wondering about the transparency of the audit process and the publication of outcomes.

MR MARTIN: I think the agency should be required to submit to the Tribunal the application of their methodology. There may be some commercial in confidence issues, but I don't think they would necessarily be insurmountable. If there is a methodology that has been set by a public process and it is public knowledge what that methodology is, I don't think it should be particularly sensitive how the agency has applied it, unless it happens to be that they haven't applied it correctly, in which case it might be an extremely sensitive issue. I think that the auditing of that should be a similar process that the Tribunal uses for auditing compliance with licence obligations.

MS CIFUENTES: If the final price that is negotiated between the water authority and a large customer is satisfactory to both parties, why should the Tribunal then concern itself with whether the methodology has been applied or not?

MR MARTIN: I think the issue there should be in terms of customer protection, to ensure that the customer has not been disadvantaged by an incorrect application of the methodology.

MS CIFUENTES: But if it is a large commercial or industrial customer like BlueScope, and it has presumably invested a lot of resources, it is satisfied with the outcome, should it then be up to the Tribunal to reopen it and presumably have to do a full investigation and then say, "Sorry, the price isn't acceptable to the Tribunal," notwithstanding that it is acceptable to the two parties? I can understand why the Tribunal might want to become involved where it is a small customer, say a residential development, and we might be interested there, but why in a commercial negotiated price situation?

MR MARTIN: I see no reason why the methodology that the Tribunal issues couldn't allow for a degree of that. I think it is important to ensure that if there is a factor of negotiation between the agency and the customers as to what the appropriate price should be, there must be a process by which they determined that has occurred and it should be possible to show how that has been achieved. That is the difference I see between the Tribunal setting prices directly and the Tribunal having a role in providing some oversight to the agencies setting their own prices with customers using the methodology. I think the methodology should be there essentially to underpin protection of customers who might not necessarily be able to protect themselves.

MR COX: Thank you very much.

MR COX: We will now move to the Water Services Association of Australia.

MR PICCININ: Claude Piccinin. I'm the deputy executive director of the Water Services Association of Australia. I would like to thank the Tribunal for the opportunity to make this presentation. I will not be breaking new ground. In fact, I will be virtually resonating what Hunter Water and Sydney Water have said. What I really want to keep emphasising is that when we talk about recycled water, we're not talking about a homogenous product; we're talking about a suite of fit-for-purpose products that vary from better than potable water quality all the way down to barely treated effluent.

There have been many schemes right around the nation. However, it must be emphasised that to date the focus has been on addressing the technical issues and the product line is maturing to the point that it is now high time to look at the commercial issues arising from the product. It has to be recognised that an awful lot of things that have happened up until now have been ad hoc arrangements and not reflecting necessarily commercial solutions.

This chart shows the growth of recycled water used in the capital cities between the years 2000 and 2005. What it shows there is that Adelaide actually recycles a heck of a lot more water than other capital cities, and it shows Sydney in a rather bad light.

I show this chart, because I want to make the point that it should never be shown at all, so please don't repeat this mistake, and not just because Sydney Water pays a quarter of my salary, but because it misleads rather than informs.

If you look at the volumes of recycled water that Sydney Water handles, it is almost of the same order of magnitude as Adelaide Water. More importantly, the quality of that recycled water is a heck of a lot more impressive in terms of reducing potable water use and also irrigation water use. An awful lot of the water that is actually recycled by Adelaide Water does not lead to reductions in potable water, or even, in some cases, irrigation water. So, really, those kinds of bar charts should never be

shown.

If we're going to be talking about any kind of pricing, I think the kind of objectives that pricing structures ought to look at is revenue adequacy being provided to who ever is undertaking that project. It should be relatively simple and transparent, it should lead to efficient outcomes, equitable outcomes, and the COAG objectives with respect to pricing for recycled water is they lead to a sustainable solution, both from the environmental aspect and also from the financial aspect.

If we look at recycled water, there are benefits. I think both David and Kevin Young alluded to the possibility of deferring augmentation both on the water side and the wastewater side. It might lead to a lower impact on the environment for disposal to either rivers or ocean. It does lead to better resource utilisation which has benefits. Some of the recycled water has additional benefits in terms of nutrient contents, if they are provided to agriculture.

If there are targets in terms of recycled water, there is the additional benefit of actually meeting those targets. As to whether those targets ought to exist is a moot point, and one that I will leave to more sophisticated minds than myself.

However, on the cost side, it has to be recognised that quite often recycled water is associated with upgraded treatment, and that has costs. Distribution and storage, that point has already been made by others as a cost, and energy. Water and recycled water is extremely heavy. A cubic metre of water weighs a tonne. Shifting that around costs money, and essentially that is due to both the pipes but also to energy.

Recycled water also has additional monitoring cost. If you are talking about residential uses, you have to make sure that there are no cross connections for no other reason than to protect yourself from any legal considerations.

In any distribution of recycled water to customers, you need to understand there are going to be substitutes and, therefore, whatever it is, whether that substitute is potable water, or whether it is irrigation water, in any

pricing setting you need to bear in mind what alternatives there are.

At the same time, however, there are avoided and joint costs that need to be taken into account. It could be water and wastewater treatment, or it could be the joint costs of corporate overheads, and it is a question of whether you put that on to water, or whether you put it on wastewater.

But the other thing that is of key importance in recycled water is that it does not necessarily have to be done by the incumbent utility, and that is where things like third party access and sewer mining arrangements are extremely important. In any kind of pricing both for water, wastewater, but also for recycled water, you don't want to tilt the level playing field so that you distort the signals for entrants into the market.

We undertook an analysis of pricing principles for recycled water. What we came up with was essentially an efficient pricing band with a floor price of the incremental cost. However, if the targets are imposed on you and there are no attractive recycling schemes, you might have to actually go below that incremental price to meet your target, which is why I am extremely cautious about imposing targets, particularly if those lead to people being forced to go below that floor price.

The ceiling price is essentially the willingness to pay of the customers, and there you need to bear in mind the stand-alone cost of somebody bringing an alternative water source, or alternatively, the pricing of alternatives.

Essentially, what you need to do is develop a pricing structure which has a balance between upfront fees and ongoing costs due to the scheme. The way we looked at it is essentially you have a bundle of developer charges which could reflect avoided costs in headworks, or provide the funds for people who have alternative schemes. Volumetric charge is a cost signal to the customer and essentially tends to recover your running costs, again bearing in mind what the alternative water sources are.

Any costs that are not recovered, either through the developer charge or the volumetric charge, would be picked

up as a fixed charge as a balancing item.

As I said, we have published an occasional paper on pricing for recycled water, and that is publicly available. Please approach me if you want to see a copy of that. We also have two current projects that are a bit of a spin-off on that. One is developer charges and smart growth, which is to see whether developer charges funding could be modified to take into account proposals for recycled water.

The other one is to do with identifying wastewater costs. One of the aspects of that one is to look at, if you like, avoided costs, depending on where people access sewage along the way, or before a treatment plant, or after a treatment plant. It is actually not quite as simple as it sounds.

Conclusions: I think where we stand is that basically we tend to favour a methodology rather than fixing recycled water prices, and even avoiding a formula approach that actually tries to put a straitjacket. The reason for that is not only are the costs from an incumbent service provider different depending on what proposal is being put forward, but if you even attempt to say residential-type developments like third pipe systems are all going to be similar, and therefore you should be able to impose a formula approach, I would like to remind people that Rouse Hill actually saves about 35 per cent of potable water use through a relatively straightforward third pipe system.

But if you look at Pimpama Coomera, which is one that is being currently developed on the Gold Coast, that has the potential to reduce potable water by 84 per cent. So as these different products use different options, you have very different impacts, and therefore I would actually argue quite strongly against a fixed approach, and even a formula approach.

With regard to postage stamp pricing, I think an argument can be made eventually for that, but at this stage you would have to have the wisdom of Solomon actually to find your way through the plethora of different costs and different avoided costs, depending on what scheme is put forward.

I think that might be a light at the top of the hill 20 or 30 years from now, but I think it would require a

heck of a lot more than just weighing up the pros and cons. I think you would have to take medication.

MR WARNER: I take it under your formula approach you would have no objection to recycled water price being equated to the potable water price in those cases where water use might be mandated, such as toilet flushing, et cetera.

MR PICCININ: I think it has to have a reference to the potable water charge. I would see merit where it serves the same purpose. Why not? At the end of the day, I don't care whether I flush the toilet with Bollinger or whether I flush it with better treated effluent, as long as when I turn around, it is gone. It suits the purpose.

In an area where you are actually allowing outdoor use of recycled water during a time of restrictions, one could even make an argument that you are providing a higher level of service - I think that was some of the points you were making. If that is the case, one could theoretically argue that there is a premium to be paid for that.

MR REID: From a national perspective, is there any practice in other states that you think is appropriate and that we could learn from?

MR PICCININ: As I said, all the focus up to date has been on solving the technical issues, and I think the product line has got to a level of maturity that it is now time to really sit down and work out a commercial structure for these projects. I'm afraid you can look around as much as you like; all you will see is despair and gnashing of teeth. You will not find wisdom.

MR COX: Thank you very much for your presentation.

AUSTRALIAN GASLIGHT COMPANY

MR HARVEY: My name is Chris Harvey. I'm the manager, regulatory development, AGL. I have with me Linda Gyzen, who is manager, business development. It is evident to me that we're covering a lot of common ground, and we're here as, I guess, the representatives of private involvement or interest in involvement in recycled water. We're new to the game. There is a lot of common ground, common themes and alignment of views in a lot of cases, which we find heartening. It seems to me that in a lot of cases we have a similar story from a different perspective.

We are taking a number of the things as given. Why is AGL here? I guess government policy is turning in the direction of greater involvement of the private sector in providing public services like water and, in particular, recycled water services and that has attracted AGL's interest. Our interest in particular is associated with the infrastructure side of things. We do not see ourselves being in the retailing side of water at all, unless it becomes really necessary. What we are good at is building and operating infrastructure. We obviously have a lot of similarities in the sort of infrastructure that we are used to building and operating as we see in water.

The other reason is that, with that private involvement, the policy settings and the pricing for public utilities is going to have a fairly significant impact on the viability of private sector involvement. We are here to make our comment and hopefully, in doing so, that is a positive for the public sector bodies who have been presented today.

The story that has been presented today - and again we are new in this business, so we like to do simple pictures, and this is a simple story. This is about the whole picture of integration, which we want to first discuss today. We really just wanted to highlight a couple of things.

For us, the whole issue of substitutability of potable and recycled water is key to this game. That has led to a number of conclusions that have come out today. One which we would support is that you cannot just look at potable water and water as separate issues. You have to look at

pricing together.

We certainly support the view, when it comes around to the next review of potable water pricing and sewage services, that you consider including the matters associated with recycled water. I guess that will get to things like the avoided costs, the impacts on prices that Chris identified earlier.

The other key is the one that has already been identified about cost of feedstock. It is a nice, clean term, is it not?

We want to be hopefully not too controversial but perhaps a little. This slide is about long run marginal cost of potable water, because this theme has come up earlier in the day. Recycled water fits within the context of potable water. That is why this slide is so important.

The substitution point - potable water is going to set the context for pricing of recycled water. We have a bit of a conundrum. This is a Sydney-centric focus; it may not apply to places like the Hunter, which seems to have a better supply situation than Sydney and the other regions, but the IPART paper makes it clear that in setting potable water prices, the usage charge is equal to the long run marginal cost of supply. That is a difficult equation, from what we can tell, looking at the long run marginal cost is. We are looking at the next cost of supply and what the options are.

On the one hand we have that, and then on the other hand we have the metropolitan water plan and the most recent update in February, which says that recycled water is critical to achieving a sustainable water supply. Then, on the other hand, we have considerable evidence that recycled water projects, with perhaps a few niche exceptions in the Hunter and Wyong, we are not sure about them, are clearly uneconomic. Certainly the bulk of recycled projects are not going to wash in relation to costs. We have this conundrum: how can we be sure of the supply at the current long run marginal price and, at the same time, not be able to make the rider, those projects do not work.

Now, what it suggests to us is that we really have to get a handle on the long-run marginal cost and we recognise

the difficulties around that topic for IPART and others but we want to encourage those who are part of that to pursue that because that creates the context in which I think Dave Evans made the point that if we got the potable water price right, a lot of recycled projects would fly without a lot of help.

Seeing as we don't have a long-run marginal cost or a current set of prices for usage that will support recycled projects, what do we do? I have two slides which cover that topic. There was a question of whether we started with cost recovery first or pricing first. Here is a view on pricing, then we will come back to cost recovery.

Here are some fairly simple principles. If you read our submission they are set out in the covering letter and later in the submission. We have a simple view, maybe it is too simple because we have not been in the water business long enough, but on mandated third pipe use we think that the simple answer is to set the usage charge at the same usage charge as the potable water price. There are no distortions. Either way, it has the other beauty of dealing with postage stamp issues. You deal with that all in the one breath. If it is not set at that, we think where you have got dual pipe systems it should at least represent the cap for those prices. It provides a very simple solution for that and it also removes the distortions that TEC identified by overuse of recycled water.

On the other hand, for discretionary use, picking up another theme, and here I think we are talking about mainly industrial users, the retail price should be just a matter of negotiation. It allows for two factors, the factor of different valuations for different qualities of water, so boiler-feed water, which is highly valued, a lot of recycled water will be at that quality, it is quite valuable. Then for those users that don't value it as highly, we get a price that actually maximises the recovery within the price and removes the need for additional recovery. The issue of different quality of water has been raised and different prices can be reflected according to the circumstances of the user.

Turning to the other side of the equation, if we have set the price that way in the context of potable pricing, and the point about where we have got discretionary use,

the potable water price will set the benchmark, will be the reference point for negotiation of prices for large users.

On cost recovery, this is probably a slightly simple story and it does not get into the issues of the details of calculating the costs, but we see costs as being currently recovered through usage charges and could be recovered through what Chris Guest and others have mentioned, avoided costs, and that also includes external costs, externalities, that where those things aren't fully able to be recognised there should be scope for recovering within the water customer base. I'm not quite sure how this works but I guess I see this going into a second block of a tariff system. Where there are distortions in prices and cross-subsidies inherent in the pricing, there is an opportunity there to fill in the gaps on those cross-subsidies.

Of course, finally, the use of subsidies and grants, and that I think has been discussed, there was a question about the best way to deal with that. There is a further question. Unfortunately we are just introducing things that are not quite the stuff that IPART would deal with when it comes to pricing, but it is significant to us about achieving the most efficient solutions for recycling and choosing those that produce two effects - the lowest long-run cost, lowest sustainable cost for recycled water and the maximum reach for recycled water given that we have the supply demand balance. We are wanting to put forward the issue that it is important that the policy set not only the right price incentives, when see in this two types of solutions, large, centralised production, which is likely to produce the greatest efficiency and economies of scale, supply through networks, and it is important that the policy settings, there are a range of them, actually properly reflect the benefits of those compared to stand-alone on-site projects. At the moment we perceive that there is actually a skewing of the playing field towards the stand-alone projects which is not in the best interests of the community.

Just to put it simply, in one case we may have let's say fairly significant industrial users who can recycle their own water and if they do that, that is great, the community has gained. But the alternative might be a single recycling plant, a sewer mining plant, that can not only supply those customers but can supply a

plethora of others. The advantage of that solution for the community is that we get economies of scale associated with a much larger project and significantly greater reach to users of recycled water than otherwise they would be able to install in their projects. The point here is that if we have the left-hand side then we don't have the right-hand side, that if those projects proceed without having evaluated the alternative then the right-hand side can't occur. I have to admit that in some sense these are the sort of projects we see ourselves involved in, it is self-serving, but it is a proper policy question.

So in summary, we see that a portion of recycled water costs will have to be recovered from the things that we talked about, avoided cost, redistribution across the customer base and subsidies, but for discretionary use we think negotiation is the way to go. What it does is allow the need for that transparent process about identifying the avoided cost contribution that you recover from a public utility and a need for policy settings that ensure that the large scale projects that are likely to have greater community benefit don't miss out. Thank you.

MR COX: Thank you very much. There is now the opportunity for questions to AGL.

MR WARNER: Talking about pricing structure, we will come back to this this afternoon, but do you foresee that there are any competitive neutrality issues that might arise out of different sorts of pricing structures we should be aware of? Are some pricing structures going to be more beneficial to a new entrant such as yourselves or will there be structures which impede that?

MS GYZEN: One of the other speakers was talking about this higher variable component that is possible. I would agree with that point, that to try to give the recycled water projects this high chance of happening, and that relates more to potable water pricing, but it needs to be as high a variable component as possible. That is important.

MR WARNER: The second question, you say that the potable water price is not enough to get recycled water over the line. Do you have a view as to what the level of price should be?

MR HARVEY: That is a really big question because we have

been trying to work it out ourselves, but I think we think it is in excess of $2. There is obviously a range. Today it was discussed that there is a curve of costs depending on the nature of the project but we think that probably the bottom of the curve is about $2 a kilolitre.

MR REID: Just one question. There has been discussion with large scale or large customers whether the Tribunal needs to set a methodology or whether it should simply vacate the field and leave it for open negotiation between the two parties. Do you have a view on that?

MR HARVEY: This is a point we discussed this morning. When it comes to the water price, I don't think there is a need for the Tribunal to be involved. When there is the consideration of avoided and external costs there is real value in having some guideline that guides the negotiation on that. I can understand the issue of the confidence from a public policy viewpoint that that is all being done in a kosher manner. I guess, not wanting to answer somebody else's question, the reason that is important is because if those costs then are incorporated into a future price review it is understandable you would want to know that they are the appropriate costs.

MR COX: Thank you very much. Just before we break for lunch, I would like to invite people sitting in the back or the sides to ask a question or make a comment, if they wish to do so, and also invite members of the panel perhaps to take note of what is said so we can deal with any points this afternoon. So I invite people in the back, if they want to make a comment, to now do so.

Okay, if there are no questions or comments, we might return to you perhaps at the end of the day.

LUNCHEON ADJOURNMENT

UPON RESUMPTION:

WORKSHOPS

THE CHAIRMAN: Ladies and gentlemen, we might resume and move onto the workshop sessions. Before we commence that, I would just like to say a few words about how it will be conducted. The Tribunal secretariat has identified four key issues to address. They will introduce each topic with a short presentation, outlining the issue and then also posing some questions relating to the issue.

After each introductory presentation, each organisation at the round table will have the opportunity to speak about the particular issue that has been raised by the secretariat. We have a limited time for discussion, and lots to cover, so I ask the responses from each organisation to be as concise as possible and speakers not be interrupted during the time they are speaking.

After that, we will have general discussion among members of the panel and also comments and questions from the floor. Having done all that, we will try to summarise areas of agreement and disagreement, to the extent that I can do that, and I just remind everyone that a transcript of the proceedings is being taken and that will be available on the Tribunal's website by late next week.

We will move onto the first of the workshop sessions and I ask Richard to introduce that.

MR WARNER: Firstly, just by way of an introduction, we have heard a lot from people who have made submissions today and presentations. They have highlighted a number of key areas that need to be resolved as part of the review, and we thank you for that.

This workshop session seeks to further clarify those issues and to start a process of seeing where there is consensus and where solutions might lie. And certainly there is an opportunity for stakeholders to discuss their views and opinions before the Tribunal and, as Jim indicated, we will also be allowing time for any comments from the floor.

The issues for discussion today are four: Should prices for recycled water and sewer mining be regulated -

we have touched on some of that this morning; what is the most appropriate pricing approach for recycled water; looking at treatment of cost elements and price structures; and also trying to get on to sewer mining arrangements.

In relation to the first issue, should prices for recycled water and sewer mining be regulated, some of the issues that need to be considered have already been drawn out. Currently water agencies and potential customers negotiate recycled water prices. We have heard some people say that that should continue, and certainly I am not sure the Tribunal wants to upset existing agreements. Also large customers and developers may have enough bargaining power to strike mutually agreeable prices. We don't necessarily want to be involved in that process.

Price regulation aims to ensure efficient service provision in the absence of competitive markets and to avoid abuse of monopoly power. That is why we are here. The Tribunal needs to consider whether these conditions apply to recycled water and sewer mining.

So the questions I have put are, do the prices for recycled water need to be regulated, if so, in what circumstances; is there a case for regulating the price for some customers and not for others; and what are the implications of price regulation in the event that private sectors enter the market. Thank you.

MR COX: We will take questions and comments on those particular issues, of should recycled water an sewer mining prices be regulated. It might be appropriate to ask Sydney water to start.

MR EVANS: Thank you, Chairman. I guess this process is a bit similar to other areas that IPART potentially gets involved in and I think goes to what I understand to be the heart of the legislation, or your riding instructions, which are to regulate monopoly prices. Therefore I think, in the sense that we are saying there would be some methodology for price relationships, perhaps what we need to do is work out what will be the criteria that will be used to determine if there was a "monopoly relationship", that is, was there an alternative service that could be provided, are the parties big and ugly enough to look after themselves, et cetera.

I think given that you are going to end up regulating at least some prices but there may be others where it is a bilateral deal and it could just be dealt with, the only real way of resolving what will be the spectrum in between is to come up with some criteria as to where you believe the monopoly price or monopoly exists and then we can all take it away and say, that is part of the criteria we are using for the whole exercise, because there will be other criteria established, cost attribution and that sort of thing, and we will run off that. Otherwise I don't think this has a "yes" "no" answer to it. It will depend on the answer, therefore it comes to, what is it going to depend on, here is a list of criteria, parties go away based on those criteria and proceed and if someone is unhappy that the criteria has been misrepresented, then whatever recourse they might have to your process could run.

MR COX: Thank you. We will move on to the Water Services Association.

MR PICCININ: From what I have heard today, most presenters agree that a methodology is an appropriate way. If that methodology does span the instruments of developer charges and volumetric prices, et cetera, then certainly in terms of avoided costs most of the parties would be big and ugly enough to negotiate within that methodology something that was to the mutual advantage of society. However, as has been indicated by David, there would have to be recourse to an umpire in the event that that methodology was not adhered to, whether that recourse is an audit approach by the Tribunal or some other instrument. I would have thought that auditing would have been more than sufficient.

I think there was a discussion this morning about the level of transparency of that audit and I would say that that level of transparency ought to be limited to the fact that the Tribunal has undertaken an audit and what the findings of that audit are. The actual releasing in the public environment of commercially confidential costs by either the incumbent service provider or the entrant I believe is inappropriate but that would be basically my position.

MR COX: Thank you. Gosford?

MR DIFFEY: If we covering all three, I think our general

consensus is that we are very happy to have IPART act as the regulatory umpire and, as seems to be general agreement, set the methodology for a recycled water price with the rider, along the question Chris raised before lunch, if you have got two parties that are big and ugly enough to come up with an agreement they are both mutually happy with, that should be a right that the water authority and that party have.

With the third dot point, what we have all talked about here is generally the concept of cost recovery. There has been no implication necessarily that the water authorities will make a profit margin on the water recycling price, so the third dot point I guess needs to take into account some sort of profit margin allowance if the likes of AGL want to get into the business. They will not get into the business if they just recover costs, so maybe there has to be a separate methodology that is methodology plus X that would cover the private sector getting into the market.

MR COX: Thank you. Total Environment Centre?

MR MARTIN: As I said this morning, we support the approach of having the Tribunal set a methodology for allowing the agencies to establish, set prices, and certainly having an audit process which ensures that is being complied with. Certainly we recognise where you have large customers that can negotiate a mutually satisfactory deal there may be some value in allowing them to continue to do that, but there needs to be protection of smaller customers who might not be in a position to do that. It would be desirable to have a set criteria that they can be confident is being followed to ensure that the price that is set is fair.

MR COX: Thank you. Hunter?

MR YOUNG: Our position on this is that we do think it should be regulated, that there are strong links between the recycled side of the business and the wastewater side. It is there, you regulate on water and wastewater and the links mean I think that with a growing business it just means you must regulate on the recycled side. The other advantage for us is that one of the great things about having a regulator is it allows us less flexibility in deal doing. We are always having people coming in and saying,

"Well, let's roll our sleeves up and do a major deal", and having a methodology means that as an organisation we say, "We have a methodology which equals best outcome for the community", so that is something that is fantastic for us to fall back on.

The other issue on monopoly power is whether it is monopoly power for us or in some cases the flip side is monopoly power by a major user in a particular area that says, you are under extreme pressure to recycle, we are the only major person you have got, therefore we are driving our monopoly power back at you, is where the methodology comes in strongly.

I think they are the key points.

MR COX: Thank you.

MR GRANTHAM: If you look at where the water industry is coming from, particularly in relation to the four agencies you are regulating currently, development occurred because as a condition you had to provide water and sewerage and there was a monopoly service provider for that. From that angle, clearly if effluent reuse is provided under those circumstances, and the sort of circumstance I am talking about is a dual supply system, if that is provided in lieu of say putting in the basic requirements then clearly you are under that same situation and from my perspective we say that should be regulated.

I am not quite sure whether you could apply the same logic to someone who elects to connect to recycled water when they clearly have an alternative supply for a potable water supply. Is that then competitive service, are we talking about a monopoly market, so I think there are a couple of issues that should be explored there. Regardless, I would see advantage to council in the price being regulated but I think there might need to be more than one method of regulation to cover possibly different situations.

MR COX: Thank you very much.

MR LISTOWSKI: I do agree with my predecessor speakers. I believe there are some advantages in having it regulated, simply from the point of view of consistency across the many areas and customers, consistency in the market and consistency in regulating the pricing structures. I truly

believe that price regulation should not discriminate between the customers and should be based on a solid methodology that should be transparent, auditable and equitable. That is just adding to that.

MR COX: Thank you. AGL.

MR HARVEY: In looking at that question there are a lot of links for us to what is happening with reform in energy regulation and the whole question of the appropriate form of regulation in connection to market power and it seems to me that in considering that question there are a few things that impact on market power. One is the potable water price and if that is there then that provides a significant restraint on market power. Obviously the size of the entities and negotiation.

We reiterate what we said, where there is mandated use it is clear there will be some form of regulation because there is dominant market power. Where it is not mandated, the potable water price is a very significant restraint on any exercise of market power so I don't see at that end of the equation there is any need for it. I think it is really where you have got a non mandated arrangement, it is at the sewer mining end, the credits that would apply to that, there is some market power, some information, a symmetry that needs to be constrained, but I think there is an issue also of scope for sensible negotiation depending on the size of the parties. There might be scope for either a monitoring arrangement or an arbitration arrangement and I think we are talking about monitoring and audit, but an alternative would be to have it in the context of a negotiated arbitration where possibly the Tribunal did that.

MR COX: Thank you. PIAC.

MS FREEMAN: If can I quickly introduce myself. Elissa Freeman, I know I have met some of you before but this is the first time I have been involved in such a process and I have really enjoyed this morning.

In terms of the question about price regulation, clearly from our perspective there is a strong need for price regulation. The point I want to make is that there is a general consensus for the need for price regulation

around these services, particularly where it comes to the small end of the market. As we see it, where schemes are mandated or related to non discretionary household use, that is clearly within the realm of a monopoly service that is provided to households. When that scheme moves out to the more discretionary areas then we see there is some scope not in the need for regulation but certainly in the form of regulation.

In addition to that, it is not just recycled water that is being regulated, it is the entire network, and if we are going to change how it fits into the scheme we need to understand it forms part of the network that is regulated and on those grounds regulation should continue.

MR COX: Thank you. Any further comments on this issue? It seems to me that most people support regulation for small customers or where there is a mandatory requirement. There is more debate I think about larger customers. Most people here seem to think it would be better if that process of negotiation was guided by some principles or by some arbitration procedures. Have I got that right?

MR KEVIN COX: Kevin Cox, and I am from a company called edentiti. I don't see the need for any price regulation of recycled water. The reason is there is no monopoly power because recycled water will be more expensive than potable water. There is always that alternative, hence with recycled water there will not be an issue of price gouging.

I don't really see the need to have to regulate the price of recycled water. The issue really is how you actually fund the recycling projects and that essentially means some way of being able to get money, if you like, from potable water so that you can use it on recycled water. That seems to me to be the base of the issue associated with recycled water, not the side of the price of recycled water but the side of how you fund the recycling projects.

MR COX: Thank you. Richard, do you want to ask anything else at this stage? If not, the next issue is being introduced by Kate Drinkwater.

MS DRINKWATER: The second issue for discussion today is what is the most appropriate pricing approach for the price of recycled water. The issues paper identified several

options for the Tribunal's approach to regulated water pricing and all of the presentations today have touched on these.

There seems to be broad agreement from people here today about the pricing approach, but I think that the devil is going to be in the detail for developing and applying any approach to recycled water pricing.

For example, people have talked about setting a methodology, but what we want to nut out is what does that really mean and how prescriptive should it be, so is it appropriate to have a formula to use as a methodology or guidelines, and that also links into the auditing process.

Also, should different customers be treated differently when determining the prices for recycled water.

So we have these three questions here: are there situations where postage stamp pricing may be the preferred approach; should the Tribunal determine a methodology or would guidelines be sufficient; what are the issues surrounding pricing arrangements for agricultural recycling, because there might be some different issues, and can the same approach be used for agricultural recycling as for other types of recycling.

MR COX: Hunter, would you like to start off this time?

MR O'HEARN: Our view is that, firstly, we believe that IPART should regulate recycled water prices, so if you have the view that it should be regulated, we need a methodology. Otherwise, we are going to have the issue of how do we get the money recovered.

So if IPART are regulating all our prices and we don't regulate recycled water prices, when it comes to put our submissions in for ongoing water and wastewater charges, there will be an issue then about how do we justify the money that we need. So we believe that if we are going to regulate recycled water prices, we need a methodology.

We feel it would be beneficial to have some guidelines on the inputs to that methodology, and we propose that it would be beneficial to have flexibility in relation to packaging the mix of the total price that has to be recovered, particularly with the large commercial

customers.

We have talked about the change that can happen in industrial relations and then investment horizons can be different, so we think that is an important consideration in how you might package it - flexibility there.

Turning to agricultural recycling, one of the issues there is that often the price of the alternative to recycled water is quite low. We have a number of small agricultural users and we believe we need to have a low fixed fee for them, because the alternative for them is low, and otherwise they probably will walk away. But there is some benefit in them using the product, so we propose a small fixed fee for small agricultural users; we might have tiered levels for fees.

Are there situations for postage stamp pricing? Our position is that in these early stages, until recycled water is more widespread, we believe it should be on a case-by-case basis. It doesn't make sense to have postage stamp pricing on recycled water at the moment, but over time, as recycled water is more common, more commonly used, maybe that will be the opportunity to revisit whether there is a case that can be made for postage stamp pricing.

MR YOUNG: This is not to start an argument with my Wyong colleagues, but on the universal application of third pipe solutions and whether there should be postage stamp pricing on that, I can see some logic. Paring that back, I think our argument would be that the decision to do third pipe solutions in an area should be on an individual, case-by-case basis.

We wouldn't want to do postage stamp pricing in its broadest sense on the basis that we would be doing some schemes which were uneconomic and not good value for the community and balancing that against economic schemes and saying, "The postage stamp price is less than the potable water price before it gets up."

The risk we see on that, I think, in third pipe is that the competition there is BASIX. In some areas where you have a third pipe solution which is a long way away from the treatment plant, the BASIX scheme is the best on that individual, case-by-case basis, and therefore the logic should be that that is what occurs.

If we put a third pipe solution in at a higher cost when the right solution is to collect rainwater off the roof, I think we are losing the value. If we look at the long term and if each of those schemes on a case-by-case basis is the right solution, I think the Tribunal could address the issue in the longer term as that grows.

If the fundamentals are right and if we are making really good decisions, then the issue of whether there should be a postage stamp price I think could be addressed, as long as we are making good decisions first.

MR COX: Thank you. Wyong?

MR GRANTHAM: I am not sure whether we are talking about the same definition on "postage stamp price". I think, as it is applied up on the board there, it is a price that IPART sets. That certainly was not my intention.

Certainly from the discussion I have heard around the table I would say that what is required is a methodology that is flexible enough to allow large industrial or large users to be handled and which allows the agency to establish a price at the most appropriate size for what it is doing.

I know we went through this whole issue in terms of looking at sewerage schemes and how we would develop developer service plans for sewerage schemes, whether they would be on a pump station catchment or a sewerage treatment plant catchment or on a whole system catchment. I know the methodology we came up with there allowed the individual agencies to go down the most appropriate path.

For effluent reuse, I would see a similar principle, and that is that the methodology needs to be sufficiently flexible to allow an agency to develop a price on a scheme basis or on a number of scheme bases as the average price, and I think that would suit, from the discussion I have heard, probably most of the agencies around the table. On agricultural recycling, I would say the same principles would apply.

MR COX: SOPA?

MR LISTOWSKI: I believe the pricing structure methodology

will provide or give a good signal of a uniform approach to customers, and I think, in a way, it will protect the customers as well.

On the postage stamp issue, I believe it is more socially acceptable to have a uniform price and a postage stamp approach. It may be perceived in current times that because the recycling schemes are very sporadic and are quite isolated, the postage stamp may not be applicable, or that it may be necessary to apply some different approaches.

But let's move forward, say, 10 or 15 years, to when we have large treatment plants and huge recycled water supply facilities. Those boundaries will largely disappear and then the postage stamp - it is the same thing with regard to drinking water - will probably eliminate many of those differences and it will be much more uniform. Therefore, I think the postage stamp methodology is probably more appropriate in that regard.

MR COX: Thank you. AGL?

MR HARVEY: Thanks, Jim. Where postage stamping is appropriate, I think, is where you have the mandated dual pipe system. There are equity reasons, and that means that all residential users get treated the same, regardless of their water consumption approach, whether it is potable or recycled; their total consumption is basically the same cost across the community.

I think there are also economic considerations where the drivers for use are reflected back to the supply; I think that is going to be more economically efficient at a macro level. It is going to reduce distortions on water consumption. We are going to see water for the residential user as water, whether it is recycled or potable. The total consumption isn't always directed to the potable users. We just look at the total cost of water to the user and there is no distortion with that application.

I think all of that depends on Kevin's point about good decisions being made about whether third pipe is a good solution. I just assume that that sort of approach is being made, that we are actually making good decisions about what to invest in for recycled water.

But to us it seems fairly clear that postage stamping where you mandate recycling is clear. You will get implicit postage stamping plus or minus where you have a negotiated outcome anyway, because the potable water is going to be the reference point and then the pluses and minuses will relate to the value of the recycled water relative to potable water.

As regards guidelines, we think that guidelines are appropriate - again, repeating ourselves - where there are avoided and external cost credits to be estimated, and there is probably going to be a need to have some sort of guideline where there is some sort of reallocation of costs back into the water customer base.

MR COX: Thank you. PIAC?

MS FREEMAN: I agree with a lot of the comments that AGL has made, and I think when you are looking at a mandated dual pipe system in the residential sector, there is a good argument to be put forward for postage stamp pricing.

My understanding of postage stamp pricing is it that introduces a socially efficient cross-subsidy to ensure a safe and efficient provision of the network. It seems to me that where you are mandating recycled services on a non-discretionary basis into households, it does fall within that criteria, and it is about ensuring that the network as a whole is both safe and efficient.

I think it does rely on good decisions being made by the water authorities, but I can't see that it precludes those decisions taking place.

MR COX: Thank you. Sydney Water?

MR EVANS: I hope the comments I am going to make are relevant to this question and not to a later one.

MS CIFUENTES: So do we.

MR EVANS: As Kate said, there is going to be a lot of devil in the detail. There are things like, "Is postage stamp pricing a good idea?" "Well, if mandated, maybe; if not, perhaps not." But I think there is a prior question to that, which is, "Should you mandate something like that?" The whole basis of BASIX at the moment is to allow

choice to occur. So I think there are some pre-emptive policy considerations which have to be made, which is the point I think Kevin was getting at, as to is it a good idea to mandate.

Putting that to one side, I think we have to get into some of the detail, which is we have some precedent of how IPART does things now, which is the developer charging model. Whilst it has some conceptual complexity, it has been reasonably well developed and is understood by the development community and by ourselves.

It is basically the building-block approach. It is clear that you have certain costs that you have to, as it were, account for, the cap on operating, and you could add to that the conceptual issues of avoided costs, which we have discussed today, and that leads you to the question of, therefore, what sort of level of cost recovery and aggregate might be appropriate, which you then can assign to your developer charge, your annual access charge, if you are going to have one, and your usage charge.

So you then go to, "Well, how do we allocate between the three?", and I suppose we try and run some efficiency arguments there, which is why I don't necessarily support postage stamp pricing. You try to get to what was an efficient price for recycled water in the circumstances of the particular recycling scheme.

As I said this morning, in some cases the marginal cost of getting recycled water to someone's door is going to be very low, and you therefore wouldn't want to be saying to that person, "You must pay the postage stamp price"; you would be wanting to say, "We can get it to you over the fence from the sewerage treatment park for 11 cents, go for it," but someone else you might have to run it through 30km of pipes and it might be very expensive.

So I think, having determined the aggregate cost recovery position, you then have to allocate the cost recovery between developer charges, fixed charges and usage charges to reflect the marginal costs you are going to incur when people make a consumption decision.

There are a couple of complications with that which I think illustrate Kate's point about the devil being in

the detail, and I would just like to raise two to illustrate the point. First of all, costs incurred. It is often quite straightforward if you look at, say, engineering costs - "Will the pipe be this fat or that fat" - but there are other issues. There is a big issue, for example, on risk allocation and, therefore, the discount rates that should be applied. Is the risk of uptake of the recycled product high or low - and Kevin mentioned this morning about industry structure change, et cetera - and therefore, what discount rate should be allowed to the proponent.

Secondly, and this gets even more complicated, if the proponent passes that risk to the utility and says, "We will produce the recycled water, but we'd like you to sell it for us, please," how do we allocate risk in that situation? Most of us who have had dealings with large recycling schemes know how profound that risk allocation is. It is not only things like whether or not industry structure changes, but you get cross-connections that are very expensive to manage. Consumers may become unhappy or very happy, depending on how they are handled.

You get industrial relations. Nearly every major scheme I have seen has significant industrial relations implications for the user as to whether they want to actually take the water up. I don't think there is a union born that doesn't at some point seize upon the opportunity to say to management when there is a wage negotiation going on that they are very worried about the health effects of recycled water. So there is a big issue there about risk allocation which we haven't talked about.

There is then another issue, which is again a practical thing, again going to Kate's point about detail. A lot of recycled schemes for residential, not necessarily industrial, are rationally going to have a top-up of fresh water because you are not necessarily going to want to build a recycling scheme to cope with peak day demands. It is like a common factor of building any form of infrastructure: it is very, very expensive to build a recycling scheme which will cater for the hottest day when everyone wants to water their garden. Therefore, it is likely that in order to avoid very large costs you will have top-up of potable water.

In coming back to this question of how do you price

the marginal cost of water, you have to think about not only the marginal cost of the recycled water, but how are you going to deal with the fact that you will be topping up.

Having just thrown a few of those complications in, I want to come to my conclusion, which is that I think to progress this we need to sit down and do some quite precise case studies which would force us to put the issue through maybe a developer-charge-type methodology for perhaps a very straightforward mandated dual pipe or third pipe system, perhaps one that is not quite as straightforward and is more expensive or where the marginal costs are different because of long transport issues or something, and then maybe a large industrial one where you might be arguing that they are big and ugly enough to take care of themselves. I think we have to try to grind those three circumstances through to test the answer and then we can come back to answer some of these questions. I think otherwise we would just tend to probably end up repeating the same sets of principles.

MR COX: Water Services Association of Australia?

MR PICCININ: I agree with what David and others have said about postage stamp pricing. I think we are going down the route of the methodology. With English being a second language for me, I'm not sure what the difference is between "methodology" and "guidelines", but I know that when our board looked at our pricing for recycled water, they said, "Oh, we don't like 'pricing principle'; how about 'guidelines'?" The text remained identical, but we just called it "guidelines".

The issue of risk is incredibly important. In fact, in the Netherlands in the last two or three years there was a third pipe system and inevitably there was a cross-section - in fact, there were several cross-connections - and they were sufficiently bad enough to have illness, but thank goodness no deaths. As a result of that, the third pipe system was shut down and it came a traditional dual pipe system.

So the question of who bears the risk and how that is handled and the costs associated with it are extremely important and they can't be just swept under the carpet.

I do know that regulators don't like to look at different rates of returns associated with different projects. It is not attractive, and I can understand that, but that is something that the Tribunal ought to address early on in the shaping of these guidelines, or methodology, or principles, and come to a view, because if you don't handle it in the most delicate fashion, then people have to go down a different route, and that has to be made explicit. And the different route might be that you accept a line item which is an insurance provision. Whether you take up the insurance or not is a moot point, but somebody has to bear that risk.

MR COX: Thank you. Gosford?

MR DIFFEY: Gosford doesn't support postage stamp pricing for two reasons. One is because we are developed out, we are very, very unlikely - and certainly not in anybody's lifetime in this room - to see a third pipe type arrangement in Gosford. Therefore, the argument of social acceptability of postage stamp pricing just doesn't apply to us. We are going to have a series of industrial developments around that are likely to take up any recycled water options that Gosford embarks upon.

The second reason is geographic and topographic. Essentially, Gosford is a series of hills and valleys, and it is extremely expensive to move that tonne of water we have talked about around our little shire. As a result, there are vastly different costs involved in supplying what could be exactly the same quality of effluent from one spot to another spot.

Now, I accept Ken's argument that maybe if it is a similar quality, you charge the same price. We don't actually support that, because the cost could be vastly different to take it from Kincumber to Somesby, as opposed to Kincumber to Erina, or something like that. So on two fronts we don't support postage stamp pricing.

The issue of agricultural recycling again probably doesn't affect us too much because the only agriculture we have is up on the plateau, and basically they are all spear point irrigators sucking water out of Mangrove Creek Dam. So it is not really an issue for us.

MR COX: Thank you. Total Environment Centre?

MR MARTIN: In relation to postage stamp pricing, I think it may have some application within the residential reticulation systems, but certainly for other types of recycling applications, I don't think it is quite so applicable, particularly as you are often dealing with a different product from one scheme or from one customer to another.

Unlike the case with drinking water, where everyone is getting essentially the same service and the same product, in the case of recycled water, it could be a different product for each customer, and different standards of water. So different prices are probably appropriate in those circumstances.

As for the approach the Tribunal should take to regulating prices, as I mentioned in my presentation earlier, we support the development of a methodology for the agencies to employ in setting prices, but for there to be an audit role for the Tribunal in ensuring that that methodology has been correctly applied.

In relation to agricultural pricing, I think one point that needs to be made in addition to those that have already been made is that agricultural recycling does not carry the same avoided costs as recycling that involves potable substitution, so certainly in calculating prices for agricultural recycling you would need to take into account that the avoided costs are much less so that a different price would be appropriate in that case.

MS CIFUENTES: Just a quick clarification, when you talk about an audit role in that specific context, do you mean a prior approval role, or --

MR MARTIN: No, I mean a case of the agencies submitting their deliberations and their determinations on prices, and the Tribunal having the capacity to indicate whether that is appropriate or whether the methodology hasn't been followed, and if it hasn't been followed they should be asked to do it again.

MR COX: Are there any further comments on these issues?

MR HARVEY: I just have a brief comment on David's comments about risk allocation, and it probably is off the

topic and we are probably the relevant party, but I think it is a really important issue. I think it is really up to the market. I think it is a matter of looking at all of the risks because clearly for the utility there are some offsetting factors that reflect an internal hedge and there will also be issues where there are network solutions of diversity of customer base, but it needs to be properly considered.

MR YOUNG: Just to add to that, too, we have talked about discussions you can have with major industry about recycling. I think when it comes to the crunch, in the water cycle business you are looking for a longer term investment. Pipes can last 60 and 70 years. I think it is quite sobering sometimes. You keep talking about an industry that says, "Look, we only have a five-year window. Each five years we decide whether we can go another five years." So they have a very short investment period sometimes in these areas, and so there are some risk trade-offs there that need to be considered in terms of stranded assets depending on who is taking the risk and the circumstances in that period.

MR COX: Thank you. Generally, there seems to be a view on postage stamp pricing of no, except perhaps for mandated residential customers. But there also seems to be a view that it is not a bad idea to have the usage price for recycled water being reasonably close to the recycled usage price for potable water, bearing in mind there are other ways in which the recycled water costs can be recovered. Is that right or have I got that wrong?

MR PICCININ: It depends. Recycled water goes from way better than potable water for some industrial processes, in which case --

MR COX: But just think about residential customers. I think that is probably the case that is really of interest to people here. Are you saying that for residential customers the usage price should be more or less the same, whether it is recycled or potable? Is that right or isn't it?

MR PICCININ: If you are using it for toilet flushing, as I said before, you don't care what flushes in the toilet, as long as the toilet is flushed. If you are talking about the irrigation of your lawn and garden, there might even be

an argument for a premium on that if, because of the nature of recycled water, you are not bound by restrictions whereas more traditional suburbs would have to go into restrictive watering of the lawns during periods of drought.

So, again, I hesitate to say yes or no; it depends on the circumstances. And it depends on the circumstances of that recycled water. If you are talking about an apartment block where it is going to be toilet flushing, it is a no-brainer: it is the same price as potable water. It does precisely the same service.

If you are talking about a different circumstance, where you allow or you exempt a particular suburb from any watering restrictions during periods of drought, you ramp it up a bit.

MR WARNER: We need may to narrow that a little bit because we have to come up with a set of rules or guidelines that can have fairly general application, so we actually have to start getting down to what we actually mean.

I'm trying to narrow the band down here. IPART is going to have to have some rules and guidelines on how you calculate a price, and that can be a formula, but we do need to set some rules about upper and lower bounds. I would have thought that, as a general rule of thumb, at least for the initial stages, we would say that potable water price is the upper bound. Is there consensus around that?

MS CIFUENTES: For residential.

MR PICCININ: For residential.

MR WARNER: Then the lower bound has to be defined in some way, according to something similar to what Sydney Water might have put up. There would then need to be a review process by IPART perhaps prior to putting it in place - does anyone have any views?

MR YOUNG: I'm picking up on David's point, which I thought was an excellent one, that what we need to do when we have got some guidelines and methodology is to grab about half a dozen cases, some real cases, and churn

them through and learn by doing that and tackle the issues. I think that would be very instructive for us all, and then see what is the outcome of this process.

MR GRANTHAM: Using the methodology, you would determine a price. Based on that price, you would then make the decision whether to proceed with that scheme or not, so therefore what's the relevance, then, to upper or lower bounds?

MR YOUNG: Just to come in on that, I guess the relevance would be the case that was being made in a third pipe solution, where the price is so low that it is overused in summer and the plant runs out of capacity and the potable water system is stretched and stressed to come in and supply peak loads, and that is counterintuitive, having two --

MR GRANTHAM: If I had been an ideal economist, I would then value the cost of that potable water supply going in, and that would be another cost into your effluent reuse scheme, which would drive up its cost to the point that that potable water did not have to come in, or only came in to the point that it was efficient.

MR EVANS: Can I just point out that I think some of these very points are what would come out if you did some case studies.

There are two issues here which I think we always have to remember. This thing we call pricing is actually two things: it is cost recovery to allow things to happen, so the rest of society doesn't have to pay for it or the AGL shareholders can get a return, or whatever you want to call it; and then there is the structure of how you establish marginal costs and fixed prices and developer charges and everything to encourage efficient use once you have made the decision to do the investment.

I think if we did the case studies we could say, "Look, we can work our way through the case studies against both what I call the cost recovery criteria and efficient price allocation criteria," and then some of these things will start to fall out.

I think in doing that you will answer your question about the marginal water price because it will tell you

that things are going to be very different in different places.

Some schemes, for example, might have so much capacity that it is a very limited top-up on hot summer days, and they might be right next door to the sewerage treatment plant and therefore the pumping costs might be low, in which case you would rationally say, residential or not, "Go for it, guys, it is fairly cheap water," to put it crudely.

There will be others where the complete reverse will be the case. You may then decide whether you want to do a recycling scheme or not, but putting that to one side, you would have to say to people, "Look, we are going to have to top up 40 per cent of the water in summer time, and if we have to pump it 30km from down the road, the price is the same as potable water."

If you are getting close to that, I think you will go back to your first question, which is, is this a good idea, because you are going to see you have incurred high treatment costs, you haven't got much raw product and you have to pump it a long way. So if that emerges in your case study, you are going to have to go back to your original question Kevin raised about whether it is a good idea. The way we do all this should throw up, if you like, simultaneous answers to those questions.

So we should, through the methodology, be revealing whether it is a good idea or not, how much cost you need to fund it, and how you then price it marginally. They are the sort of criteria to set as we churn the case studies through. These discussions aren't so hard when you get a framework like that to work through, but they become very hard when you just talk about it as a set of very difficult issues.

MR YOUNG: I agree.

MR COX: Are there any further contributions on the issue?

MR KEVIN COX: Perhaps I just might point out that what has been talked about here is actually what people go through when they are trying to determine the price of a product. In other words, I don't think there is any need to have price regulations whatsoever, because what will

actually happen in practice with the recycled water is exactly what we are talking about here now. So there is no need to have any regulations associated with it; it will sort itself out because there is a price level, which is potable water, which determines the maximum price that recycled water can possibly be anyway.

MR COX: Are there any further comments or contributions?

MR WARNER: The next issue deals with cost recovery and pricing structures. We delve a bit further into the detail.

There are a number of costs associated with recycled water, and some of these were touched on today - there are direct costs, joint costs, avoided costs, external costs and benefits. We need to look at the appropriate treatment of avoided costs, and external costs and benefits is an area of uncertainty. The Tribunal needs to consider how costs can be recovered efficiently and to meet revenue requirements of suppliers.

And, of course, price structures should send appropriate signals to users about cost implications and meet revenue requirements for suppliers.

Some of the questions we put to you are what are the most appropriate ways of recovering direct capital and operating costs? We have already heard views expressed about developer charges versus periodic charges.

What is the most appropriate way of reflecting avoided costs in prices? That is going to be vexing.

How can we account for environmental and social costs and benefits of recycled water provision?

Should price structures be prescribed or at the discretion of agencies?

Now, clearly, if we go down the track of having case studies, maybe some of these can get fleshed out and solved in that manner, but we would be interested in your views on them anyway.

MR COX: I think these are key issues in the application of any methodology, so I think they are most interesting.

This, I think, is the heart of it all, so we will be most interested in your views on it. I wonder, Chris, if we can start off with AGL in this instance.

MR HARVEY: I don't know if we have worked out what we think on some of these things, we are just getting our heads around them. On the question of the most appropriate ways of recovering direct capital and operating costs, we still don't fully understand developer charges, but as I started to learn a little bit more about this the other day, I was somewhat surprised to find all that was included in developer charges, given our experiences with gas. My inclination, given our experience, is that I would seek to reduce developer charges and increase periodic charges so the pricing is more transparent.

That is about as much as I can say at this point, except that Linda has suggested that when it comes to capital basis, that is often the place where risks help.

The most appropriate way of reflecting avoided costs in prices? Pass. Can we come back and give some answers on this?

MR COX: Certainly. We would be most grateful to receive any help.

MS CIFUENTES: Otherwise, this methodology is going to be very slim: "Just do it."

MR HARVEY: It's simple: just be good.

How can we account for environmental and social costs and benefits of recycled water provision? It has to find some way into the costs. Linda has pointed out to me that the point we made about where there are distortions in pricing cross-subsidies is one place to apply them.

I think we have to get a way of estimating them, and they have to be credits against price, and they have to be not only credits, but credits that are then passed on to the investor in the recycled water structure.

I don't know about whether pricing structures should be prescribed. I think to the extent they need to be efficient, which means that they need to reflect the structure of costs. I think that probably may be the

general level, it may be the specific level. I don't know. But, as I said, I would like to come back. I would like for us to think about that and see if we can give you some more sensible thoughts.

MR COX: Thank you very much. PIAC?

MS FREEMAN: I'm not sure how much I can answer this either. I guess one concern I have is about how costs are allocated where you have a private negotiation for recycled water and the transparency of that cost allocation between the customer base and the negotiated arrangement. It is something I think the Tribunal needs to give some attention to.

MR COX: Thank you. Sydney Water?

MR EVANS: I think there is a PhD in nearly every dot point, and there will be one in it in 20 years' time as well, because whatever is seen to be the best answer you can get today will be seen as wrong later.

That is not to say, though, that you don't have a bit of a go. I always remember John Patterson, who did a lot of work on pricing, saying, "Don't stop doing something because you don't know exactly what the right answer is." You have to be able to position these things in a framework that people understand, that they can do business within and that broadly goes in the right direction.

I think what often happens is that, for want of a better term, the elasticity of demand is so low in a lot of these products that you can afford quite a range of actual unit price outcomes and not be sure whether you have got it right or wrong. So from a community point of view, you have to just pick something and arrange it and get on with life.

From the point of view of what actually matters to the community, I think the decision as to whether to do these things is actually the bigger decision. I think Kevin and Chris have both touched on that.

So how do we reach a view on the extent to which we pursue these things. I am not quite sure how that decision relates to the particular inquiry that you are undertaking here, but I think it is really important, and I think that

some of our cost recovery rules might help guide us on that.

If we can get a common understanding of the cost recovery rules, it forms a gateway where you can say, "Look, either this thing is clearly a goer, because with allowance for externalities, et cetera, it is returning a good outcome," or, alternatively, it could be that having followed the framework and put all the numbers in, the costs are enormous, even allowing for our environmental externalities or whatever we put in there. Therefore, it might help guide us backwards as to whether we press on or not.

So I think getting the methodology is really important, not only to decide how you recover the costs of the ones that you do do, but also to guide you on which ones you should do. In that sense, to use economic jargon, it is like an investment appraisal: it helps you assess the merits of the case, not just the financial merits, but the total social merits.

So I guess that is a long-winded way of saying don't bog down forever on answering all those questions precisely. Get a range in there somewhere based on a methodology and then use that methodology to test the veracity of your decisions. What it will show you, I think, in some cases is they will fly on and everyone will be happy - like in the Eraring power station and the big recycled water scheme at Wollongong.

In other cases, it is going to show that there will be a significant revenue shortfall, and that will pose the policy question of who should pay for it, which can either be the state in some form unrelated to water charging or it can be, if someone judges it, that the rest of the water consumers should pay. But at least it will throw that question into the open and we can make the decisions as we are going through it.

MR COX: Thank you. Water Services Association of Australia?

MR PICCININ: Could I understand better the last dot point, which is should price structures be prescribed or at the discretion of agencies?

MS DRINKWATER: I guess that is about the allocation of costs between different types of charges - developer charges, fixed and usage charges.

MR PICCININ: Rather than answer any of those questions, I would like to throw some questions at the Tribunal. The interesting thing about developer charges is that there now seem to be two different types of approaches around the country. One is essentially around the IPART methodology with a couple of variances in other jurisdictions, but essentially it is the IPART methodology. Then there is the recent approach taken by the Essential Services Commission. One of the things that the Tribunal could throw some light on is that quite clearly using developer charges or sending a signal to developers in the area of recycled water is not on with the Victorian methodology because it is between $0 and $500, there is no signal to play around with, but it would be interesting to see whether the Tribunal sees merit in the developer charges framework being used to send signals between different types of developers in the same location.

I believe that only the regulator can really make that call. If it does that I think it does offer a scope for sorting out the wheat from the chaff. You might think it is trivial but I don't believe that it is. It would actually send a very powerful message to the industry in terms of the way that you would consider things. Whilst it might be, as you say, a very short paragraph methodology, even that alone would be quite powerful.

MR COX: We will take that on board. It has always been our intention that the developer charges would signal something about different costs of developing in different locations. That is what we have tried to do and as far as I know it has worked reasonably well.

MR EVANS: I suppose it is a question of, as you say, Chairman, a resource allocation signal and if we believe that has been successful for the other two product lines, why not for this one.

MR COX: Yes. Gosford?

MR DIFFEY: I am a bit daunted. I have all these learned economists in the room and I am a humble engineer, so I have no chance of answering any of these questions, but

I'll have a stab. We have taken a fairly simplistic approach. We obviously would prefer IPART to come up with a methodology, if that methodology is a formula. The existing formula for water charges is a small fixed charge and a larger usage charge. That seems to work pretty well. I take on board Lee's point that the fixed charge should be as small as possible. In the case of recycled water at Rouse Hill it's pretty small: $25. I don't see why that model still couldn't apply to this price structure. The simple model would be a fixed price plus a variable charge that reflects the capital cost and the operating cost over the life of the asset. However, the capital component should have deducted off it, of course, any capital contributions made by developers, any subsidies or grants that have been gained by the agency and - the $64 million question - the identifiable avoided costs.

That, of course, is the problem. We have a good example at Gosford and Wyong. We are in the process of spending $25m to $30m on the Hunter connection. We are not going to say, "Well, how about we only spend $20m because we might be able to avoid $10m of that if 15 years down the track we might put in enough recycled water schemes to save the amount of water we would have transported with the extra $10m." That's not going to happen. The whole avoided cost issue gets down to a bit of engineering commonsense, as far as I'm concerned. You look at the project you're doing and you say, "Is this really deep down in my heart going to avoid any major projects in the future?" If you can say "Yes" and argue reasonably cogently to Richard Warner or Jim Cox or Cristina, or anybody else at IPART, then that gets taken into account in the methodology, in the formula, and you guys will say, "Yes, we agree with that" and we get on with business. That is a very simplistic approach, but that's an engineering solution, I guess, to a difficult economic question.

The environmental and social costs is another vexed question. My finance people would tell me, "We need the revenue. Don't give me anything about environmental and social benefits because how do you put a dollar value on that?" With due respect to my learned colleagues here who are in there battling for the little people, in the end the water agencies have to be viable businesses and it is no good us saying, "We're going to put a $1m environmental benefit on that project or $1m on that social value." In

the end if it doesn't result in revenue and we go broke then everybody loses. Again, that is probably a bit black and white and engineering, but that's how I see it on behalf of Gosford.

MR COX: Thank you.

MR MARTIN: In terms of the most appropriate ways of recovering the costs, as I said earlier, it is our general view that there should be more of a reliance on volumetric charges over fixed charges and I would apply that to recycled water pricing as well. As I mentioned earlier, we certainly believe that some of the costs of recycling should be absorbed into the current pricing for water and sewerage charges as a reflection of the fact that whilst not all customers will have access to recycled water, all customers will have access to at least some of the benefits of increased recycling, be that avoiding the costs of desalination or other augmentation options or the environmental benefits of being able to provide environmental flows and so forth. I think it is appropriate that some of those costs are absorbed into current prices.

As to the most appropriate way of reflecting avoided costs in pricing, I am also not an economist: I'm a mere scientist. It depends on the issue being debated. I would suggest that it needs to be considered in terms of assessing the capital costs. You factor in that you need to recover those, but you also need to perhaps discount, to an extent, the fact that your expenditure on recycled water can actually save you from expenditure elsewhere.

Environmental and social costs and benefits are difficult to quantify and to an extent it depends on what value society and individuals put on them. I would venture to suggest that the values that we put on environmental benefits now are considerably greater than they would have been 50 years ago and that's probably why we find ourselves in such an environmental mess these days. Nevertheless, it is possible to make some judgments about environmental costs and benefits, albeit imprecise judgments, but I think we need to make the best effort we can.

There may still be some people who think that the priority is just simply to run systems as a business and to hell with the Hawkesbury-Nepean system, if they can get the environmental flow they don't care, but I think probably

from a societal point of view we've moved on from that and the public want a Hawkesbury-Nepean system that provides recreational values that can support a fishing industry and is safe for primary contact recreation. I think we need to factor those in. I don't know how you do that easily, but I know there are some economists who have attempted to quantify those.

As far as the final dot point is concerned, should structures be prescribed or at the discretion of the agencies, you've covered that already and I think the general view is it is appropriate to have some degree of methodology the agencies can apply themselves.

MR COX: Thank you very much. Hunter Water.

MR YOUNG: This is a very difficult question, as everybody said. Having spent time in America, the Americans would say, "I take the Fifth Amendment on this." We don't have that, or the First Amendment, so I'd better cut in. The issues are interesting. As Chris or David suggested earlier, do you believe fundamentally in location-based pricing and developer charges rather than the DSP model? We are believers in that. We favour that in water, sewerage and we think recycled should be covered. It should reflect the capital costs and ongoing maintenance costs in the tariff.

A complication on that, from our experience, is that when you talk about that developer charge or that access charge being location based some industries baulk at it and they say, "Surely you've got some flexibility so that we can pay this cost on the tariff." What you've got to do is you've got to add in, "We'll pay the capital off over time on the layby scheme." I think this goes to the heart of what has been said. You've got a choice there. Can we do this? It comes back to a risk profile of what we think about the industry, how long it is going to be viable and what chance we've got of getting our money. There are trade-off issues that the industry has to make. If you had flexibility on the risk margin versus this, that would be a consideration.

Also with some of the major schemes or industries we face, with the costs required, short payment periods and that creates applications as well. Fundamentally, we favour the developer charges that we have on the

location-based tariff, although I think I said earlier in the presentation that from the utility viewpoint that's a Tribunal decision as to how that's traded off and we appreciate that that's IPART's call.

The environmental and social costs and benefits in that PhD thesis that people talked about, I think as a fellow engineer, Steve, you're saying "Show me the money" is the key call from the economic viewpoint. I guess our view is that sometimes if you look at the framework of weighing up things in an integrated water resource plan, you've got to take some view of externalities. That will be a transparent process with the community, that IPART regulate us to go to the community, to weigh up these things, and I think there will be some times when calls are made on that and that will have community consultation and we'll make a decision on that.

We are doing that on the basis of where the money is coming in and IPART in its price path says that's a rational process and they say, "We're making a call for what you invested as decision making on the externalities. We think that is a robust case and we're going to spread that across the community." If we haven't done that rationally or it's been well accepted then the risk is you'll say, "Sorry, that's your call." It goes back to the Tribunal and us believing we're making rational decisions in a rational framework as to how that occurs.

Interestingly, if we go to the third-pipe solution, we've had this debate in our organisation about the savings from putting the third-pipe solution in of deferral of avoided costs, but we're competing against a rainwater tank system which has the same deferral: putting a rainwater tank in. In that sense you're getting a similar benefit, except perhaps rainwater tanks run out of water in severe droughts and the third-pipe solution does not. That needs to be considered.

The avoided costs would be best done in discussions through some case studies which I spoke about this morning. One was Karuah where we looked at recycling versus higher waste water treatment costs. Recycling was cheaper, so we did it. In that sense the avoided cost was we just paid for the total scheme and it went in the DSP on the waste water side. It wasn't a DSP of recycling. It was the best way forward. It was agreed by all to be rational,

developers found it to be sound and we just did it.

It was fully covered under that DSP. It wasn't a separate recycling charge. In some cases for big recycling schemes you can get reductions, you can push back capital expenditure on the side and I think it is an easier case to calculate the avoided costs than it is for IPART to decide how we capture that money.

If we see that there is a case made that we've invested in a major recycling scheme, it effectively has allowed for a certain amount of growth for the supply and demand balance, just the same as if we'd invested in more supply capacity because the recycling scheme in fact has freed up existing capacity. If it is the most rational way forward then we can calculate the avoided cost. The issue for IPART is how is that cost captured as a benefit to the recycling? Do we get that money back through developer charges or tariff? How that should be done I defer to greater economic minds in the audience. It is a very difficult area.

MR COX: Thank you for those words of encouragement. Wyong.

MR GRANTHAM: From my perspective, cost recovery really becomes a function probably of two things: who could best manage the risk and who really wants the project. I say that from experience. For residential recycling systems, okay, we run a risk. If a developer wants to develop, he's going to have to put in a system. He is going to have to pay the contributions and to the agency recovery of costs for a periodic charge, if it is a low-risk type exercise.

Looking quickly at two examples in relation to large users, these are two situations we've discovered recently. A large developer wanted to put in a golf course. In our current water supply situation he would probably never get his DA without effluent reuse for the golf course. He might have got it, but there would have been a lot of delays in getting it because of the water supply situation on the coast and he would have incurred one hell of a lot of adverse publicity in the process. Therefore, he was particularly concerned to get effluent reuse and therefore getting an upfront full contribution for the capital costs of those works and paying ongoing O&M costs was not a

problem.

By comparison, a local golf course which had very little cash was quite happy over time to pay off the cost of the scheme through the periodic charges, it was more than happy, and council was in the situation where we wanted to get load off the water supply system and council was more than happy to say, "We'll pay upfront for capital cost and through periodic charges over time we will recover that capital cost from you." It was a win-win for us because we would recover over time and for the golf course because they were using effluent, which is cheaper than paying the water price, the fact that they were able to use increasing volumes of effluent and not pay more than what they previously paid for potable water.

Kevin's point is very valid. When you deal with industry they don't like to part with capital up front. They would much rather pay in annual charges. They would like you to bear all the risks for the capital and as I said when they do look at that they're typically looking at short time frames of two to five years. They're not interested in parting with capital up front. My note of warning would be that if we become too prescriptive in this area, we might miss opportunities.

MR COX: Thank you.

MR LISTOWSKI: I don't want to repeat all the comments about the PhDs and the economists' research. I would like to add one dimension that I think is important in establishing for the cost recovery and that's to allow for an appropriate time scale or time frame in making such an assessment and that applies to both the capital costs and the operating costs, revenue, avoided costs, et cetera. I think it is important to have the context of the time scale of life-cycle costs. That is basically in addition to the comments I heard before.

MR COX: Thank you very much. Are there further comments or contributions? I will come to you in a second, Mr Cox. I will see if there is anyone on the panel who want to get in first. Yes, sir?

MR KEVIN COX: I think this is the crucial part of the whole thing and really I think is where the regulator does have a big role. Maybe I am being a little bit simplistic,

but essentially it seems that the water authorities should be allowed to increase the prices of existing water provided they spend it on recycling systems. Make it real simple. You can increase your prices provided you put it on to your users for recycling systems.

MR COX: Yes. Kevin?

MR YOUNG: I think logically I'd argue against that on the basis that it is a hypothecation of an increase to a single focus when I think the reality is what we're trying to do is for the community to get the best. You should pull as many levers as you can. In America they're finding it harder to get new schemes up, it is very expensive, but they're also looking at how much money they spend on refit schemes for houses and education of the community is important and leakage management and pressure management within schemes and recycling, and I think it is case-by-case specific of where we best spend our money.

If we say we're going to put an extra 50 cents on the following water price and we're going to spend that on recycling, at the end of the day have we achieved the best outcome? The case for that money is what should we have spent it on? I think that is the integrated water resource plan where we say what is the supply demand balance, where is each agency at and where do we best need to spend our money? That will indicate as a community what we need to spend. It will indicate the mix that we go forward on. I have a counter view.

MR KEVIN COX: When I said "recycling" I meant it in the broadest sense. The money could be spent on education. I think of that as being essentially part of the sustainability issue. In other words, that the money is spent on things that help make us sustainable is really the issue here. Recycling is one way and some of these other ways, of course, should be included, but the money to do those things should come I think from the existing consumers of the water.

MR YOUNG: Some of that money could be used sensibly and in a sustainable manner, which I think is what you're saying. I don't disagree with any of that.

MR COX: Any there any further comments? It seems to me there is a degree of support amongst this group for

developer charges that signal location. I think there is support for that. I think there is a good deal of support for taking into account environmental and social costs and avoided costs in recycled water pricing. Some avoided costs can be worked out. There is a need to establish social arrangements that make it possible for water agencies to be able to invest in recycling schemes where it is economic for the community that they do so. There is also I think support for IPART in trying to go and work all this out, which I thought was very kind of you, but I do appreciate your offers of further assistance.

MR EVANS: Could I make a comment in the spirit of not getting it 100 per cent right? The difficulty that we face in running these organisations is that everybody wants you to do their particular thing and it turns out there isn't enough to go around. You have to ration it somehow. The issue that I think is important - it's the point Kevin was trying to make and I think you made it last there, Jim - is if we could get this consensus over a five-yearly basis of how we're going to meet the water supply based on a rational combination of demand management, recycling and whatever else we have, then it might take some of the pressure off this costing business because assuming that was done well, the job of the cost recovery instrument would be just to make sure, given that decision, you recover costs and you recover them efficiently.

Therefore, I think sometimes you've got to put the social planning bit up front if you can and then believe the methodologies to do that have been halfway sensible and then say, "If we could get that right what are we now left with?" I think if you do that it's a little bit easier. Otherwise, you might run the risk of a charging methodology being used to referee a fight that's too big for a charging methodology to referee.

MR COX: Thank you. I think we might move on to our final session.

MS DRINKWATER: Our final issue for discussion is sewer mining. There are some Government initiatives underway, as some of our presenters mentioned, which are likely to increase private sector participation in the water industry and that could see an increase in sewer mining. The Tribunal has previously set a zero charge for sewer mining, but it can be argued that if there are avoided costs for

water agencies for sewer mining, a zero charge might not result in the right level of investment.

Some questions need to be asked. The first one is is there a need for price regulation of sewer mining activities or should prices be negotiated between the parties? Sewer miners would probably be large players, so there might be a case for individual negotiation. Are there avoided costs in water and sewerage systems due to sewer mining? How would you go about determining them and are they significant? What are the upstream and downstream costs or benefits of sewer mining? For example, if there's already a sewer miner on the system taking sewage and another proposal for sewer mining came in, what are the implications of that for the system in general?

MR COX: Could I ask Gosford to lead off. Would you like to comment on sewer mining?

MR DIFFEY: An important point here for us is that this seems to be targeted more at external companies coming in and extracting the water agency's sewage, if you like, and then treating it and using it for their own purposes. From Gosford's perspective, again, because of topography and geography, we don't see that as highly likely in our council area. We think it's more likely that we'll run our own sewer mining activities which we may then onsell for industrial and irrigation purposes. That is a different pricing issue. There still needs to be a methodology applied to that product.

As to the question if an external company came in to do sewer mining do you charge then for that product, there is always scope to charge them some nominal fee. In Gosford's case avoided costs would be very minimal. Again, because of the topography and the potential for these sorts of schemes, the amount of sewage that's not going to be transported to the sewage treatment plant is fairly nominal, fairly minimal, and there is not going to be any noticeable change to the operating costs of the sewage treatment plant.

What are the upstream and downstream cost benefits of sewer mining? In Gosford's case, I don't really see anything specific in that area. Again, I would like the Secretariat and the Tribunal to consider, as we said in our presentation, widening your definition of sewer mining in

this context to include sewer mining done by the water authority because that is what we're more likely to do.

MR COX: Thank you. Total Environment Centre.

MR MARTIN: I think there does need to be regulation of pricing for sewer mining activities simply because in the absence of it there is the capacity for agencies to use pricing as a barrier to competition. For instance, if you simply left it as a matter of negotiation between the agencies and prospective sewer miners, the agencies could seek to put barriers in terms of pricing or other conditions which may make it difficult for sewer miners who could ultimately sell the product in competition to those agencies themselves. There does certainly need to be regulation there to prevent abuse of monopoly powers.

I also think it is appropriate that sewer mining pricing be set at merely the cost to the agencies of providing that access. That is going to vary from one application to another and certainly, as I said earlier, those prices should reflect the benefits to the agency as well in terms of avoided costs, which brings us to the next point. I think there are going to be a number of avoided costs. One of those could be pumping: simply, there's less effluent to pump from one place to another. There's less effluent to treat, so the energy costs at sewerage treatment plants may be reduced.

It may also reduce the need for augmentation of sewerage systems in the future. There certainly are a range of avoided costs that need to be borne in mind. Also, in terms of avoided water costs, it may be you avoid augmentation of supply in the future. There is a whole range of things that need to be factored in.

I think, as we said in our submission, it is important that credits be given where such a method can be developed. In terms of the upstream and downstream costs and benefits of sewer mining, I'm probably not able to give you a detailed answer on that, so I might leave that to some of the other people around the table.

MR COX: That you very much. Hunter.

MR YOUNG: It is not an area that we have spent much time on. In the past we have had a number of people come

forward with sewer mining proposals and for one reason or another it hasn't got up. It seems to me to be a classic case on this case study that we're talking about of what is sewer mining. Is it are we going to run the sewer mining plant and sell the effluent? Is it that someone is just taking the sewage? In the cases we had it was someone setting a plant up and then taking the effluent and putting the solids back into the sewer, which was the commercial arrangement they wanted which for us, depending on the location, it was in a flatter area with smaller sewers, meant that we lost self-cleansing flow and we needed to be able to flush the sewers and that means do we use potable water for that or do we buy effluent from the person who is sewer mining to be able to get the sewers working properly again? In other cases in the Gosford area which has steeper mains and bigger pipes I can see that that could all come in. If the solids are coming back in then you don't get the benefits from the treatment plants because treatment plants generally are about the organic load that's come through the plant. They are case by case.

As an engineer, I have been heavily involved in the design of sewers. The New South Wales and in fact the Australia-wide situation with sewers is that they're generally designed for major wet weather flows, so the fact that in dry weather you take a little bit of flow out doesn't make much difference at all to the capacity of the system, which is essentially wet weather designed. There are not many avoided costs in it. I think it is a classic case where the answer on avoided costs will be specific to the type of sewer mining that is going on, the location, the size of the mains and the flatness of the sewers. The answer is that it depends.

MR COX: Thank you for that. Wyong.

MR GRANTHAM: I think Kevin has covered it very well. If you allow someone a zero charge to take out all your water component, or a large proportion of your water component, that can leave you with downstream self-cleansing and odour problems because of long detention times in your sewer and particularly the way sewer mining is typically portrayed, we're going to take out the water and put the impurities back in and that means in the treatment process you'd want to take a look at pumping through the system, but you've saved very little.

The other thing is the time value of the resource. I have seen effluent over the last five years in our area go from a product which we couldn't practically give away, through public protest about using it on the golf course, to acceptance and quite possibly in a couple more years we might have someone wanting to buy it. Again, probably that raw sewage product will have a change in time value. Those factors, in other words, the risks to our sewerage system and the time value, need to be taken into account in any decision we make now.

MR COX: Thank you.

MR LISTOWSKI: Mr Chairman, I have more questions than answers in this particular situation simply because we have been looking at that issue at Sydney Water for a number of years. As I mentioned before, I think we need to understand that we have to define what sewer mining actually means so that it is clearly understood in terms of the roles and responsibilities of each party, as well as liability, that we are concerned to see that sewage is the product that has been made available, so to speak, to other parties.

The same thing would apply also to understanding the cost elements that are associated with the sewerage system in terms of collection, transportation, treatment and maintenance, asset management, et cetera. In that way you can establish a base-case scenario. I think access to the water utilities will allow the third parties to take the product. That is an important factor in setting the price structure. Is there access for the purpose of just taking the water or access for the purpose of using also the infrastructure? There could be a pumping station used for the dual purpose of sewer mining and the transportation of sewage further downstream.

The other aspect which I have difficulty grasping is who actually owns the customer in that particular case when the third-party sewer mining operator is downstream? Will this operator have access to the customer sewer discharge or sewer service charges and pay Sydney Water some availability charge, or would there be another methodology which says that we just discount the avoided costs of Sydney Water and establish or agree some price?

We should also look at further responsibilities which

water utilities have in regard to trade-waste arrangements that needs to be policed and managed at other times, particularly for the third-party operator which doesn't have access to the catchment, and establish effective means of managing what is happening in the catchment. Sydney Water or the water utility has those mechanisms in terms of trade-waste policies and licences.

The last issue which is important as well for the third-party operators is the issue of biosolids and residual disposal. That is a challenge that any large operator within an urban area in particular will be faced with. There are no current provisions in urban areas to address this issue effectively. Those are my comments. Thank you.

MR COX: Thank you very much.

MR HARVEY: Is there a need for price regulations? I guess our answer is probably there is a need for some sort of regulation but not, as it were, price regulation. I don't need to go into the process of regulation. We've discussed that already. The idea of some sort of guideline to make sure that we get the right answer in negotiations is what's needed. We haven't formed a view about how much that needs to be. All we can say is we don't really know, but we've heard enough today to suggest that there are avoided costs. The question is what are they and we accept that from the discussion beforehand there is an issue about the case by case.

Is the dynamic going to be one where there'll be reasons for those to be accurately revealed? I think there's reason to believe they will be because if there's a benefit to the relevant utility then they have a reason to want to see it come out and realise it in the case of the project. There just needs to be something that helps us get there. As regards the benefits upstream and downstream, take it away: you guys know.

MR COX: Thank you. PIAC.

MS FREEMAN: I was going to say I think it is pretty obvious that there is a price benefit for the customer base to undertake water reuse through sewer mining. We need to be conscious as well that there is potentially a price cost to the customer base from the assets that come about as a

result of that. There is potential for the Tribunal to further consider that in the regulation of the pricing of sewer mining.

MR COX: Sydney Water.

MR EVANS: I think nearly all the things that should be said have been said. At just a slightly different angle, and perhaps to pick up something which Chris said, a number of these issues appear to their proponents to be tremendously elegant and look like great social ideas. I have been through all this in the last 15 years where people say, "We've got these fat, lazy monopolists that don't have a clear idea and don't even understand end-of-pipe solutions" and people on the outside then bang on the door and say, "If only they understood the virtue of sewer mining" - blah, blah, blah - "we'd have a different culture." What I think is a bit of a problem is that the people inside grew up on all the things Kevin was unlucky enough to grow up on - you know, sewers, watching solids and things like that - and people on the outside perhaps are thinking higher thoughts.

The great advantage I think of us actually grinding some of this stuff out is perhaps it will allow the bottom dwellers and the higher thinkers to come to a common understanding of the issues, because at the moment we're wasting an enormous amount of energy in a philosophical debate about why don't we do more and we can't do more because it doesn't work. I think having a good go at drawing this stuff out will show people what the real issues are. It will show the marketplace what they would have to do if they want to become involved and perhaps actually help the marketplace.

In my experience, on a couple of occasions when I was in the Hunter people came to us wanting to do sewer mining and we were more than happy for them to do it. It wasn't a problem, everybody was tremendously keen, but then you actually go through all the issues we just went through and then the people are going to take the product away and have to think of the liability issues with spraying on a golf course, or whatever it is, and with all the very best will in the world it didn't work out; but people from the outside look in and say, "Those bastards don't want to sewer mine." It's not that; it's just that sometimes it doesn't work.

To avoid these sorts of rock-throwing exercises it would be really good I think to complete this exercise and put it out there, let everyone see it, put it on a website or something that somebody wants to do sewer mining and they can come in, have a look, understand what it would mean and we can all get on with life. I think there is a value to some of this work above coming up with a pricing arrangement as such, in coming up with "the" arrangement so people could see how it might work, and to that extent I think it is worth investing to help clear some of the fog away from what otherwise would become perennial, long-winded arguments.

MR COX: Thank you. Water Services Association?

MR PICCININ: I really have nothing to add except that I think it is a pity that if we go back to the 1990 COAG reforms, the Productivity Commission, as it was then called, and the Industry Commission undertook a study of micro construction, performance of the gas and electricity industry, and basically decided what was national monopoly, what was contestable and how it would be opened up to competition and what arrangements there would be.

It is a pity I that the same thing was not done for water, wastewater, recycled water, sewer mining, access regimes and all such things. What we are seeing is ad hocery and, as David says, disappointment that something that has been supplied at zero price, for Christ's sake. They don't take up and say, "gee whiz, it must be a real gem of an idea", but as I said it is disappointing that we didn't do this before 1994 when we had the water reforms. That is all I have to say.

MR COX: Thank you. Any further comments?

MR YOUNG: Just a comment that we are looking at sewer mining as maybe a special category. I am not sure it deserves that, whether it fits into the whole recycling, wastewater recycling, and the methodology we are applying is another case study, it is in that rut that we are recycling either through having a treatment plant at the end of the pipe or we are intersecting it before then. It is still recycling at the end of the day. It is the same methodology, the same principles we talked about during the day, and the same idea of having some case studies rather

than a special category.

MR COX: Any further comments? I think there is a fair degree of agreement on the big issues. As to what the next steps might be, I welcome the offer to work through some case studies. I think that will do an enormous amount to put some reality to this, so I encourage people to work on those and provide them to us. I also know some people were kind enough to offer us further thoughts and we would be grateful to receive them.

Given our time frame, I think we would like to receive those by Thursday 13 April, so that will be the date for further submissions.

I must say I have found this to be extraordinarily interesting and helpful and it has certainly advanced my understanding of the issues considerably. So I would like to end by thanking everybody who participated and for your assistance. It has been very helpful, and obviously some difficult issues have been put in our direction and we will welcome any further assistance you can give to us resolve them.

MR EVANS: Are you going to take up Claude's suggestion and fix it all up at once?

MR COX: I think we are fixing up the whole industry at once, that is what I am worried about. Thank you very much.

AT 3.30PM THE WORKSHOP CONCLUDED